AGENDA ITEM: IX C v

Florida Polytechnic University

Board of Trustees

December 17, 2013

Subject: Online Education

Proposed Board Action

No Action Required – Information Only

Background Information

During the October board meeting, staff was asked to do an Online Education presentation at the December board meeting. Dr. Darkazalli will provide an overview of Online Education.

Supporting Documentation:

Recent articles Concerning MOOCs and Online Education

E-Learning and Online Education Brief

Information Gathered at the UF Online Workshop (Including MIT and Georgia Tech points of view)

The BOG Task force report on online education.

Prepared by: Dr. Ghazi Darkazalli, Vice President of Academic Affairs

CAMPUS TECHNOLOGY

Online Learning | Feature

What Will Happen to MOOCs Now that Udacity Is Leaving Higher Ed?

Sebastian Thrun threw a wrench in the MOOC model by declaring that massive open online courses don't work for higher education. What's next for the online learning trend?

- By John K. Waters
- 12/11/13

It was about a year ago that the idea of using the Web to provide open-access, online learning at scale was thrust into the international spotlight. In November 2012, the *New York Times* christened "The Year of the MOOC," and a concept that had been percolating relatively quietly in academia quickly became The Next Big Thing.

Now a founder of one of the leading for-profit MOOC providers says massive open online courses aren't working in higher education. In a recently published *Fast Company* interview, Sebastian Thrun, co-founder of Udacity and one of the most-often quoted champions of the MOOC model, said that his company has "a lousy product" and revealed that he's planning to shift his enterprise's focus from higher education to corporate training.

Thrun, a Google Fellow and pioneer of the self-driving car, has a high profile in the MOOC world, so his comments provoked widespread reaction — everything from gleeful I-told-you-sos and barbed comments about his company's "Silicon Valley blindness" to existing learning research, to pointed criticisms of Udacity's business plan and Thrun's hyperbolic branding and buildup of unrealistic expectations about an online education delivery model that is still evolving.

There's plenty of evidence — and no shortage of acronyms — to suggest that MOOCs are, in fact, evolving. The first generation of cMOOCs, based on the connectivist peer-learning model, led to the xMOOCs that hit the market in 2011 with a more traditional lecture-based format and the backing of companies like Udacity, Coursera and edX. Cathy Sandeen, vice president for education attainment and innovation at the American Council on Education (ACE), has identified a third generation — MOOCs 3.0 — which disaggregates the elements of the xMOOC for customized uses on campus. Some have labeled versions of this model "small private online courses" (SPOCs). In early 2013, University of Texas at Austin psychology professors James Pennebaker and Samuel Gosling taught the first "synchronous massive online course" (SMOC), which added coordinated live lectures to the model. This last fall, some 17 colleges and universities offered a MOOC variation developed by Anne Balsamo, dean of the School of Media Studies at The New School, and Alexandra Juhasz, a professor of media studies at Pitzer College (CA), called "distributed open collaborative courses" (DOCCs), in which classes are organized around a central topic and the expertise is spread among the participants. Last spring, Daniel Hickey, associate professor at the Indiana University School of Education, got a grant from Google to create a "big open online course" (BOOC), a

MOOC-like class built on Google's Coursebuilder course management system for up to 500 students. And coming in 2014: homemade MOOCs built on a platform that will be managed and hosted on mooc.org by edX.

What does it say, then, about the future of the morphing MOOC when the man who has been called "The Godfather of MOOCs" seems to be throwing in the towel?

According to George Siemens, not that much in the long run. Siemens is a professor at the Center for Distance Education and a researcher and strategist with the Technology Enhanced Knowledge Research Institute at Athabasca University in Alberta, Canada. Back in 2008, Siemens and online learning maven Stephen Downes designed and taught what is widely considered the first MOOC (of the connectivist variety).

"A year from now we'll be talking about something different from MOOCs," Siemens told *Campus Technology*, "but in my view, we'll still be asking essentially the same questions: How do we teach in digital networked environments? How do we teach when the power balance between a faculty member and a learner is different than it was in the past? How do we teach when learning can be tracked and measured and assessed outside the university or formal education?"

Those questions point to the underlying trends that spawned the MOOC in the first place, Siemens said — namely rising tuition and the growing influence of technology and social media on learning.

"MOOCs are a reflection of a series of trends that continue to influence the education sector," he said, "which means that tomorrow MOOCs *could* go away and those challenging aspects of our higher education systems would still be there."

Full Steam Ahead?

MOOCs certainly don't seem to be going away any time soon. Thrun's broody admissions notwithstanding, other MOOC-in-higher-ed ventures are moving forward apace. FutureLearn, for example, is busily rolling out courses for a big pilot program in the UK. Coursera just landed another $20 million in new funding. The business-oriented social network LinkedIn announced partnerships with Coursera, edX, Udacity and others that will make it possible for members to cite their completed MOOCs in their resumes. Stanford University's (CA) Venture Lab project has blossomed into NovoED, which is partnering with the Carnegie Foundation for the Advancement of Teaching on MOOC-like approaches to support college-level quantitative literacy and math skill development. And Udacity's own partnership with Georgia Tech to offer the first fully accredited MOOC leading to a low-cost Master of Science in Computer Science degree is about to bear fruit. The program was developed in partnership with AT&T and is set to launch in January 2014.

Siemens has mixed feelings about all the entrepreneurial activity erupting around MOOCs. He said he was happy initially to see pioneers like Thrun and Coursera's Andrew Ng and Daphne Koller "experimenting and trying to stir up the inertia in the education sector," but the hype generated by Thrun's branding activities in particular "derailed the quality conversations" among researchers and educators about the challenges MOOCs were addressing.

Thrun went on the record early with rhapsodic predictions about the impact of MOOCs on higher education. "You can take the blue pill and go back to your lecture of 20 students," he told journalist Blake Graham shortly after his first MOOC experiment at Stanford. "But I've taken the red pill and

seen wonderland." A few months later, he told *Wired* magazine that in 50 years, the proliferation of MOOCs would reduce the number of institutions delivering higher education worldwide to *10*.

This kind of rhetoric cast the MOOC as competition for traditional colleges and universities, which would eventually rile faculty and, Siemens argued, obscure the potential of the model to expand services to students and the community. But he also noted that that language has been changing as MOOCs are increasingly seen less as models that might replace faculty and more as potential extensions of the university.

No 'One Course Format To Rule Them All'

Thrun's announced pivot away from higher ed comes after San Jose State University (CA) published the initial results of a much-talked-about experiment with a for-credit MOOC program developed with Udacity. Disappointing student performance prompted the school to put the program on pause this fall, with plans to start it up again in January 2014. Lost in the headlines generated by those results, Siemens pointed out, is an earlier SJSU program developed with edX, the joint effort of Harvard (MA) and the Massachusetts Institute of Technology to create an open source online learning platform. That program provides edX courses as optional resources for SJSU professors who want to use them for flipped classes.

"It added a MOOC layer to existing university activity, and that produced significantly better results," Siemens said. "That's the biggest change we're seeing now. It's the blended model that gets the improved outcomes, that gives the MOOC a different role — as a resource that can improve the quality of the residential university experience, rather than an entity that competes with it."

Alexander Halavais, associate professor in the School of Social and Behavioral Sciences at Arizona State University, is a social media researcher, well known higher-ed blogger and president of the Association of Internet Researchers. He agreed that pitting the MOOC makers against the colleges and universities, whether part of the plan or a byproduct of the hype, has been counterproductive.

"MOOCs have, at least in the incarnation that has been especially pushed by Udacity, been hyped to a ridiculous degree," Halavais said. "In particular, placing them in tension with a traditional liberal arts classroom, which is a pretty rare beast, is guaranteed to make them a losing proposition. It's not about MOOCs replacing courses at liberal arts colleges. It's about learning happening across a large number of institutions and networks in lots of new ways, and making sense of that new complexity."

Halavais sees the MOOC as "a collection of disruptive elements sparking something else in the higher ed ecosystem," and doesn't believe the term "evolution" fits in that context. "MOOC" is shorthand for "experimenting with online education at scale," he said. But the term could work, he allowed, if the evolution of the MOOC is seen as more of a Cambrian Explosion, in which a large number of new approaches are appearing quickly and disrupting the ecosystem as a whole.

"There isn't one course format to rule them all," he said. "There never will be and there never should be. MOOCs were and are just one potential collection of approaches to organizing a course."

An Ongoing Evolution

In fact, said ACE's Sandeen, "MOOC" may be a sexy buzzword for the press, but for those in the thick of educational research it's just another stage in the ongoing evolution of online learning. Even among the big three providers, it's an imprecise category, she noted. Coursera is all about global

access, so "massive" was always part of its strategy, as was partnering first with elite universities to gain enrollments. Udacity was always about a higher level of instructional design and the use of analytics. The resulting MOOC was a much more vertically integrated and controlled product. In the middle is edX, a nonprofit that integrates a high degree of instructional design into its programs but provides little instructional design support for institutions.

"The MOOC is going in all sorts of directions," Sandeen said, "which is understandable. But we at ACE still believe there's some promise in the idea of using MOOCs to help students gain degrees. Some institutions will accept MOOCs for credit if they have third-party validation associated with them, and usually some authentication. And some employers may consider MOOCs on job applications. So there are many different ways in which this story will continue to unfold."

The most exciting thing about that unfolding story, said Michael Wesch, associate professor of cultural anthropology at Kansas State University, is the way those who are experimenting with and changing MOOCs are dissolving categories and "making us rethink what it is we're actually up to."

"'MOOC' is not so much a definable thing as a rallying cry to serve people who cannot come to traditional higher ed institutions," Wesch said. "The term has taken on a lot of baggage, but I suspect we won't be using it for much longer. The truth is, it's never been at all clear what people mean when they say 'MOOC.'"

Gerry McCartney, CIO at Purdue University (IN), is no fan of the MOOC in higher education and said corporate training is a much more appropriate application of the model. However, he applauded the MOOC makers for demonstrating that "content has almost no value."

"The money is not in the content," he said. "It's not in the material, and it never was. I can watch 'The History Channel' and learn a whole pile of stuff, but I don't get college credits for that. What a MOOC does is automate a part of the process that was already fairly low value. That's what the investors missed. You're not hitting the high-value part of the equation. It's not just a question of, well, now we can get the best Chaucerian professor in the world and have her teach one class to everyone in the whole world. They can just go read her book if they want that experience. It's the personal interactions with the people who are in the room with you — the instructors, the other students — that have the value. And that's not scalable."

Amin Saberi, the Stanford associate professor of management science and engineering who developed the NovoED platform, argued that Thrun's pivot has within it something essential for the evolution of the MOOC in higher education.

"We need that kind of willingness to acknowledge lessons learned and to make changes accordingly," Saberi said. "We maybe don't think of him as humble, exactly, but this shows a kind of humility that we need to move forward. The technology of the Web and online education are going to continue to have a disruptive effect on higher education, but MOOCs are just one model. We will all be learning our lessons and then applying them in slightly different ways as online learning evolves."

About the Author

John K. Waters is a freelance journalist and author based in Palo Alto, CA.

The Potential for Online Learning: Promises & Pitfalls

By William G. Bowen

I am a convert. When I gave the Romanes Lecture at the University of Oxford in 2000, I concluded: "All the talk of using technology to 'save money by increasing productivity' has a hollow ring." I did, however, add the not-so-profound thought that "this could change." Indeed, when I delivered the Tanner Lectures at Stanford University in 2012, I stated: "Far greater access to the Internet, improvements in Internet speed, reductions in storage costs, and other advances have combined with changing mindsets to suggest that online learning, in many of its manifestations, can lead to good learning outcomes at lower cost."[1]

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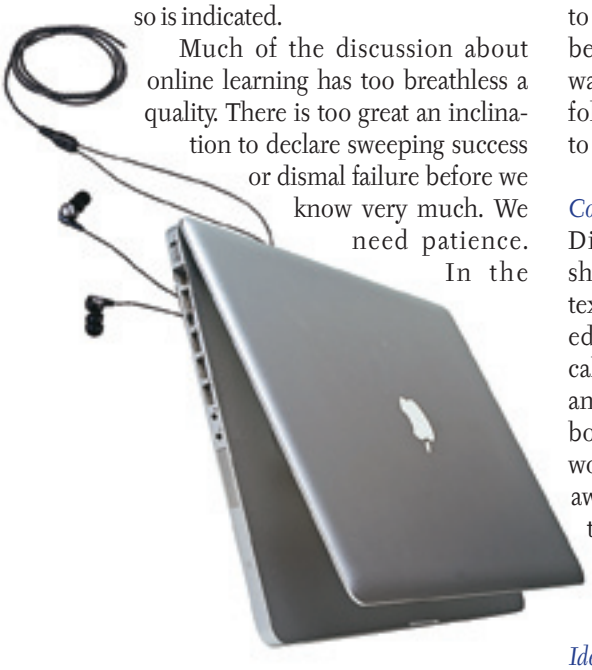
Converts, though, can sometimes be overly optimistic. I would here like to temper the optimism for improvements in access and the acquisition of knowledge with a realistic discussion of opportunities, noting some pitfalls to be avoided. I will start by providing a few general reminders, followed by eight propositions for us to keep in mind as we look for ways to harness information technology through the medium of online learning.

Reminders

These are early days.

We cannot expect to have answers yet to the important questions about online learning. At this point, the most we can hope for is to have identified key questions, to have shown a willingness to test out ideas, and to have demonstrated a readiness to modify approaches if doing so is indicated.



Much of the discussion about online learning has too breathless a quality. There is too great an inclination to declare sweeping success or dismal failure before we know very much. We need patience. In the book *Higher Education in the Digital Age,* I told the story of the Black Horse, from *The Arabian Nights:* A prisoner who was about to be executed was having his last audience with the Sultan. He implored the Sultan: "If you will spare me for one year, I will teach your favorite black horse to talk." The Sultan agreed immediately with this request, and the prisoner was returned to his quarters. When his fellow prisoners heard what had happened, they mocked him: "How can you possibly teach a horse to talk? Absurd." He replied: "Wait a minute. Think. A year is a long time. In a year, I could die naturally, the Sultan could die, the horse could die, or, who knows, I might teach the black horse to talk."[2]

The world of educational technology continues to develop rapidly and could go in a great many directions. Although we cannot afford to do nothing, we need to proceed with caution; we also need to be prepared to find ourselves, at times, waiting to see how developments unfold. Maybe we will teach the black horse to talk.

Context matters.

Discussions about online learning should be placed squarely within a context shaped by the prospects for higher education in general—considering fiscal and political realities and the values and goals of the educational enterprise, both in the United States and around the world. It will not do to simply assume away serious problems, such as the fact that in the United States, the prospects for more generous state funding of higher education are bleak.

Ideological assumptions can be limiting.

Although we should be aware of the interests of key stakeholders, we should not be too quick to condemn what some in higher education may regard as impure motivations—for example, making money. Making money can be just fine, and even necessary for sustainability. We should focus more on incentives, on behavioral effects, and on outcomes than on who makes what kind of return on an investment. Glorifying nonprofits simply because they are nonprofits is a mistake. Some of us have learned (often, the hard way) that nonprofits, as well as for-profits, can behave abominably.

Similarly, we should be careful not to glamorize "open" systems just because they are open, and we should be careful about uncritically accepting assumptions such as "information wants to be free." As economists keep insisting, nothing is really "free." We must not forget what is needed to create content and what is needed to sustain digital resources. My worry about MOOCs (massive open online courses) right now is not that they are too heavily focused on making money but that they may not be sufficiently focused on generating the continuing flow of resources needed to maintain, upgrade, and sustain their offerings.

Propositions

1. We need to distinguish among target populations.

Much of the discussion around MOOCs is marred, in my view, by too much of a tendency to search for a single *grand narrative*. "To disrupt or not to disrupt" is hardly the way to frame any discussion of online learning, especially when there are so many variations in modes of delivery and so many variations in target populations, with different needs and priorities.

Absolutely crucial is the distinction between the needs of individual learners and the needs of the institutions—colleges and universities—that are currently in the business of teaching students and awarding degrees. Providers of new forms of online teaching are going to evolve differently depending on whether they are primarily providing courses directly to individual learners (a business-to-consumer offering) or are primarily providing courses and services to academic institutions (a business-to-business offering). Both approaches will develop in this marketplace, and both are likely to have real impact.

We cannot expect to have answers yet to the important questions about online learning.

Can MOOCs serve what are, in effect, two quite different masters—institutions as well as individual learners?

There are, of course, major differences within each of these two broad categories: individual learners and institutions. Individual learners, whether in the United States or abroad, face a variety of constraints and have a variety of objectives. Many MOOC students live in countries where educational capacity is very limited—for example, in Africa or India. Both the availability of educational offerings and the educational funding models in these countries are generally very different from those found in most of the United States. In these settings, providing access to a wide selection of good content is key. We know now that, at the minimum, online offerings stimulate learning among a large, underserved population—which is a terrific benefit. But the content and delivery systems appropriate for much of this population may differ from what is appropriate in other contexts. This is significant because many U.S. colleges and universities want to reach an international population (either directly or through outposts abroad), and online learning can be an important way of doing so.

As noted, individual learners differ markedly in their objectives:

- Some want to learn simply for learning's sake.
- Others are trying to earn a certification that might help them in their careers. In the United States, and also in other countries, "non-traditional" students are especially likely to be limited in their educational options because of their location or work/family obligations. For many of these individuals, the choice is not attending a residential college or taking an online course; their choice is taking an online course or doing nothing.
- Still other individuals who are currently attending a traditional college or university see MOOCs as a way of assisting them in the pursuit of their degrees, perhaps by allowing them to complete their programs more quickly and at a reduced cost. Certifying the quality of course offerings and of individual students' accomplishments is especially important to many of these students, as well as to some students who are not affiliated with individual colleges or universities.

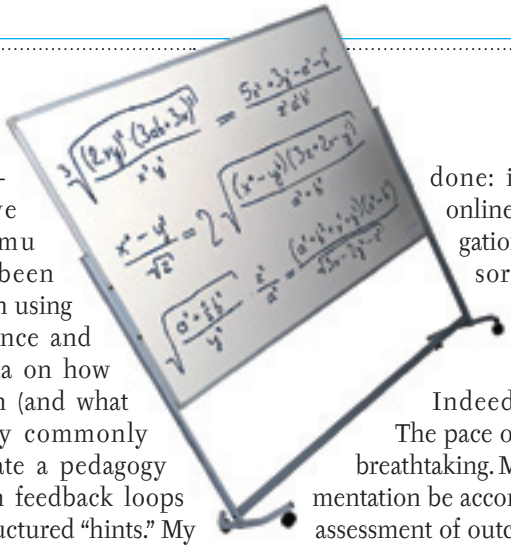
As for differences within institutions, at one corner of the educational landscape is a set of "elite" institutions: selective, relatively wealthy, mostly but not all located in the United States, with mostly resident students. These institutions may not have a pressing need for online learning, but they can benefit from exposing their students to online pedagogies—and there is certainly everything to be said for improving the teaching process in all settings. Many faculty members at these institutions are likely to be the producers of much online content (though certainly not all of it)—and of content that will often be used more extensively elsewhere than "at home."

Then there is a residual, "other" set of educational institutions, both public and private, that are less privileged and more hard-pressed financially than those in the "elite" set. A highly varied population of students attends this highly varied set of institutions. I believe that the biggest generic challenge for MOOCs is to demonstrate that they can provide real value to these institutions—which, after all, educate the lion's share of undergraduate students in the United States. There are important subsets of colleges and universities within this huge, rather amorphous category, and special attention should be paid to (a) state university systems offering BA degrees; (b) regional private colleges and universities; and (c) community colleges. All of these subsets serve large numbers of non-traditional students. It is far from obvious that MOOCs can adapt easily (or effectively) to the needs of these institutions qua institutions. Can MOOCs serve what are, in effect, two quite different masters—institutions as well as individual learners? Right now, no one knows the answer to this key question.

The question is enormously important precisely because this potpourri of institutions matters greatly. Institutions in this second, larger set are—and will remain, for the foreseeable future—both the main assessors of student achievement and the organizing vehicles through which educational resources, including student aid, are channeled. MOOCs and other online learning providers must work closely with these institutions, attempting to meet their all-too-real needs, and must not simply ignore or bypass them. I am a great admirer of the elite research universities, having lived most of my professional life within one of them, but I have to say that what happens within the far broader amalgam of other sectors is *at least as important*—and quite possibly *more important*—from the perspective of the future of online learning.

2. Different pedagogies are right for different disciplines.

Sophisticated "adaptive learning" methods of machine-guided instruction are a highly promising way to teach basic concepts in subjects such as beginning statistics, in which there are agreed-upon answers to questions such as "What is a *t*-test?" or "What is a confidence interval?" Candace Thille and her colleagues at the



Open Learning Initiative (http://oli.cmu.edu/) have been the pioneers in using cognitive science and masses of data on how students learn (and what mistakes they commonly make) to create a pedagogy that is rich in feedback loops and highly structured "hints." My ITHAKA colleagues and I have conducted research demonstrating the potential that this kind of teaching can hold for mainstream public university campuses.[3]

This is, however, a complicated and expensive pedagogy to develop, and I suspect it can be justified in only a limited number of situations. But it should scale well, and when offered in a hybrid mode (with a limited amount of face-to-face support for students who need help staying on task), it should be valuable for attacking one of the most vexing problems in higher education today—namely, how to get much larger numbers of students successfully through gateway courses in fields such as math and statistics, in a reasonable amount of time and at a reasonable cost. My guess—my hope—is that this kind of adaptive learning will evolve over time.

In addition, online technologies of various kinds can impact courses other than those teaching material that "has a single right answer." But we should not spend scarce resources attempting to mimic the approach that works in statistics for instruction in discursive fields less well suited to it. I am now convinced that approaches other than the adaptive learning model—especially peer-to-peer interactions made possible by ubiquitous access to networks of online learners—can work well in discursive fields such as literature and international affairs. Certainly the success of courses of this kind is encouraging. These approaches are also less expensive to develop than interactive instruction. Here too, however, there is much work to be done: in improving both online forums (the aggregation of threads and the sorting of comments) and the presentation of material. This will happen. Indeed, it is happening. The pace of experimentation is breathtaking. My plea is that experimentation be accompanied by rigorous assessment of outcomes—preferably by disinterested third parties.

3. A limited degree of "local" customization of online courses is important and should be facilitated.

The ITHAKA study of barriers to the adoption of online courses emphasizes the need to allow some degree of customization if faculty are to be persuaded to use online pedagogies.[4] Providers of the platforms and of the core content in basic courses need to assign a high priority to facilitating at least a modicum of customization. "Local" faculty should by all means be able to enrich basic course content and make it more applicable to local circumstances—but they should not feel a need to start from scratch. A careful balance needs to be struck. Not all wheels need to be reinvented, and I continue to believe that the centralized development of basic course "scaffolding" makes all kinds of sense. Coursera (https://www.coursera.org/) is doing yeoman work of this kind, and its basic platform development nicely complements the discipline-specific add-ons that individual colleges and universities are well positioned to provide. EdX (https://www.edx.org/) is also seeking to create a platform that will meet this need.

4. It is critically important that we assemble more real evidence, from more rigorous research, concerning the learning outcomes associated with online offerings.

A March 2013 survey of college and university presidents by *Inside Higher Ed* found: "Presidents remain unpersuaded by, if not skeptical of, MOOC mania. Only 14 percent of presidents strongly agree, and another 28 percent agree, that massive open online courses have 'great potential to make a positive impact' on higher education; 31 percent disagree or strongly disagree, and the rest are neutral."[5] The presidents were much more optimistic about the potential of a number of other innovations, so they were not just being skeptical about everything.

It is appalling how little is actually known about the learning outcomes produced by various forms of online learning. My colleague Kelly Lack has produced a comprehensive review of the literature on this subject; her work reveals the lack of solid research (especially on undergraduate student populations at mainstream public universities).[6] Failure to control for selection effects is a major shortcoming of most studies; the use of small sample sizes is another. There is also a distressing dearth of reliable third-party assessments. Assertion, anecdotes, and self-study take us only so far. We especially need to look rigorously at differences in outcomes for student subsets defined by socioeconomic status and academic background, as demonstrated by the findings of a February 2013 study noting that specific subgroups of students taking online courses—including those who are younger and/or have lower GPAs—perform worse than their peers on indicators of course grades and persistence.[7]

Having labored in this vineyard myself, I know how hard it is to do this research. We must keep looking for cost-effective ways of conducting rigorous studies that are manageable. We need to take a reasonably long time-horizon and be at least somewhat patient. The desire for instant results, for instant gratification (which is common among college and university presidents as well as among producers of content), has to be tempered by an understanding of how important it is to get things right and to amass evidence that will impress skeptics.[8]

5. We must focus self-consciously, and relentlessly, on controlling educational costs.

I continue to be more than bemused—actually, I am dismayed—by the lack of attention being paid to the implications that online learning can have on educational costs (for both institutions and students). To be sure, talking about the need to control costs can be unpopular and may seem to be less forward-looking than talking about the desirability of reaching more students and teaching in new and exciting ways. But we dare not just keep gilding the educational lily—such an approach risks further erosion of public support for the entire educational enterprise. It is entirely possible that more demonstration, by educational institutions themselves, of commitment to the intelligent pursuit of cost-effective ways of educating students would increase the public's confidence in the ability of these institutions to change and would also increase political support for at least somewhat more generous state funding.

Faculty members understandably fear job losses, as Professor Albert J. Sumell, at Youngstown State University, cogently and sympathetically explains in an article aptly titled "I Don't Want to Be Mooc'd."[9] Although there are ways of minimizing such risks of job loss (e.g., by redeploying faculty to higher-value tasks and by teaching more students), we have to be prepared to contemplate shifts in faculty ranks—both in overall numbers and in composition. We also have to recognize the implications of such possible changes for graduate education and for what is called "departmental research." John Hennessy, at Stanford University, is one of the few leaders in higher education willing to be brutally candid in talking about such subjects.[10]

The plain fact is that a combination of fiscal and political realities will continue to put inexorable pressure on the economic structure of higher education in the United States, especially in the public sector. Although an intelligent reexamination of tuition policies and financial aid policies can be of some help, I do not think there is any way to avoid thoroughgoing efforts to raise productivity—both by reducing the "inputs" denominator of the productivity ratio and by raising the "outputs" numerator.

Just as we need more and better studies of learning outcomes, we also need sophisticated studies of possible ways to control costs. Simulations of future steady-state options are definitely in order, because we know that contemporaneous comparisons of the costs of online learning models and various face-to-face models are flawed by the fact that the costs of doing almost anything for the first time are greater than the costs of doing the same thing for the *n*th time. It can be possible, over time, to loosen constraints and improve how we utilize new technologies.

The greatest opportunity to raise productivity lies in an imaginative rethinking of how to schedule courses, how to make more efficient use of fixed plant, and how to facilitate the flow of students through what should be viewed as an "educational system," not a static set of programs and rigid scheduling conventions. The real trick is to use technology to both raise completion rates and reduce time-to-degree. And the place to begin is by embracing the desirability of such efforts.

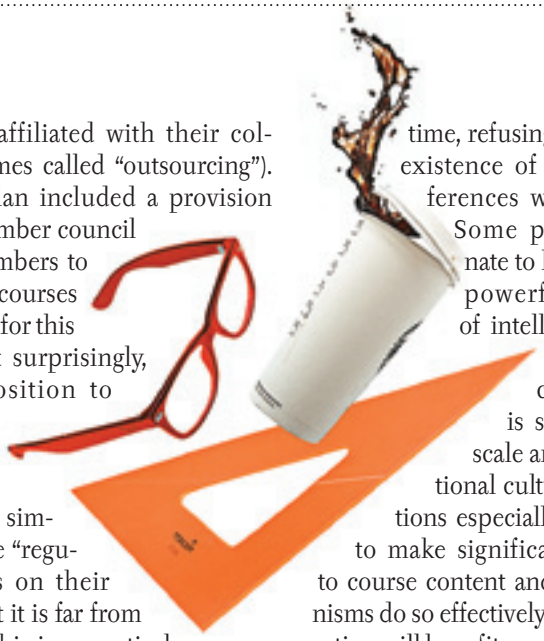
6. System-wide thinking is required; many of the most challenging questions for our educational system cannot be addressed on a single-campus basis.

This proposition follows directly from what I just said about scheduling and flow through the system. In New York, the City University of New York (CUNY) has been courageous, as well as thoughtful, in directly taking on these challenges through its Pathways initiative (http://www.cuny.edu/academics/initiatives/pathways.html). In the fall of 2013, all students in the system are required to complete 30 general education "Common Core" credits; each CUNY college can also require bachelor's degree students to take another 6 to 12 general education "College Option" credits. Once fulfilled at one CUNY college, these general education credits will carry over if a student transfers to another CUNY college.[11]

External certification of knowledge acquisition can be an important part of the process of thinking and acting system-wide. I applaud the decision by the College Credit Recommendation Service (CREDIT) of the American Council of Education (ACE) to review MOOCs for recommendation, and I hope that we will not be too timid in pressing ahead in such directions.[12] But as Richard Ekman, the president of the Council of Independent Colleges, keeps reminding us, the overall structure of an educational program matters greatly: education should consist of more than simply passing a miscellaneous set of individual courses. Ekman has noted: "I worry a lot about the coherence of degrees. There's got to be an informing philosophy of education."[13]

I continue to be dismayed by the lack of attention being paid to the implications that online learning can have on educational costs (for both institutions and students).

A major problem in many settings is the difficulty that students experience getting into—and getting through—gateway ("bottleneck") courses. In California, budget constraints forced community colleges to turn away about 500,000 students. In an effort to address this problem, Democratic State Senate President Pro Tem Darrell Steinberg devised a plan to require public colleges to award credit for work done by students in online



programs unaffiliated with their colleges (sometimes called "outsourcing"). Steinberg's plan included a provision for a nine-member council of faculty members to decide which courses would qualify for this program. Not surprisingly, faculty opposition to the plan surfaced quickly. Faculty prefer that the state simply fund more "regular" offerings on their campuses, but it is far from obvious that this is a practical alternative given the fiscal realities in California.[14]

This may be the right place to address another pervasive problem that no one wants to talk about: the preoccupation of many in academia with what may soon be outmoded notions about status. The more thoughtfully integrated system of higher education that I envision contemplates different roles for different players (both institutions and individuals) and values complementarities. It may well be that some individuals and some institutions are better positioned to be leading "producers" of content than are others, and it may well be that some individuals and some institutions are better positioned to be extremely skillful consumers of content that originated mostly, if not entirely, elsewhere. My argument is simply an argument for taking advantage of division of labor and economies of scale. I certainly do not mean to suggest that there are "superior beings" or "superior institutions" preordained to do the really creative work. Different kinds of talent exist almost everywhere, and we should be careful not to exclude people (or institutions) from some kinds of tasks for arbitrary reasons linked to wrong-headed notions of status. In fact, I suspect that market mechanisms will help achieve this sorting of people, institutions, and functions—a result that seems to me to be desirable and efficient from a system-wide perspective. At the same time, refusing to recognize the existence of institutional differences would be foolish. Some places are fortunate to have an unusually powerful combination of intellectual and financial resources—a combination that is sometimes tied to scale and even to institutional culture. If the institutions especially well positioned to make significant contributions to course content and delivery mechanisms do so effectively, all of higher education will benefit.

Human nature is what it is, but I think we should at least try to resist "above and below the salt" thinking. At the end of some future day, the real kudos may go to the highly creative institutional assemblers of organizational ideas, intellectual content, and a variety of pedagogies. There should be a real pay-off to institutions that are especially skillful in harvesting content provided by others and then adding educationally-rich value of their own, including mentoring and directed study.

7. New thinking is needed on faculty roles and on optimal organizational and decision-making mechanisms.

Over dinner at an MIT/Harvard edX gathering, one of MIT's leaders and I had a lively discussion regarding the biggest challenges for the further development of MOOCs. He was naturally focused on technical issues, which are of course real and challenging. Fortunately, lots of big brains are focused on them. But I have come to believe, more and more strongly, that the effective adoption of online pedagogies is going to require new thinking about decision-making in academia and about the role of faculty. In my view, the organizational and decision-making challenges are at least as daunting as—maybe more daunting than—the purely technical challenges.

I question whether the "shared governance" models that have been developed over the last century are well-suited to the digital world. Shared governance often means dividing up tasks in seemingly clear-cut ways: leaving "corporate" decisions of one kind or another entirely in the hands of trustees and placing "academic" decisions entirely in the hands of faculty. But if wise decisions are to be made on key topics such as teaching methods, the decisions must be made by a mix of individuals from different parts of the institution: including faculty leaders but also others who are well-positioned to consider the full ramifications of the choices at hand. Relying on the compartmentalized thinking that too often accompanies the decentralized modes of organization to which we have become accustomed leads to real dangers.

Given the institution-wide stakes associated with judgments as to when and how digital technologies should be used to teach some kinds of content, there is a strong case to be made for genuinely collaborative decision-making that includes faculty, of course, but that does not give to particular professors, or even to particular departments, full authority for determining teaching methods. There are too many "spillover" effects. In the digital age, faculty are dependent on tools that are available via an infrastructure that serves users across classes, courses, departments, and at times even institutions. The days are over when faculty can expect to have complete control over the tools they use. Faculty operating in online environments will find it more and more difficult to speak of "my course."

Specific organizational solutions will vary from institution to institution, but the general principle is clear: some centralized calibration of both benefits and costs is essential. In a less complex age, leaving almost all decisions concerning not just what to teach, but how to teach, in the hands of individual faculty members may have been sensible. But it is by no means clear that this model is the right one going forward. The mainstream academic community needs to take up this issue and address it before

"outsiders" dictate solutions. To repeat: faculty involvement is essential. There is a self-evident need for consultation with those who are experts in their disciplines and experienced in teaching—but this does not mean that faculty should be given veto power over change.

Questions concerning the exercise of proprietary rights and of "ownership" more generally have to be thought through very carefully. Google has taught all of us the economic value of exploiting huge amounts of proprietary data to create, in Google's context, opportunities for highly targeted advertising. Online learning—MOOCs specifically—is generating and will generate masses of valuable information on how students learn. For those who harvest such data, it must be tempting to maintain their proprietary status by using the data to improve their own teaching resources. But there is also a "public good" aspect to such data, and a case can certainly be made for creating some kind of public depository so that all scholars and teachers can use the data to improve learning outcomes.

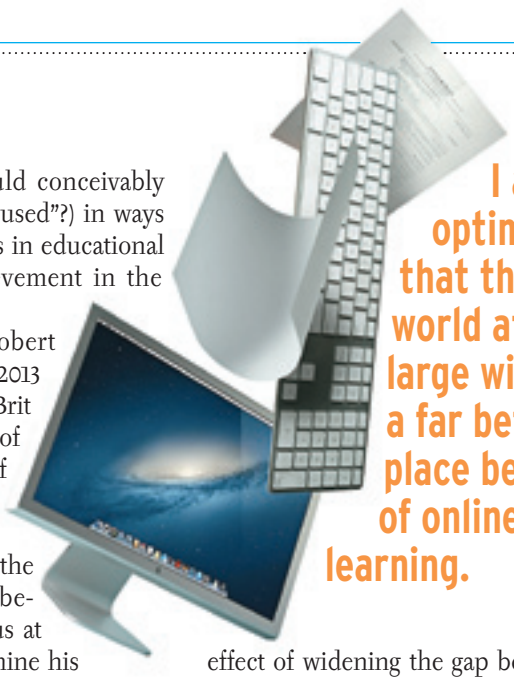
Another set of issues that deserves much more thought is how intellectual property rights in content should be regarded. This issue ties in directly to the question of whether and how MOOCs will be repeated. What happens if the creator of a particular MOOC moves from one institution to another? If the MOOC creator retires or dies? As one experienced student of online learning (Ira Fuchs) commented to me: "Coursera has hundreds of wonderful courses, but if I can't tell people about one with the expectation that they can take it in the future, then MOOCs will never have much impact."

I am reminded of a similar issue that JSTOR had to confront early on. JSTOR (http://www.jstor.org/) was offering to make, and keep available, electronic back issues of journals; if libraries were to redesign themselves (as many have), they had to be supremely confident that the electronic back issues would always be there. JSTOR developed specific contractual language to address this issue and set aside resources to guarantee that it could do what it said it would do. I suspect that MOOCs will soon need to confront a variant of this question and wrestle with how they are going to generate a predictable stream of sustainable resources so that they can constantly upgrade, as well as maintain, their offerings.

8. Stratification worries deserve much more attention than they receive.

I find it more than mildly ironic that a wonderful technological advance designed to improve access to high-quality

content worldwide could conceivably end up being used ("abused"?) in ways that actually widen gaps in educational opportunity and achievement in the United States.



I am optimistic that the world at large will be a far better place because of online learning.

In delivering the Robert H. Atwell Lecture at the 2013 ACE annual meeting, Brit Kirwan, the chancellor of the University System of Maryland, bemoaned the difficulty we are having in "making real" the American Dream—the belief that a person's status at birth should not determine his or her status throughout life. The facts are sobering. According to Chancellor Kirwan: "A child born into a family in the highest quartile of income has a roughly 85 percent chance of earning a college degree. A child born into a family in the lowest quartile of income has a less than 8 percent chance of earning a degree." That is a tenfold difference! Studies at Stanford University and at the University of Michigan find that education gaps between the rich and the poor in the United States are growing, not shrinking,[15] and Kirwan reminds us of OECD data showing that "children of less-educated parents in the U.S. have a tougher time climbing the educational ladder than in almost any other developed country."[16] The Nobel prize–winner Joseph Stiglitz has called equal opportunity "our national myth."[17]

Unfortunately, the facts are all too clear. There is a growing stratification within higher education in the United States, with widening gaps not just between students from different socioeconomic backgrounds but also between institutions. For reasons too complicated to go into here, the resources available to the wealthiest institutions have grown more rapidly than the resources available to institutions down the line.

How does this connect to online learning? The promises that online learning offers, including the promotion of educational opportunity worldwide, could simultaneously have the perverse effect of widening the gap between the "haves" and "have-nots" in U.S. higher education. In my view, the intelligent application of new technologies will almost certainly improve education at the most privileged places. Is it likely that esteemed liberal arts colleges or the most selective residential universities will allow online approaches to depersonalize instruction and deprive future generations of students of the wonderful residential experience characteristic of these places? No way!

There will always be a coterie of families willing and able to pay the price for this special kind of education, almost regardless of cost. As a believer in "revealed preference" (the notion that people reveal their beliefs through their actions), I am mightily impressed by the extraordinary number of applicants to the most selective and expensive institutions. But as everyone agrees, the children of affluent families are much more likely than other children to have not only the wherewithal to attend but also the requisite qualifications for admission—in part because affluent families generally invest both far more money and far more time in the educational preparation of their children. Because of generous financial aid, the mix of students at the most selective colleges and universities will include some number of highly talented individuals from poorer families. Yet how many such students are there likely to be in this increasingly rarified subset of U.S. higher education? The overall number is going to be very, very small. So, as Stiglitz has put it, the problem is not that "social mobility is impossible, but that the upwardly mobile American is becoming a statistical oddity."[18]

Recent pronouncements by the governors of some states lead me to worry that the assumed promise of online education—and the overhyped promise of extremely rudimentary online education that lacks any face-to-face component—could do real harm.[19] States will be tempted to use relatively inexpensive online programs to serve the less-affluent, less-prepared segment of potential college-goers. It is critically important to remember that there is enormous variation in the quality of online learning. Some consists solely of PowerPoint slides and textbook assignments posted online. Imposing such "courses" on poorly prepared students is hardly a promising path forward. If I am right in thinking that residential campuses and the other advantages offered by the more selective sector of higher education will continue to confer major benefits on those privileged to attend them, it is not hard to envision the "haves" continuing to gain considerable ground on the "have-nots." In short, excessive belief by some in the value of minimalist online approaches to learning, and the temptation to use the allure of online learning to justify a further defunding of public higher education, could lead to an ever more bifurcated system of higher education in the United States.

■■■

Let me not end on a down note. I am optimistic that the world at large will be a far better place because of online learning—and because of MOOCs. But for that to happen, we need to be able to take full advantage of the wonderful, if problematic, opportunities provided by ingenuity and technological prowess. And we must include in our calculations the needs of the less privileged. At the end of the day, we have to ask ourselves

(http://www.insidehighered.com)

MOOC research conference confirms commonly held beliefs about the medium

Submitted by Carl Straumsheim on December 6, 2013 - 3:00am

ARLINGTON, Texas -- The story so far: Massive open online courses have yet to live up to their potential. But unlocking that potential could already be a pilot at a community college, state university or private institution.

More than 200 scholars from institutions all over the world have gathered here at a conference hosted by the University of Texas at Arlington to hear preliminary results from the MOOC Research Initiative [1], a grant program founded by the Bill and Melinda Gates Foundation and administered by Athabasca University in Canada. Grantees, who received between $10,000 and $25,000 to examine how MOOCs can be used to change higher education, will compile their findings in a forthcoming edition of the *International Review of Research in Open and Distance Learning*.

The research presented on Thursday was perhaps best summarized by research conducted by the University of Pennsylvania Graduate School of Education, which analyzed the study habits of 1 million students across 16 Coursera courses between June of 2012 and 2013.

“Emerging data ... show that massive open online courses (MOOCs) have relatively few active users, that user ‘engagement’ falls off dramatically especially after the first 1-2 weeks of a course, and that few users persist to the course end,” a summary of the study reads.

For anyone who has paid even the slightest bit of attention to the MOOC space over the past year, those conclusions hardly qualify as revelations. Yet some presenters said they felt the first day of the conference served as an opportunity to confirm some of those commonly held beliefs about MOOCs.

Many speakers repeatedly pointed out that the cost of MOOC production -- which can reach hundreds of thousands of dollars -- has created classes of MOOC producing and MOOC consuming institutions. This creates issues for both groups; the former doesn't want to appear elitist, while the latter rejects content not created by their own faculty members.

“Maybe this seems obvious,” said Christopher Brooks, a research fellow at the University of Michigan School of Information. “Lots of things seem obvious in hindsight.”

An earlier session, on “MOOCs and Traditional Universities,” delivered a sobering look at what MOOCs are actually being used for -- and those uses have far more modest goals than revolutionizing all of higher education. Instead, some initiatives show MOOCs are "neither the scourge nor the savior" that the fiercest opponents and proponents claim they are, said Deborah Keyek-Franssen, associate vice president for digital education and engagement at the University of Colorado System.

“I don’t see revenue, and we’re not going to see revenue in Colorado for ... ever -- or for a long time,” Keyek-Franssen said. “We are not ready for Signature Track [2].... We’re not ready for credit.... We will probably not license anyone else’s content.”

The university system has experimented with MOOCs through Canvas and Coursera, but the results have yet to provide a definite answer.

“What I’ve been trying to is reframe the question,” Keyek-Franssen said. “The question is: Is it worth it? Is it worth it to the faculty? Is it worth it the financial investment? Is it worth it to restructure our support units to be able to provide significant among of expertise that we currently don’t have in-house?”

Keyek-Franssen wasn’t asking the questions rhetorically. “For us, we’ll continue to do them because there are so many enthusiastic faculty members,” she said. “But we don’t have that [return on investment] piece, and without that, you can’t convince leadership or financial planners.”

Other panelists remarked that some institutions are much more limited in the ways they can experiment with MOOCs. In North Carolina, where community colleges are beginning to be evaluated and funded based on degree completion [3], no one is rushing to embrace a teaching model that retains less than 10 percent of students, said Laura Kalbaugh, dean of academic success and transition resources at Wake Technical Community College.

“We’re not able to open ourselves up for that as much,” Kalbaugh said.

With a $50,000 grant from the Gates Foundation, Wake Tech and Udacity created an introductory algebra review MOOC that prepares students for college placement tests. Although data show only about 3.5 percent of students access the MOOC for test prep purposes, Kalbaugh said more than two-thirds use the material to improve their general math skills.

“We looked at creating [MOOCs] as part of that open door,” Kalbaugh said. “One of the missions of community college is to allow students to come and do exploration, and that’s where we see MOOCs really being a benefit for us.”

Throughout Thursday’s sessions, presenters reminded listeners that their research -- and the search for more uses for MOOCs -- requires more time.

“Universities -- especially state universities -- are facing tremendous budget crunches. So are Harvard, MIT, everybody,” said Akiba Covitz, senior vice president of strategic relationships for Academic Partnerships. “How do we do this amazing thing and get our ideas out the world and not go bankrupt? This is the challenge.”

Online Learning [4]

Source URL: http://www.insidehighered.com/news/2013/12/06/mooc-research-conference-confirms-commonly-held-beliefs-about-medium?width=775&height=500&iframe=true

Links:
[1] http://www.moocresearch.com/
[2] http://www.insidehighered.com/news/2013/01/09/courseras-fee-based-course-option

[3] http://www.nccommunitycolleges.edu/Publications/docs/Publications/2013%20Performance%20Measures%20Report.pdf
[4] http://www.insidehighered.com/news/news-sections/online-learning

A Guide to Quality in Online Learning

ACADEMIC PARTNERSHIPS™

A Guide to Quality in Online Learning

Editors' Foreword

With the eruption of MOOCs (Massive Open Online Courses) in 2012, online learning became a hot topic for the world's news media. In reality, the MOOCs story merely added momentum to the steady growth in online learning that has occurred since the turn of the millennium.

Today there are few students with reliable Internet access who do not explore the possibility of undertaking some of their courses online; few faculty members who do not wonder about the implications of technology-mediated learning for their teaching; and few higher education institutions that are not grappling with the development of institutional policies for online learning. This is a global phenomenon.

As they engage with online education, institutions discover that success means far more than pouring traditional instructional approaches into new technological bottles. Fortunately, individuals, institutions and professional bodies in many countries are addressing the challenge of how to make online learning a quality experience for students. This Guide distils this widespread experience and extensive research into a compact and readable account, while also providing an extensive bibliography if you seek to explore particular issues further.

New forms of collaboration, both among institutions and with the private sector, are accompanying the growth of online learning. This Guide has been commissioned by Academic Partnerships, which is helping numbers of institutions globally to ensure the quality and financial sustainability of their online offerings.

We were delighted to secure the services of Neil Butcher and Merridy Wilson-Strydom to prepare this Guide. Being based in South Africa, they are familiar both with countries where technology is abundant and also with places where connectivity cannot be taken for granted. Now that online learning is an important development priority for institutions everywhere, this dual perspective is vital.

It has been a pleasure for us to work with such expert and professional colleagues. We hope the result will be useful not only to those who are new to online learning, but also to institutions that have already encountered some of the challenges that it poses.

Stamenka Uvalić-Trumbić
Sir John Daniel
Senior Advisors – Academic Partnerships

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Introduction

What is quality in online learning? Existing quality assurance frameworks, guidelines, and benchmarks show that quality in online learning has many dimensions. But we can distil these into a number of common issues to which practitioners and students should attend.

This guide summarizes the key quality issues in online education in a concise and accessible manner, with an annotated reading list to help you to pursue particular topics further. Academics and professionals in higher education are our primary audience. We consider academics and students as the key stakeholders for online education, and have written the guide with this principle in mind.[1] It is structured in the form of 16 'Frequently Asked Questions', followed by an additional reading list focused on quality benchmarks and international best practices.

While a short guide cannot unpack all the rich debates about online learning quality, we have tried to flag key issues so that you can explore topics of special interest in more detail. To enrich the background, we cite examples from higher education around the world.

1 What is online learning?

People use the term online learning in many different ways. Most broadly, it refers to a method of delivering educational information using the internet. This may range from downloadable content (such as iTunes university content, digital textbooks, and video or audio materials) through informal teaching (such as Massive Open Online Courses – MOOCs[2]) to fully structured online courses that include assessments and the awarding of a qualification.[3] Online learning in this last category is our main focus in this guide.

Online learning frees education from the constraints of time and space that go with face-to-face teaching. It can be a more accessible form of learning for people seeking a range of educational opportunities, and is the basis of many distance education programmes.[4] But online learning and traditional classroom learning are not opposites, although they are sometimes presented as such. Online learning should rather be seen as a different teaching and learning method that can be used by itself or to complement classroom teaching. Similarly, online learning does not mean replicating face-to-face teaching in an online environment (see FAQ 3 below). The power of online teaching and learning is that it gives different – and sometimes better – learning experiences.[5]

Formal online learning uses the internet. It therefore requires that students have access to the internet and an adequately equipped desktop PC, laptop, tablet, or other suitable device. In many instances (although certainly not all), there is some form of broadband connectivity.[6]

2 How is online learning offered?

In this guide we mostly use the term institution to designate an organisation offering online learning. However, because of the methods they use and the technology infrastructure that they require, online teaching and learning make new demands on higher education institutions. For this reason, institutions frequently enter into partnerships with commercial enterprises to support their online learning programmes. For example, most universities that offer MOOCs, which require a computing infrastructure capable of handling large numbers of people online simultaneously, partner with companies such as Coursera,[7] Udacity,[8] or Futurelearn.[9] For universities that decide to offer a selection of their regular programmes online, companies such as Academic Partnerships[10] offer a range of services from course conversion through student recruitment and mentoring to technical support.

U21Global (**www.u21global.edu.sg**) is another interesting example of partnership in the provision of online learning. With a focus on global management education, U21Global was founded in 2001 with 16 founding member universities, representing ten countries.[11] At present, U21Global has more than 9,000 students and alumni from 72 countries. Senior academics from the four leading partner universities constitute the academic senate of U21Global, the body responsible for assuring quality, in line with the quality standards of each partner university.

We do not explore the details of such partnerships in this guide. The key principle is that higher education institutions must always take full responsibility for the quality of the qualifications that they award, so references to institutions subsume any partnerships that they use to facilitate their online teaching and learning and any unbundling of the processes involved.

3 What constitutes quality in online learning?

The concept of quality in online learning is as complex as the reality of online learning itself. There is a vast literature on quality in higher education, with a profusion of terms and concepts. It often identifies a tension between two roles of quality assurance: as a means of accountability and as a route to quality improvement. There is another key debate about the role of the student in defining quality. Some argue that defining quality in higher education should begin with the assumption that online learning is a process of co-production between the online learning environment and the student, with the student perspective taken as the starting point of quality development across the various areas of online learning provision.[12] These tensions 'become more demanding as new modes of provision increasingly become part of traditional campus-based higher education provision and as institutions try to use the same mechanisms to deal with these completely new forms of courses.'[13]

What then constitutes quality in online learning? Several different benchmarks or quality standards have been defined and tested in numerous contexts around the world. The reading list in the appendix to this guide provides short summaries and links to many examples. Although the terminology and emphasis differ, common aspects of a quality experience in the online learning environment can be identified. These are:

- Institutional support (vision, planning, & infrastructure)
- Course development
- Teaching and learning (instruction)
- Course structure
- Student support
- Faculty support
- Technology
- Evaluation
- Student assessment
- Examination security

To give a concrete example, the Quality Matters Program (**www.qmprogram.org**), based in the USA, has established national benchmarks for online courses and has become a 'nationally recognised, faculty-centred, peer process designed to certify the quality of online courses and online components'.[14] It has developed a series of rubrics to meet the specific needs of different education sectors. Each rubric is based on thorough scholarly research, while accompanying helpful literature reviews are available to download from the QM website (**http://www.qmprogram.org/rubric**). Central to the QM understanding of online learning quality is the concept of alignment, which is evident when learning objectives, measurement and assessment, educational materials, interaction and engagement of learners, and course technology work together to ensure achievement of desired learning outcomes. Eight standards are defined. The rubrics present a set of evaluative dimensions for each standard. The eight areas (with component indicators) that can be seen to constitute quality in online learning within higher education in the QM Program are summarized below.

QUALITY MATTERS PROGRAM QM

For more information visit www.QMprogram.org or email info@qualitymatters.org

Quality Matters™ Rubric Standards 2011 - 2013 edition with Assigned Point Values

Standards			Points
Course Overview and Introduction	1.1	Instructions make clear how to get started and where to find various course components.	3
	1.2	Students are introduced to the purpose and structure of the course.	3
	1.3	Etiquette expectations (sometimes called "netiquette") for online discussions, email, and other forms of communication are stated clearly.	2
	1.4	Course and/or institutional policies with which the student is expected to comply are clearly stated, or a link to current policies is provided.	2
	1.5	Prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1
	1.6	Minimum technical skills expected of the student are clearly stated.	1
	1.7	The self-introduction by the instructor is appropriate and available online.	1
	1.8	Students are asked to introduce themselves to the class.	1
Learning Objectives (Competencies)	2.1	The course learning objectives describe outcomes that are measurable.	3
	2.2	The module/unit learning objectives describe outcomes that are measurable and consistent with the course-level objectives.	3
	2.3	All learning objectives are stated clearly and written from the students' perspective.	3
	2.4	Instructions to students on how to meet the learning objectives are adequate and stated clearly.	3
	2.5	The learning objectives are appropriately designed for the level of the course.	3
Assessment and Measurement	3.1	The types of assessments selected measure the stated learning objectives and are consistent with course activities and resources.	3
	3.2	The course grading policy is stated clearly.	3
	3.3	Specific and descriptive criteria are provided for the evaluation of students' work and participation and are tied to the course grading policy.	3
	3.4	The assessment instruments selected are sequenced, varied, and appropriate to the student work being assessed.	2
	3.5	Students have multiple opportunities to measure their own learning progress.	2
Instructional Materials	4.1	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives.	3
	4.2	The purpose of instructional materials and how the materials are to be used for learning activities are clearly explained.	3
	4.3	All resources and materials used in the course are appropriately cited.	2
	4.4	The instructional materials are current.	2
	4.5	The instructional materials present a variety of perspectives on the course content.	1
	4.6	The distinction between required and optional materials is clearly explained.	1
Learner Interaction and Engagement	5.1	The learning activities promote the achievement of the stated learning objectives.	3
	5.2	Learning activities provide opportunities for interaction that support active learning.	3
	5.3	The instructor's plan for classroom response time and feedback on assignments is clearly stated.	3
	5.4	The requirements for student interaction are clearly articulated.	2

Standards		Points
Course Technology	6.1 The tools and media support the course learning objectives.	3
	6.2 Course tools and media support student engagement and guide the student to become an active learner.	3
	6.3 Navigation throughout the online components of the course is logical, consistent, and efficient.	3
	6.4 Students can readily access the technologies required in the course.	2
	6.5 The course technologies are current.	1
Learner Support	7.1 The course instructions articulate or link to a clear description of the technical support offered and how to access it.	3
	7.2 Course instructions articulate or link to the institution's accessibility policies and services.	3
	7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help students succeed in the course and how students can access the services.	2
	7.4 Course instructions articulate or link to an explanation of how the institution's student support services can help students succeed and how students can access the services.	1
Accessibility	8.1 The course employs accessible technologies and provides guidance on how to obtain accommodation.	3
	8.2 The course contains equivalent alternatives to auditory and visual content.	2
	8.3 The course design facilitates readability and minimizes distractions.	2
	8.4 The course design accommodates the use of assistive technologies.	2

The stress placed on each of these aspects in a particular online learning environment or course will depend on its nature, its purpose, and the context in which it is implemented.

4 How can institutions assure quality?

Assuring quality online learning in higher education first and foremost requires institutional vision, commitment, leadership, and sound planning[15] and, as noted in FAQ 2, this must also embrace any partnerships involved. In essence, the online learning policy must be aligned with the overall vision and mission of the institution. Leaders and managers must explain why online learning has been selected as an appropriate learning strategy for the students being served.[16] Where online learning is new or is supplementing traditional contact provision, it may be important to encourage innovation and quality through earmarked resources. Institutional policies for online learning should cover the constituent elements of quality identified above (see FAQ 3), contextualized so that they align with institutional realities. In addition, institutions need to comply with regulations that govern online learning, ensuring that they are reflected in policy and practice.[17] The Australasian Council on Open Distance and e-Learning (ACODE) benchmarks for quality e-learning provide a wealth of useful information and guidelines for institutions seeking to improve the quality of their online learning offering as does the Quality Assurance Framework of the Asian Association of Open Universities (AAOU).[18] The following performance indicators, presented by ACODE for institutional policy and governance for online learning, are a useful summary of key issues.

ACODE Performance Indicators for Institutional Policy and Governance

1. Institution strategic and operational plans recognise and support the use of technologies to facilitate learning and teaching.
2. Specific plans relating to the use of learning and teaching technologies are aligned with the institution's strategic and operational plans.
3. Planning for learning and teaching technologies is aligned with the budget process.
4. Institution policies specify the use of technologies to support learning and teaching covering all aspects and stakeholder perspectives.
5. Policies are well disseminated and applied.
6. The institution has established governance mechanisms for learning and teaching with technologies that include representation from key stakeholders.
7. Clear management structures identify responsibilities and authority.
8. Decisions regarding new technology adoption are made within current policy frameworks.

Staff/faculty development in various areas related to online learning is also critical to ensuring quality. Ultimately, it is the faculty who must ensure that their course design and teaching and learning methods ensure quality online provision.[19] Different universities adopt different approaches for staff development in support of online learning. For example, at the University of South Africa (UNISA) – the largest open distance learning institution in Africa – a unit dedicated to curriculum and learning development provides continuing professional learning opportunities for lecturers in various areas, and is also responsible for quality assurance at the institution.[20]

The following key areas for professional development and support should be considered in preparing of faculty for online learning:

- Developing methodologies to promote interactive learning experiences
- Developing instructional materials
- Learning about new technological development, as well as the use of a mix of technologies
- Marketing of online courses
- Ensuring the availability of adequate assistance for facilitation of learning
- Strategies for evaluation of the process and outcomes of online learning
- Education about specific technical processes (such as integrating multimedia applications, for example)
- Opportunities for peer support, feedback, and mentoring
- Support in management of workload, particularly related to course design
- Ensuring that faculty have a working knowledge of the range of student support services offered
- Keeping faculty informed about important institutional policies and administrative procedures[21]

5 What institutional structures and staffing resources do you need for ensuring quality in online learning?

Successful quality assurance requires effective and efficient institutional structures.[22] However, you should not assume that creating quality assurance structures (such as we describe below) automatically improves quality. Institutions must distinguish between quality assurance procedures, which can easily become compliance focused, and real efforts to enhance quality.[23] For example, evaluating a course, though required, is not sufficient. Quality enhancement will only take place when the lessons from evaluation are reflected in the next offering of the course. Institutional quality assurance structures and processes are important, but beware of making them an exercise in compliance for accountability, rather than a process of learning and self-improvement that really improves quality.[24]

Notwithstanding this tension between compliance/accountability and self-improvement/innovation, you need some institutional quality assurance structures. Given the diversity of institutional involvement in online learning, we cannot prescribe an ideal quality assurance structure. There are, however, lessons that can be learned about institutional structures from experiences and quality audits that have been conducted around the world.[26] Often institutions have an office/unit/section/division/department (hereafter 'office') dedicated to quality assurance.[27] Its size and scope will differ depending on the institution. Such offices usually coordinate quality audits, programme accreditation, departmental reviews, and other peer review activities.[28] Sometimes the quality office is also responsible for course evaluations, benchmarking research, institutional monitoring, and calculating key performance indicators (KPIs) to inform quality work. The number of staff members dedicated to quality assurance will differ, but some people must focus on this task.

Committee structures at institutional, faculty and/or department level usually underpin the work of the quality

office. These ensure institutional participation, buy-in and, ultimately, quality improvement.[29] These committees should have clearly defined responsibilities and delegations, decision-making powers appropriate to the level at which they operate, and have clear procedures for documenting processes and outcomes.[30] Without decision-making powers, quality committees can easily become another layer of administration within a compliance culture. To be effective, staff members serving on quality committees should have access to training in the areas of quality enhancement and assurance. The work of the quality assurance office and the institutional quality committees should feed into institutional processes in teaching and learning, course and materials production, and staff development in order to build a quality culture across the institution.[31]

6 What resources should you allocate to developing quality online learning?

If institutions do not employ cost-effective approaches to online learning, they will struggle to achieve its full potential. Cost effectiveness means establishing and maintaining the key processes needed to sustain online learning.[32] Inadequate resourcing and financial management will compromise the quality of online learning.[33]

Online learning has five main cost drivers: planning, design and development, delivery, maintenance, and overheads.[34] Institutions that make online learning a mission priority need to factor in a significant overhead cost of technology infrastructure, possibly arranged in partnership (see FAQ 2). Sound systems for the storage, delivery, and access of online courses are a critical element of quality.[35] Remember, however, that this cost, though significant, will likely be substantially less than that of maintaining a campus.[36] Nevertheless, staff time and expertise is a large cost driver, but also a key resource for quality online learning. The transition from a completely face-to-face teaching environment to more online learning requires a shift in use of staff time. Less time will be spent on course presentation and much more on design and planning.[37] Investment in prior and ongoing staff development is critical.

You should base decisions about resource allocation for the development of quality online learning on sound business plans and cost estimates. The Ontario Online Learning Portal for Faculty and Instructors provides a useful list of the top ten cost drivers (resource needs) for online learning. These are:

- The number of hours required for course development and preparation
- The number of hours required to teach a course
- The number of students in a course
- The ratio of instructors to students ('class' size)
- The pay scale of instructors (in particular, ratio of tenured to adjunct faculty)
- Method of course design, development and delivery (e.g. 'Lone Rangers' vs. team work)
- The pedagogy used (e.g. recorded lecturers, constructivist or objectivist approach)
- The choice of technology for delivery (e.g. lecture capture, learning management system or LMS)
- The assessment of the course and its outcomes
- Overhead costs (institutional administrative costs, network costs, etc.)[38]

7 How can students judge the quality of online courses?

The student perspective is an important aspect of quality assurance for online learning.[39] Online learning should not be something that is simply 'delivered' to a passive student. Instead, quality online learning is constructed through 'a process of co-production between the learner and the learning environment'.[40] Two questions usually guide students' assessment of quality: (1) which are the most important features to consider when looking for quality online learning; and (2) which online learning providers offer the best performance at a reasonable price.[41] In making their quality judgements, students should consider the dimensions of quality in online learning in Table 1. Quality factors that students themselves identify as important include:

- Provision of tutorial support using a diverse range of media for communication
- The manner in which cooperation and communication take place in the course
- Technical standards (where technical standards are not met, students tend to have a very negative experience of the course)
- Cost-value assessment and expectations that students bring to a course (students need to perceive that the learning experience and benefits are adequate in terms of the costs of the online course)
- Transparency and availability of information about the course and the institution offering the course
- The structure of the course and flexibility provided
- The type of 'didactical setting', which includes factors such as learning outcomes, content (including background materials), teaching and learning methodologies, and online materials.[42]

8 How can instructional design, learning materials, and course presentation contribute to quality online learning?

High-quality online courses are intentionally designed for an online learning environment by skilled content and instructional design professionals. Good instructional design will reflect best practices and research on teaching and learning. It covers decisions about the overall learning approach, choice of instructional media, the clustering and sequencing of learning, and the range of exercises, activities, and assessments included in the course.[43] Put another way, 'instructional design is the process through which an educator determines the best teaching methods for specific learners in a specific context, attempting to obtain a specific goal.'[44] Good instructional design should be invisible to the student. This means that 'an online course based on sound design principles should be built with instructional components seamlessly woven together to engage the student in learning while transferring intended context via prescribed instructional strategies.'[45] The QM criteria shown in Table 1 provide some examples of good practice in instructional design. The following four key design principles, presented as a guide to faculty by the Southern Poly State University[46] summarize four main areas of instructional design:

- Consistent layout and design;
- Clear organisation and presentation of information;
- Consistent and easy-to-use navigation; and
- Aesthetically pleasing design and graphics.[47]

Online course materials should combine sound instructional design with high quality content. Since development of quality online learning materials requires a range of skills, materials development teams often comprise faculty or subject matter experts, instructional designers, curriculum specialists, technology specialists,

assessment specialists, and a language editor. To ensure effective course design and development, it is important to map out a course and materials development workflow and review process.[48] Most institutions that design and create online course materials have identified specific criteria and/or checklists that can be used to ensure quality at various stages of the materials development process.[49]

Quality online learning materials should be regularly updated to reflect new developments in the field in question. One approach is to integrate a range of interesting sources from around the world available as Open Educational Resources (OER). OER are openly licensed educational resources that can either be incorporated within learning online materials as they are developed or used 'as is' for an online course.[50] In the African context, OER Africa[51] provides access to a range of useful OER in the areas of agriculture, health, teacher education, and foundation programmes. The Indira Gandhi National Open University (IGNOU) in India provides a platform – called FlexiLearn – where a range of free learning resources are integrated with a learning management system to provide unique learning experiences 'for anyone who wants to learn'.[52] OER are of particular value where resources are limited and the development of totally new content is too costly. As always, it is up to the institution offering the online course, through its programme/course coordinators and individual academics, to assure the quality of OER it uses. The relevance and appropriateness of OER used, as well as how they are integrated into the course, are crucial factors.[53] It is also important to keep an eye on student workload and avoid confusing learners with a profusion of optional resources.

9 How can the structure of the virtual environment facilitate quality online learning?

Virtual learning environments (VLEs) consist of a wide range of tools, including: search engines, internet voice communication, instant messaging, chat groups, emails, RSS feeds, blogs, social networking platforms, online video conferencing platforms, learner management systems such as Moodle (**https://moodle.org/**), Sakai (**http://www.sakaiproject.org/**), Canvas (**www.instructure.com**) and BlackBoard (**www.blackboard.com**), and e-portfolio programmes such as Mahara (**http://mahara.org**), Learner Journey (**http://www.learnerjourney.com/**), foliofor.me (**http://foliofor.me**), and ePortaro (**www.eportaro.com**), as well as in-house e-portfolio systems designed by specific universities (for example, the National University of Singapore developed a purpose built system called SELF – Student Electronic Learning Folio).[54] In parallel, the gaming industry has been working on virtual environments for some time, and the educational potential of gaming is now increasingly clear.[55]

Virtual learning environments present many possibilities but also potential pitfalls, particularly when trying to transfer traditional teaching methods to virtual environments.[56] Although they have great potential, virtual learning environments are often not used as innovatively as they might be.[57] Designers of online learning must select the components of the virtual learning environment carefully, bearing in mind the needs and life situations of the students.[58] For example, older lifelong learners may need additional support in a virtual learning environment.[59] However, age is not a barrier to online learning, for research shows that all students can learn well through technology; there is really no 'digital generation'.[60]

In sum, a quality virtual learning environment is firmly based on the pedagogical needs of the course and its learners, is reliable and robust, is aligned with the technical infrastructure of the institution, and is regularly subjected to internal evaluations, updating and improvements as needed.[61]

10 What do web design and web usability factors contribute to quality?

The World Wide Web has features that are particularly useful for online learning. Examples include: the capacity to share rich media files such as images, complex diagrams, audio and video; the range of tools to support interaction and communication from email to bandwidth intensive forms, such as web-enabled video and teleconferencing; and the non-linearity of the platform-independent standards of hypertext markup language (HTML) and its successors, which provide a means for learners to create their own learning pathways though online learning materials.[62] Once again, however, the mere availability of these features does not mean that they are always deployed in an effective and user-friendly way. Some online courses are just 'HTML page-turners', where traditional linear methods of transmitting content are simply moved over to web technologies.[63] So, what web design and usability factors should be considered in assessing quality in online learning?

The concept of usability originated in the discipline of Human-Computer-Interaction, which focuses on understanding how to make computing systems easy to use. Web usability refers to attributes such as learnability, memorability, efficiency, handling of user errors, and user satisfaction.[64] Researchers at the UK Open University have developed the concept of 'pedagogical usability',[65] which is of special value for gauging the impact of web usability on the quality of online learning. Box 2 summarises key elements of pedagogical usability, which assumes that there are several layers of usability underlying quality online learning. These layers of usability are mutually dependent. For analytical purposes it is helpful to separate these layers of usability, but they should be applied in an integrated fashion.

Mutually dependent levels of 'Pedagogic Usability'
presented verbatim from Kukulaska-Hulme & Shield, 2004

- Context specific usability relates to the requirements of particular disciplines and courses. Each course has its own needs and intended outcomes which make it different from other courses.
- Academic usability deals with educational issues, such as the pedagogical strategy, and the place of websites in relation to other course materials. Expected study behaviour also comes into play. The specifics of e-learning are considered at this level.
- General usability issues are common to most websites and include aspects such as clear navigation and accessibility for users with special needs. They may reflect general HCI concerns or aspects that are specific to the web.
- Technical usability addresses issues such as broken links, server reliability, download times, appropriateness of plug-ins, and accurate HTML. This is also known as the 'functional' usability level.

11 How can you use media (video, graphics, audio, animation and simulation) to enhance quality in online learning?

Using different media in online learning, if done intentionally through the instructional design and not as an afterthought, can add value by increasing the variety of learning strategies employed, so catering more effectively to multiple learning styles.[66] Using multimedia materials can improve both the online learning experience and students' ability to retain information. Further, video and audio materials can help to 'bring a course alive' by invoking both visual and auditory senses in the learning process.[67] With the rapid growth in freely available online video and audio content, for example, YouTube (**www.youtube.com**), iTunes University (where most major universities provide various forms of learning content), OpenLearn (**www.open.edu/openlearn/**), TED Talks (**www.ted.com/talks**), Khan Academy (**http://www.khanacademy.org/**), and many others, educators can now incorporate the voices of leading experts in their online courses. Institutions are also making increasing use of podcasts to bring online learners 'into' the college classroom. However, students sometimes seek podcasts for their entertainment value rather than their learning value, so they should be short, engaging, and carefully integrated into the learning objectives and through the instructional design of the course.[68] Audio lectures provide a learning benefit when students listen to them more than once, taking notes as they would in a face-to-face lecture. When students engage with a podcast lecture like this they perform better than students who sit in class but do not have the podcast.[69]

The value of simulations and/or role-playing environments in enhancing learning is increasingly clear and is greatest when a simulation is part of the overall instructional design.[70] Simulations can serve various purposes. They have been effective for procedural learning (e.g. medical procedures), for providing complex virtual contexts for problem-based learning, and for facilitating discovery-based learning. Used effectively, simulations can 'site learners in a professional context, where there are aggregates of transactions, perhaps multiple solution paths, and where learners' work is, as it will be in the workplace, distributed between tools, colleagues, resources, anticipated and unanticipated problems and individual constructions of knowledge and experience.'[71] One study showed that when students used simulated equipment (direct current circuitry) for practical work in physics they outperformed, both conceptually and practically, students who completed the same task in a physical laboratory.[72] Simulation has important quality implications for distance education, where access to physical laboratories and other practical learning experiences is not always possible.

In sum, multimedia resources can enhance quality in online learning most effectively when used purposefully as part of the instructional design of the course. Using them as an afterthought or for their entertainment value is unlikely to improve the quality of learning.

12 What online assessment and assignment methodologies promote quality learning?

Assessment is a key element of curriculum design that is fundamental to the learning process. Assessment methods are of prime pedagogical importance because they largely determine how students approach their studies.[73] Assessment should be planned and aligned with the learning outcomes within the instructional design process (See FAQs 6 and 8) to enhance the quality of online learning. Assessment can be done by the instructor, by the student, by peers, or by an external body. Online learning environments offer increased flexibility for assessment, and can be used to encourage the development of creativity, critical thinking and in-depth subject matter knowledge – each of which is essential for quality learning. Many different assessment techniques can be used in an online learning environment. They can be categorized broadly in terms of timing (synchronous or asynchronous) and in terms of location (formal, semi-formal, informal

settings). The Swedish National Agency for Higher Education (2008) has summarized the different ways in which online assessment can be organized, with an analysis of their pros and cons.

Table 2 *Different forms of online learning assessment organization*[74]

Assessment Location	Benefits	Drawbacks
Formal*	Easy identification	Inflexible in terms of time and location, additional costs
Semi-formal** synchronous	Easy identification, moderate flexibility of location	Inflexible in terms of time, additional costs
Semi-formal asynchronous	Easy identification, moderate flexibility of time and location	Additional costs
Informal*** synchronous	Highly flexibility of location, low costs for students, no travel, accommodation, etc. needed	Inflexible in terms of time, moderate identification concerns
Informal asynchronous	High flexibility of time and location. Low costs for students, no travel, accommodation, etc. needed	High identification concerns. But, e.g. internet banking services have well-developed systems for securing identify in this mode

*On-Campus

**Localities not governed by the university but defined as learning centres, embassies etc.

***Can be anywhere, only restricted by technical requirements such as computer and/or internet access.

Many different types of assessment can be used online. A few are listed below, with links to additional reading.[75] They are:

- Written assignments
- Participation in online discussions
- Essays
- Online quizzes
- Multiple choice questions to test understanding (formative) or as a test (summative)
- Collaborative assignment work
- Debates
- Experiential activities such as role play and simulation
- Learning portfolios

13 How do you ensure examination security?

Examination or assessment security and authenticity is an important consideration in quality online learning. Those who are sceptical of the possibilities of online learning often raise it as an issue. We noted the value that online environments offer for flexibility in assessment (FAQ 9), but if not managed well, this flexibility can create problems of security and authentication. Remember, though, that issues of identification – in the context of assignments – are not new in higher education. Assignments are usually completed outside class, raising similar challenges of being sure that students did their own assignments. Invigilation (proctoring) and the verification of student identity is also common when students sit examinations, either at contact institutions or learning centres that work in partnership with distance providers.

Many technologies can ensure examination security in online settings. These include, for example, web cameras, computer identification, and finger scans (biometric authentication).[76] Depending on the context, written examinations can also be verified by live oral examinations or dialogues using video conferencing software. New examination security software also provides the means to 'lock down' the devices being used when taking examinations, thus preventing access to non-examination materials.[77]

Plagiarism in online assignments (as well as within contact teaching) is becoming an increasing academic concern. Plagiarism is the intentional copying of the work of others, combined with the lack (often unintentional) of adequate acknowledgement and referencing. Various software programmes can detect plagiarism (see, for example, **http://turnitin.com**). While detection of plagiarism is important, it is better to prevent the practice rather than merely having checks in place to detect it. Raising student awareness of the issue is key.[78] Online assessments can be designed in a manner that helps to reduce plagiarism. This can be done by varying the nature and frequency ofassignments, dividing assignments into their component parts, requiring a range of deliverable products,and insisting on evidence of research and proper citation of sources.[79]

14 What strategies can you deploy for interaction and student community building?

'Communication and interaction are essential elements within learning'.[80] Online learning takes place outside of a common physical space, so specific strategies are needed to encourage interaction and community building. Whether participation in learning communities should be required or optional remains an active debate but we shall not tackle it here.[81] Instead, we focus on strategies for supporting interaction and community building, whether participation is compulsory or not. Various factors can influence the type of interaction and learning community in a given online learning environment. They include the discipline, level of the course, the preference and style of the instructor, types of students, and the purpose that interaction or community engagement is intended to serve.[82] Examples of activities include asynchronous online discussions,[83] chat rooms, collaborative projects, and learning teams. Social networking systems such as Facebook (**www.facebook.com**) and Twitter (**https://twitter.com**) as well as blogs and wikis and Google Docs can be used effectively to support interaction and community building.[84] Strategies for supporting successful interaction and collaborative groups in online courses are summarized in Box 3 below.[85]

Strategies for group learning activities

1. **Create transparency of expectations and purpose:** Specific information about how and why the collaborative or interactive activity is included should be provided and ensuring students are familiar with the collaborative tool being used should be done at the outset.
2. **Provide clear instructions:** One cannot assume that students will know how (and why) to interact or collaborate to form a learning community. Clear instructions, outlines, and due dates need to be provided as the basis from which collaborative work can start. Sufficient time is needed to build relationships among students.
3. **Form small groups:** In an online learning context, research indicates that smaller groups – usually three to five students – are more effective than larger groups were some students can 'lurk in the background and not contribute.'
4. **Monitor and support:** The online instructor should be available to support collaborative work and to participate in the interaction from time to time, and as needed by a particular group or emerging learning community.
5. **Include etiquette guidelines:** It should not be assumed that students participating in an online course or learning environment will necessarily share the same understanding of etiquette and how to work together. For this reason it is important for the instructor to map out initial guidelines for interaction. The different between cooperative work (where individual students each submit their own contribution) and collaborative work (where students work together as a team to produce one product) should be explained.

15 How can teaching and facilitation contribute to ensuring quality?

Although there is a common misperception that online learning takes place without teaching and/or facilitation, the instructor or online learning facilitator in fact plays a crucial role in the quality of online learning.[86] However, a good face-to-face teacher will not necessarily be a good online educator or facilitator. Professional development for teaching and facilitation in the online context is needed to underpin quality.[87] Several guides, guidelines, tips and other information are available to support the online educator.[88] Some examples are presented below.

'[F]acilitating online learning is like any other situation where you work with human beings. It is important to share your warmth, to be curious about who your students are and how they think, to set a clear course, to provide encouragement, to be there.' Online learning facilitators are required to take on multiple roles, such as planning (organising the course), modelling effective online behaviour, coaching and encouraging individuals and creating teams, taking the role of instructor and being willing to learn, and being a good communicator.[89]

The University of Illinois notes that students should expect the following of their online learning facilitator:

- The facilitator should create a learning environment that makes use of life, work and educational experiences as part of creating a meaningful learning process.
- The facilitator should present the online curriculum and material in a manner that allows the student to translate theory into a practice.
- All students should be provided with multiple opportunities to develop and improve their performance throughout the course.
- Reasonable accommodation (flexibility) for students' context and needs should be made.
- Facilitators should listen to feedback provided by students.
- The facilitator should be concerned about and committed to students' success.
- The facilitator should keep students up to date regarding their progress and performance on assessments.
- Timely and quality feedback should be provided to students based on their contributions to learning activities and collaborative tasks and discussions.
- Students should not expect lecturing in the online environment.
- Students should not be required to complete tests of memorisation. Case analysis, problem solving and interactive activities are preferable.
- All students should be treated politely and with respect.
- The facilitator should be online every day or at least five out of seven days a week.[90]

16 What support should students receive?

Students entering a contact course require information about the institution, the course, the library, computing resources, tutorials and so on. Online learners do too, and they need information to help them assess their readiness for online learning. This means giving out concrete information before they embark on the course so that students can make informed decisions about this mode of study.[91] You can access a useful example of a short quiz designed to help students assess whether they are ready for online learning at Washington Online, the online learning website of the Washington State Board for Community and Technical Colleges.[92] Once enrolled, online learning students require support in various areas. The Open University of

Hong Kong provides an online support programme (called 'Learning OU Style') that takes students through a series of steps in preparation for online learning. These steps include: getting set up for study, becoming a successful student, study skills, and a sample unit that students can work through to 'get a taste of open learning'.[93] It is important that they know what support they can expect, and how to access it.[94] The table below summarises key areas in which student support for quality online learning is needed.

Table 3 *Student support for online learning*[95]

Area of Support	Description
Expectations	Service standards should be clear and easily available to online learners.
Information and administrative support	Experience shows that students who opt to study online commonly expect to be able to complete administrative processes, such as registration for example, online. It is recommended that regular student satisfaction surveys are conducted to ensure that administrative requirements are not a barrier to learning. Portals that are designed to be personalised tend to enhance the learner's experience.
Technological support	Students need to know what technology requirements are needed prior to registration. Even so, students are likely to need ongoing technological support and this support should be clear and readily available. Information centres, helpdesks and call centres are commonly used to provide technological support.
Study skills assistance	Sometimes online learners are adults returning to learning after sometime away, while open learning courses might encounter students with little prior experience of post-school learning, or students might have not have experienced online learning before. For this reason, support regarding the specific types of learning and study skills needed in an online environment is needed. This support includes, for example, time management and study schedules, assistance with balancing educational and other life demands, tools to provide peer assistance and collaboration, assistance in working with digital and online learning materials, information about plagiarism and how it can be avoided, and assistance with the use of online library searches and other means of finding information.
Online educational counselling	Educational and career counselling can be provided in a web environment. Well-prepared online resources (usually asynchronous) can assist students who might not have access to a counsellor.
Ongoing programme advising	Support in terms of learning pathway organisation and how best to spread coursework over study years depending on the context of the specific learner is important. Advisors should help online learners to understand program requirements and how prior learning might match those requirements or how completely learning can be transferred when moving into a new or different learning program.
Digital library	The educational institution's online library should be easily found among the institution's web pages, should provide tutorials to guide new students, and access to personal assistance should be provided, if needed.
Access for students with disabilities	In an online context services such as alternative formats for learning materials, advice about assistive technologies, referrals as needed, and learning accommodations (within the bounds of regulations and policy) should be made available to online students with disabilities.

Annotated Reading List: Benchmarks for Quality Online Learning

Asian Association of Open Universities (AAOU) (no date). Quality Assurance Framework. http://www.aaou.org/images/files/AAOU%20Quality%20Assurance%20Framework.pdf
The AAOU quality assurance framework specifies benchmarks of best practice in the areas of policy and planning; internal management; learners and learners' profiles; infrastructure, media and learning resources; learner assessment and evaluation; research and community services; human resources; learner support; program design and curriculum development; and course design and development.

Australasian Council on Open, Distance and e-Learning (2007). ACODE benchmarks for e-learning in universities and guidelines for use. http://www.acode.edu.au/resources/acodebmguideline0607.pdf
The following benchmarks are highlighted by ACODE: institutional policy and governance for technology supported learning and teaching; planning for, and quality improvement of the integration of technologies for learning and teaching; information technology infrastructure to support learning and teaching; pedagogical application of information and communication technology; professional/staff development for the effective use of technologies for learning and teaching; staff support for the use of technologies for learning and teaching; student training for the effective use of technologies for learning; and student support for the use of technologies for learning.

Bourne, J., & Moore, J.C (2003). Elements of Quality Online Education: Practice and Direction. USA: The Sloane Consortium. http://sloanconsortium.org/publications/books/eqoe4summary.pdf
The vision of quality presented by the Sloan Consortium in this report highlights 5 elements, namely: learning effectiveness, cost effectiveness, access, faculty satisfaction, and student satisfaction.

CHEA (2002). Accreditation and Assuring Quality in Distance Learning. CHEA Monograph Series 2002, Number 1. Washington DC: Council for Higher Education Accreditation http://www.chea.org/pdf/mono_1_accred_distance_02.pdf
The CHEA identifies 7 key areas for consideration in accreditation and quality assurance processes for distance learning: institutional mission, institutional structure, institutional resources, curriculum and instruction, faculty support, student support, and student learning outcomes.

Frydenberg (2002). Quality Standards in e-learning: A matrix of analysis. The International Journal of Research in Open and Distance Learning, 3(2). http://www.irrodl.org/index.php/irrodl/article/view/109/189.
Frydenberg summarizes nine quality benchmarks: institutional commitment, technology, student services, instructional design and course development, instruction and instructors, delivery, finances, regulatory and legal compliance, and evaluation.

Grifoll, J., Huertas, E., Prades., A., Rodríguez, S., Rubin, Y., Mulder, F and Ossiannilsson, E (2009). Quality Assurance of E-learning. Helsinki: European Association for Quality Assurance in Higher Education. http://www.enqa.eu/files/ENQA_wr_14.pdf
This reports presents an overview of the discussions and challenges identified at a quality assurance workshop held in Sweden. Amongst others, the report presents the National Agency for Higher Education (NAHE) in Sweden's approach to quality assurance which emphasises the importance of a holistic approach and that eLearning needs to be integrated in overall quality assurance processes. Ten criteria have been formulated and all ten need to be taken into consideration in a holistic perspective (NAHE, 2008). The ten criteria are: material and content, structure and virtual environment, cooperation and interactivity, communication, student assessment, flexibility and adaptability, support (student and staff), staff qualifications and experience, vision and institutional leadership, and resource allocation.

Institute for Higher Education Policy (2000). Quality on the Line: Benchmarks for Success in Internet-based Distance Education. http://defiant.corban.edu/jjohnson/Pages/Teaching/qualityonline.pdf
With support from Blackboard and National Education Association, these authors developed 24 common benchmarks

for high quality online education in seven categories, namely: institutional support; course development; teaching/learning; course structure, student support, faculty support, and evaluation and assessment.

Jung, I (2010). The dimensions of e-learning quality: from learner's perspective. Education Tech Research Development. http://taalim.ir/files/fulltext%20(2).pdf
This paper discussed online learning quality criteria in the South Korea context. The Ministry of Education, Science and Technology (MEST) has developed 95 detailed quality criteria for cyber universities in six domains: educational planning (clear mission and its integration in institutional policies), instruction (instructional design, content development, delivery and evaluation), human resources (students, academic faculty and administrative staff), physical resources (facilities, hardware and software/network system), management and administration, and educational results (stakeholder satisfaction and social recognition). Against this context, the paper presents the results of quality dimensions perceived by adult learners. The following seven dimensions were identified: interaction, staff support, institutional quality assurance mechanisms, institutional credibility, learner support, information and publicity, and learning tasks.

LIfIA and ElfEL (2004). Open eQuality Learning Standards. www.futured.com/documents/OeQLsMay2004_000.pdf
Canada's Open eQuality Learning Standards reflect not only providers' perspectives but also learners' perceptions of e-learning quality. 22 areas for assessing quality across three dimensions, were cited as being of special interest to learners. The three dimensions are: learning skills acquired, value of the credits gained, and return on investment.

McNaught, C (2011). Quality Assurance for Online Courses: From Policy to Process to Improvement. http://cms.ascilite.org.au/conferences/melbourne01/pdf/papers/mcnaughtc.pdf.
This study identified benchmarks in seven areas considered essential for ensuring quality in online education in the context of higher education, namely: clear planning, robust and reliable infrastructure, good support systems for staff and students (including training and written information), good channels of communication between staff and students, regular feedback to students on their learning, clear standards for courseware development, and ongoing evaluation with a strong student input.

Oliver, R (2003). Exploring benchmarks and standards for assuring quality online teaching and learning in higher education. Proceedings of the 16th Open and Distance Learning Association of Australia Biennial Forum, Canberra Australia. http://ro.ecu.edu.au/cgi/viewcontent.cgi?article=4278&context=ecuworks.
In this paper, Oliver provides the following summary benchmarking statements for a number of quality indicators for teaching and learning: learning and teaching plan, course establishment processes, scholarly teaching, teaching environment, effective academic review processes, manual for Australian universities, fitness of courses, student progress ratio, first to second year retention trends, equity quantitative success, and student satisfaction.

Pape, L., & Wicks, M (2009). National Standards for Quality Online Courses. International Association (iNACOL) for K-12 Online Learning. http://gsehd.gwu.edu/documents/gsehd/resources/gwuohs-onlineresources/standard-slegislation/inacol_nationalstandardsonlineprograms-102009.pdf
iNACOL focuses on establishing standards around the following components of online courses: content, instructional design, student assessment, technology, and course evaluation and support. In addition to these standards focused specifically on online courses, iNACOL has also produced standards for online teaching and online programs. For more information see: http://www.inacol.org/resources/publications/national-quality-standards/

Pawlowski, J.M (2007). The Quality Adaptation Module: Adaptation of the Quality Standard ISO-IEC 19796-1 for Learning, Education and Training. Educational Technology and Society, 10(2), 3-16. www.ifets.info/journals/10_2/2.pdf
The International Organization for Standardization (ISO) has developed 'a framework to describe, compare, analyze, and implement quality management and QA approaches' in the use of information technology in learning, education and training which includes seven processes for quality development: establishment of requirements (i.e., defining objectives), general conditions (i.e., analyses of external context, personnel resources and target group), design (i.e., design of learning content, didactics and activities), production (i.e., development of content), introduction (i.e., testing, adaptation and release of learning resources), implementation (i.e., administration, activities and review of

competence level), and evaluation/optimization. In this paper, Pawlowski presents a methodology and assessment of the ISO/IEC criteria in the context of education. For further information, see http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=33934

Quality Assurance Agency for Higher Education (QAA) (2006). Outcomes from institutional audit Institutions' support for e-learning. UK: QAA.http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/eLearning.pdf
In the UK context, the QAA has developed guidelines on the quality assurance of distance learning. Features of good practice are identified in connection with e-learning and distance learning.

Quality Matters (QM) Rubric Standards 2011-2013 edition. www.qmprogram.org.
The Quality Matters Rubric is a set of eight standards, with 41 specific indicators that can be used to evaluate quality of the design of online and blended learning courses. The rubric emphases the alignment of learning objectives, assessment and measurement, instructional materials, learner interaction and engagement, and course technology in order to ensure students achieve the specified learning outcomes.

Shattuck, K., & Diehl, W.C (2011). Scholarly research that informed and supported the development of the 2011-2013 Quality Matters in Higher Education Rubric. www.qmprogram.org.
This document presents a very useful summary of key literature of relevance to quality in online learning. For each source listed a short summary of the main findings is presented.

Swedish National Agency for Higher Education (2008). E-learning quality. Aspects and criteria for evaluation of e-learning in higher education. Report 2008:11 R.http://www.hsv.se/download/18.8f0e4c9119e2b4a60c800028057/0811R.pdf
This report draws on the work of Swedish National Agency for Higher Education (HSV) in the area of quality in distance and e-learning since 2006. Based on an extensive review of existing models of e-learning quality, the HSV offers a model for quality assessment of e-learning (ELQ) in E-Learning Quality which is made up of 10 quality dimensions: material/content, structure/virtual environment, communication, cooperation and interactivity, student assessment, flexibility and adaptability, support (for students and staff), staff qualifications and experience, vision and institutional leadership, and resource allocation.

Ubachs, G (2009). ENQA Workshop. Quality Assurance of E-learning. European Association of Distance Teaching Universities (EADTU). http://www.enqa.eu/files/George%20Ubachs%20E-xcellence%20+%20Sigtuna.pdf
EADTU has developed the E-xcellence manual, which is described in this presentation. The manual offers a self-assessment tool which contains 33 benchmarks in six categories, including: strategic management, curriculum design, course design, course delivery, staff support, and student support. For additional information or to access the E-xcellence manual see http://e-xcellencelabel.eadtu.eu/.

Welch, T., & Reed, Y (Eds) (no date). Designing and Delivering Distance Educations: Quality Criteria and Case Studies from South Africa. Johannesburg: National Association of Distance Education Organizations of South Africa (NADEOSA). http://www.nadeosa.org.za/resources/reports/NADEOSA%20QC%20Section%201.pdf.
This comprehensive guide, that also includes useful case studies from South Africa, presents 212 individual quality elements in thirteen criteria: policy and planning, learners, program development, course design, course materials, assessment, learner support, human resource strategy, management and administration, collaborative relationships, quality assurance, information dissemination, and results.

Western Cooperative for Education Telecommunications (no date). Best Practices for Electronically Offered Degree and Certificate Programs.
http://www.niu.edu/assessment/manual/_docs/Best%20Practices.pdf
This best practice guide was developed by the eight regional accrediting commissions in the USA, and includes 29 best practices in five quality components, namely: institutional context and commitment, curriculum and instruction, faculty support, student support, and evaluation and assessment.

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[1]Oliver, R. (2001). Assuring the Quality of Online Learning in Australian Higher Education. In M. Wallace, A. Ellis & D. Newton (Eds). Proceedings of Moving Online II Conference (pp. 222- 231). Lismore: Southern Cross University.

[2]Daniel, J. (2011). Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility. http://www.academicpartnerships.com/research/white-paper-making-sense-of-moocs

[3]http://www.study2u.com/online-learning

[4]Frydenberg, J. (2002). Quality Standards in e-Learning: A Matrix of Analysis. The International Review of Research in Open and Distance Learning. Vol 3(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/109/189 | http://www.wisegeek.com/what-is-online-learning.htm

[5]http://www.utas.edu.au/learning-teaching-online/old-mylo/about-teaching-online/what-is-online-teaching-and-learning

[6]http://www.online.colostate.edu/onlinedistance/online-learning.dot

[7]https://www.coursera.org/

[8]https://www.udacity.com/

[9]http://futurelearn.com/

[10]http://www.academicpartnerships.com/

[11]The founding member universities included: Albert-Ludwig University in Freiburg (Germany), Fudan University (China), Lund University (Sweden), McGill University (Canada), National University of Singapore, University of Auckland (New Zealand), University of Birmingham (UK), University of British Columbia (Canada), University of Edinburgh (UK), University of Glasgow (UK), University of Hong Kong, University of Melbourne (Australia), University of New South Wales (Australia), University of Nottingham (UK), University of Queensland (Australia) and University of Virginia (US). (See http://www.u21global.edu.sg/Education/About/U21G/History for additional information)

[12]Ehlers, U.D (2004). Quality in e-Learning from a Learner's Perspective. Paper presented at the Third EDEN Research Workshop in Oldenburg, Germany. http://www.eurodl.org/materials/contrib/2004/Online_Master_COPs.html
See also: Jung, I (2010). The dimensions of e-learning quality: from a learner's perspective. Education Tech Research Development. taalim.ir/files/fulltext%20(2).pdf. LIfIA and ElfEL (2004). Open eQuality Learning Standards. http://futured.com/documents/OeQLsMay2004_000.pdf.

[13]Jara, M., and Mellar, H. (2007). Exploring the mechanisms for assuring quality of e-learning courses in UK Higher Education Institutions. Retrieved from http://www.eurodl.org/materials/contrib/2007/Jara_Mellar.htm

[14]http://www.qmprogram.org/higher-education-program

[15]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.
Australasian Council on Open Distance and e-Learning. (2007). ACODE benchmarks for e-learning in universities and guidelines for use. (http://www.acode.edu/au/resources/acodebmguideline0607.pdf)
Commission of Institutions of Higher Education. (no date). Best Practices for Electronically Offered Degree and Certificate Programs

[16]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.
CHEA Institute for Research and Study of Accreditation and Quality Assurance (2002). Accreditation and Assuring Quality in Distance Learning. CHEA Monograph Series 2002, Number 1

[17]Frydenberg, J. (2002). Quality Standards in e-Learning: A Matrix of Analysis. The International Review of Research in Open and Distance Learning. Vol 3(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/109/189

[18]Australasian Council on Open Distance and e-Learning. (2007). ACODE benchmarks for e-learning in universities and guidelines for use. Retrieved from http://www.acode.edu/au/resources/acodebmguideline0607.pdf
Asian Association of Open Universities (AAOU) (no date). Quality Assurance Framework. http://www.aaou.org/images/files/AAOU%20Quality%20Assurance%20Framework.pdf

[19]Commission of Institutions of Higher Education. (no date). Best Practices for Electronically Offered Degree and Certificate Programs. http://www.aaup.org/NR/rdonlyres/BBA85B72-20E9-4F62-B8B5-CDFF03CD8A53/0/WICHEDOC.PDF

[20]http://www.unisa.ac.za/Default.asp?Cmd=ViewContent&ContentID=2566

[21]Rockwell, K., Schauer, J., Fritz, S.M., Marx, D.B. (2000). Faculty education, assistance and support needed to deliver education via distance. Online Journal of Distance Education Administration, 3(2), Retrieved from http://www.westga.edu/~distance/rockwell32.html

[22]Quality Assurance Agency for Higher Education (2008). Outcomes from institutional audit. Institutions' frameworks for managing quality and academic standards. Second Series. United Kingdom. http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/frameworksqualitystandards.pdf
Council on Higher Education (2004). Criteria for Institutional Audits. Pretoria South Africa. http://www.che.ac.za/documents/d000061/
Commonwealth of Learning (2009). Quality Assurance Toolkit for Distance Higher Education Institutions and Programmes. http://www.col.org/SiteCollectionDocuments/HE_QA_Toolkit_web.pdf

[23]Beso, A., Bollaert, L., Curvale, B., Jensen, H.T., Harvey, L., Helle, E., Maguire, B., Mikkola, A., & Sursock, A. (2008). Implementing and Using Quality Assurance: Strategy and Practice. A Selection of Papers from the 2nd European Quality Assurance Forum. Brussels: The European University Association. www.eua.be/typo3conf/ext/bzb_securelinl/pushFile.php?cuid=4008file=fileadmin/user-upload/files/Publications/Implementing_and_Using_Quality_Assurance_final.pdf

[24]Hodson, P., & Thomas, H (2003). Quality assurance in Higher Education. Fit for the new millennium or simply year 2000 compliant? Higher Education, 45: 375-387. http://link.springer.com/article/10.1023/A%3A1022665818216#page-1
El-Khawas, E. (1998). Quality Assurance in Higher Education: Recent Progress; Challenges Ahead. Paper prepared (with support from the World Bank) for the UNESCO World Conference on Higher Education, Paris, 1998. www.citseerx.ist.psu.edu.
Srikanthan, G., & Dalrymple, J (2003). Developing alternative perspectives for quality in higher education. International Journal of Educational Management, 17(3): 126-136. http://www.emeraldinsight.com/journals.htm?articleid=838849&show=abstract

[25]Redder, L.A. (2010). Quality Assurance in professional higher education institutions. The structure of internal quality assurance systems and the experienced costs. Masters Thesis. Centre for Higher Education and Policy Studies (CHEPS), University of Twente, Netherlands. http://essay.utwente.nl/60414/1/MA_thesis_L_Redder.pdf

[26]Quality Assurance Agency for Higher Education (2008). Outcomes from institutional audit. Institutions' frameworks for managing quality and academic standards. Second Series. United Kingdom. http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/frameworksqualitystandards.pdf Council on Higher Education (2004). Criteria for Institutional Audits. Pretoria South Africa. http://www.che.ac.za/documents/d000061/ Beso, A., Bollaert, L., Curvale, B., Jensen, H.T., Harvey, L., Helle, E., Maguire, B., Mikkola, A., & Sursock, A. (2008). Implementing and Using Quality Assurance: Strategy and Practice. A Selection of Papers from the 2nd European Quality Assurance Forum. Brussels: The European University Association. www.eua.be/typo3conf/ext/bzb_securelinl/pushFile.php?cuid=4008file=fileadmin/user-upload/files/Publications/Implementing_and_Using_Quality_Assurance_final.pdf Redder, L.A. (2010). Quality Assurance in professional higher education institutions. The structure of internal quality assurance systems and the experienced costs. Masters Thesis. Centre for Higher Education and Policy Studies (CHEPS), University of Twente, Netherlands. http://essay.utwente.nl/60414/1/MA_thesis_L_Redder.pdf

[27]Loukkola, T., & Zhang, T (2010). Examining Quality Culture: Part 1 – Quality Assurance Processes in Higher Education Institutions. European University Association. http://www.eua.be/pubs/Examining_Quality_Culture_Part_1.pdf

[28]The Federation for Continuing Education in Tertiary Institutions (2004). Quality Assurance Policies and Procedures of Member Institutions. University of Hong Kong: Hong Kong. http://www.fce.edu.hk/files/QAmanual.pdf

[29]Hénard, F., & Mitterle, A. (no date). Governance and quality guidelines in Higher Education. A review of governance arrangements and quality assurance guidelines. Paris: OECD. http://www.oecd.org/edu/imhe/46064461.pdf

[30]Commonwealth of Learning (2009). Quality Assurance Toolkit for Distance Higher Education Institutions and Programmes. http://www.col.org/SiteCollectionDocuments/HE_QA_Toolkit_web.pdf University of Oxford (2008). Quality Assurance Handbook. http://www.admin.ox.ac.uk/media/global/wwwadminoxacuk/localsites/educationcommittee/documents/QA_Handbook.pdf

[31]Loukkola, T., & Zhang, T (2010). Examining Quality Culture: Part 1 – Quality Assurance Processes in Higher Education Institutions. European University Association. http://www.eua.be/pubs/Examining_Quality_Culture_Part_1.pdf

[32]Oliver, R. (2001). Assuring the Quality of Online Learning in Australian Higher Education.
In M. Wallace, A. Ellis & D. Newton (Eds). Proceedings of Moving Online II Conference (pp 222-231). Lismore: Southern Cross University.

[33]Frydenberg, J. (2002). Quality Standards in e-Learning: A Matrix of Analysis. The International Review of Research in Open and Distance Learning. Vol 3(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/109/189

[34]http://www.contactnorth.ca/tips-tools/how-assess-costs-online-learning-post-secondary-education

[35]Oliver, R. (2001). Assuring the Quality of Online Learning in Australian Higher Education. In M. Wallace, A. Ellis & D. Newton (Eds). Proceedings of Moving Online II Conference (pp 222-231). Lismore: Southern Cross University.

[36]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.

[37]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.

[38]http://www.contactnorth.ca/tips-tools/how-assess-costs-online-learning-post-secondary-education

[39]Ehlers, U.D (2004). Quality in e-Learning from a Learner's Perspective. Paper presented at the Third EDEN Research Workshop in Oldenburg, Germany. http://www.eurodl.org/materials/contrib/2004/Online_Master_COPs.html
Jung, I (2010). The dimensions of e-learning quality: from a learner's perspective. Education Tech Research Development. http://taalim.ir/files/full-text%20(2).pdf. LIfIA and ElfEL (2004). Open eQuality Learning Standards. http://futured.com/documents/OeQLsMay2004_000.pdf.

[40]Ehlers, U.D (2004). Quality in e-Learning from a Learner's Perspective. Paper presented at the Third EDEN Research Workshop in Oldenburg, Germany.

[41]Ehlers, U.D (2004). Quality in e-Learning from a Learner's Perspective. Paper presented at the Third EDEN Research Workshop in Oldenburg, Germany.

[42]Ehlers, U.D (2004). Quality in e-Learning from a Learner's Perspective. Paper presented at the Third EDEN Research Workshop in Oldenburg, Germany. See also, CHEA Institute for Research and Study of Accreditation and Quality Assurance (2002). Accreditation and Assuring Quality in Distance Learning. CHEA Monograph Series 2002, Number 1

[43]http://www.intulogy.com/addie/design-document.html

[44]IEEE (2001). Reference Guide for Instructional Design and Development. http://www-users.cs.york.ac.uk/~idb/ieee.instruct.pdf

[45]Codone, S (no date). Measuring Quality in the Production of Web-based Training: Instructional Design, Process Control, and User Satisfaction. Raytheon Technical Services Company. Pensacola, Florida. http://faculty.mercer.edu/codone_s/tco290/tm028_0829.pdf

[46]www.spsu.edu/instructionaldesign

[47]http://www.spsu.edu/instructionaldesign/course_design/resources/bestpractices.pdf

[48]Parscal, T., and Riemer, D. (no date). Assuring Quality in Large-Scale Online Course Development. Available at http://www.westga.edu/~distance/ojdla/summer132/parscal_riemer132.html

[49]Some example include:
http://www.spsu.edu/instructionaldesign/course_design/resources/index.htm
http://www.hfidtc.com/research/training/training-reports/phase-1/2-1-5-2-elearning-design-guidelines.pdf
Boettcher, JV (2006). Designing for Learning. Instructional Design in a Nutshell.
http://www.designingforlearning.info/services/writing/nutshell.htm | http://www.saide.org.za/design-guide/
Commonwealth of Learning (2005). Creating Learning Materials for Open and Distance Learning. Paris: Commonwealth of Learning.
http://www.saide.org.za/design-guide/sites/default/files/course_design/odlinstdesignHB.pdf
Randall, C (2006). Resources for new ways of learning. A manual for developers of learning resources. Polokwane: Limpopo Department of Education.

http://www.saide.org.za/design-guide/sites/default/files/course_design/Resources%20for%20new%20ways%20of%20learning%20revised.pdf

[50]http://www.saide.org.za/design-guide/12-open-educational-resources
http://www.oerafrica.org/understandingoer/UnderstandingOER/tabid/56/Default.aspx
http://www.oerafrica.org/ResourceResults/tabid/1562/mctl/Details/id/39016/Default.aspx
http://www.ocwconsortium.org/

[51]www.oerafrica.org

[52]http://www.ignouflexilearn.ac.in/flexilearn/

[53]Commonwealth of Learning, (2011). A Basic Guide to Open Educational Resources (OER). Canada: Commonwealth of Learning, and UNESCO. http://www.col.org/resources/publications/Pages/detail.aspx?PID=357

[54]Tan, I (2003). Designing an electronic portfolio system for a large research university in Asia. Centre for Instructional Technology, National University of Singapore. http://net.educause.edu/ir/library/pdf/EDU03140a.pdf

[55]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.

[56]Stiles, MJ (2000). Effective Learning and the Virtual Learning Environment. Keynote at the 2000 European Universities Information Systems Congress. Poland. http://www.staffs.ac.uk/COSE/cose10/posnan.html

[57]Dutton, W.H; Cheong, P.H., & Park, N (2004). The Social Shaping of a Virtual Learning Environment: The Case of a University-wide course management system. Electronic Journal of e-Learning, 2(1):69-70. http://www.inf.ufes.br/~cvnascimento/artigos/issue1-art3-dutton-cheong-park.pdf

[58]Van Raaij, EM., & Schepers, JJL (2008). The acceptance and use of a virtual learning environment in China. Computers and Education, 50(3): 838-853. Chou, S-W; and Liu, C-H (2005). Learning effectiveness in a Web-based virtual learning environment: a learner control perspective. Journal of Computer Assisted Learning, 21(1): 65-76.

[59]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.

[60]Jones, C. and Hosein, A. (2010). Profiling University Students' Use of Technology: Where Is the Net Generation Divide? The International Journal of Technology Knowledge and Society Vol. 6 (3) pp 43-58

[61]Australasian Council on Open Distance and e-Learning. (2007). ACODE benchmarks for e-learning in universities and guidelines for use. (http://www.acode.edu/au/resources/acodebmguideline0607.pdf)
Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.

[62]Frydenberg, J. (2002). Quality Standards in e-Learning: A Matrix of Analysis. The International Review of Research in Open and Distance Learning. Vol 3(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/109/189

[63]Frydenberg, J. (2002). Quality Standards in e-Learning: A Matrix of Analysis. The International Review of Research in Open and Distance Learning. Vol 3(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/109/189

[64]Storey, M-A., Phillips, B., Maczewski, M., & Wang, M. (no date). Evaluating the Usability of Web-based Learning Tools. Departments of Computer Science and Psychology. University of Victoria, British Columbia, Canada. http://web.mit.edu/16.459/www/Weblearn1.pdf

[65]Kukulska-Hulme, A., & Shield, L (2004). The Keys to Usability in e-Learning Websites. Proceedings of the Networked Learning Conference 2004. http://www.networkedlearningconference.org.uk/past/nlc2004/proceedings/individual_papers/kukulska_shield.htm.

[66]Genden, S (2005). The Use of Multimedia in Online Distance Learning. Wayne State University. http://www.gendendesign.net/pdfs/MultimediaUse.pdf

[67]Hartsell, T., & Yuen, S. C-Y (2006). Video streaming in online learning. AACE Journal, 14 (1).

[68]Block, R & Godsk, M (2009). Podcasts in Higher Education: What Students Want, What They Really Need, and How this Might be Supported. In T. Bastiaens et al. (Eds), Proceedings for World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2009 (pp. 117-128). http://www.editlib.org/p/32442

[69]McKinney, D., Dyke, J.L., & Luber, E.S (2009). iTunes University and the Classroom: Can Podcasts replace Professors? Computers & Education, 52: 617-623. http://www.brown.uk.com/teaching/qualitativepostgrad/mckinney.pdf

[70]See for example, Aldrich, C (2005). Learning by Doing: A Comprehensive Guide to Simulations, Computer Games and Pedagogy in e-Learning and Other Educational Experiences. John Wiley and Sons. Finkelstein, N.D., Adams, W.K., Keller, C.J., Kohl, P.B., Perkins, K.K., Podolefsky, N.S., & Reid, S (2005). When learning about the real work is better done virtually: A study of substituting computer simulations for laboratory equipment. Physics Education Research, 1, 010103. http://www.colorado.edu/physics/EducationIssues/papers/CCKe010103.pdf Gredler, M.E (2004). Games and Simulations and their Relationships to Learning. http://www.coulthard.com/library/Files/gredler_2004_gamesandsimsandrelationtolearning.pdf

[71]Maharg, P., Owen, M (2007). Simulations, learning and the metaverse: changing cultures in legal education. Journal of Information, Law, Technology, 1. http://lsi.typepad.com/lsi/files/simulations_learning_and_the_metaverse.pdf

[72]Finkelstein, N.D., Adams, W.K., Keller, C.J., Kohl, P.B., Perkins, K.K., Podolefsky, N.S., & Reid, S (2005). When learning about the real work is better done virtually: A study of substituting computer simulations for laboratory equipment. Physics Education Research, 1, 010103. http://www.colorado.edu/physics/EducationIssues/papers/CCKe010103.pdf

[73]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education. Commonwealth of Learning (2005). Creating Learning Materials for Open and Distance Learning. Paris: Commonwealth of Learning. http://www.saide.org.za/design-guide/sites/default/files/course_design/odlinstdesignHB.pdf Randall, C (2006). Resources for new ways of learning. A manual for developers of learning resources. Polokwane: Limpopo Department of Education. http://www.saide.org.za/design-guide/sites/default/files/course_design/Resources%20for%20new%20ways%20of%20learning%20revised.pdf

[74]Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education.

[75] http://www.saide.org.za/design-guide/24-how-will-we-know-learners-have-learned-engagement-assessment-feedback

http://www.saide.org.za/design-guide/sites/default/files/course_design/NADEOSA%20Quality%20Criteria%20-%20Assessment.pdf
http://pre2005.flexiblelearning.net.au/guides/assessment.pdf Commission of Institutions of Higher Education. (no date). Best Practices for Electronically Offered Degree and Certificate Programs. Parscal, T., and Riemer, D. (no date). Assuring Quality in Large-Scale Online Course Development. Available at http://www.westga.edu/~distance/ojdla/summer132/parscal_riemer132.html Southern Regional Education Board. (2003). Essential Principles of High-Quality Online Teaching.

[76]Sarrayrih, M.A., & Ilyas, M. (2013). Challenges of Online Exam, Performances and problems for Online University Exam. International Journal of Computer Science Issues, 10(1). http://ijcsi.org/papers/IJCSI-10-1-1-439-443.pdf
Sheshadri, R., Reddy, T.C. Kumar, N.A (2011). Web-Based-Secure Online Non-Choice-Based Examination System (WONES) using Cryptography. International Journal of Computer Science and Engineering (IJCSE), 3(10). http://www.enggjournals.com/ijcse/doc/IJCSE11-03-10-113.pdf
Swedish National Agency for Higher Education. (2008). E-learning quality- Aspects and criteria for evaluation of e-learning in higher education. For an example of a system supporting these sorts of security procedures, see http://www.blog.epravesh.com/?p=1174, and http://www.eklavvya.in/

[77]See for example, Software Secure http://www.slideshare.net/SoftwareSecure/protect-academic-integrity-in-online-exam-environments-without-sacrificing-student-convenience

[78]Australian National Training Authority (2002). Assessment of Online Teaching. Australian Flexible Learning Quick Guide Series. http://pre2005.flexiblelearning.net.au/guides/assessment.pdf Jacoy, C., DiBiase, D (2006). Plagiarism and Adult Learners Online: A case study in detection and remediation. The International Review of Research in Open and Distance Learning, 7(1). http://www.irrodl.org/index.php/irrodl/article/view/242/466

[79]McCord, A (2008). Improving Online Assignments to Deter Plagiarism. TCC 2008 Proceedings. http://etec.hawaii.edu/proceedings/2008/McCord2008.pdf

[80]Australian National Training Authority (2002). Assessment of Online Teaching. Australian Flexible Learning Quick Guide Series. http://pre2005.flexible-learning.net.au/guides/assessment.pdf (pg. 7). http://onlinelearninginsights.wordpress.com/2012/03/24/why-we-need-group-work-in-online-learning/

[81]For some resources relevant to this debate, see Brook, C., & Oliver, R. (2003). Online learning communities: Investigating a design framework. Australian Journal of Educational Technology, 19(2): 139-160.
Australian National Training Authority (2002). Assessment of Online Teaching. Australian Flexible Learning Quick Guide Series. http://pre2005.flexiblelearning.net.au/guides/assessment.pdf

[82]Brook, C., & Oliver, R. (2003). Online learning communities: Investigating a design framework. Australian Journal of Educational Technology, 19(2): 139-160.
Curtis, D.D., & Lawson, M.J (2001). Exploring Collaborative Online Learning. JALN, 5(1). http://wikieducator.org/images/6/60/ALN_Collaborative_Learning.pdf

[83]Swan, K (2002). Building Learning Communities in Online Courses: the importance of interaction. Education, Communication and Information, 2(1): 23-49. http://portfolio.educ.kent.edu/daltone/cmc/articles/dg_swan.pdf

[84]http://www.saide.org.za/design-guide/13-technology-supported-teaching-and-learning

[85]Morrison, D. (2012). 5 Tools and Strategies that Support Group Collaboration Online. http://onlinelearninginsights.wordpress.com/2012/10/09/5-tools-and-strategies-that-support-group-collaboration-online/

[86]http://scienceonline.terc.edu/facilitating_online_learning.html

[87]Rockwell, K., Schauer, J., Fritz, S.M., Marx, D.B. (2000). Faculty education, assistance and support needed to deliver education via distance. Online Journal of Distance Education Administration, 3(2), Retrieved from http://www.westga.edu/~distance/rockwell32.html

[88]Some examples include:
http://www.elearnspace.org/Articles/onlinefacilitation.htm#tools
http://scienceonline.terc.edu/facilitating_online_learning.html
http://pre2005.flexiblelearning.net.au/guides/facilitation.html
http://www.ion.uillinois.edu/resources/tutorials/pedagogy/instructorProfile.asp
http://mindgatemedia.com/2011/03/14/the-ten-crucial-roles-of-the-online-instructor/

[89]Heuer, B.P. & King, K (2004). Leading the Band: The Role of the Instructor in Online Learning for Educators. The Journal of Interactive Online Learning, 3(1). http://olms.cte.jhu.edu/olms/data/resource/5952/The%20Role%20of%20the%20Instructor%20in%20Online%20Learning%20for%20Educators.pdf

[90]Adapted from, http://www.ion.uillinois.edu/resources/tutorials/pedagogy/instructorProfile.asp

[91]Martinez, S., Torres, H., & Giesel, V (2006). Online Student Support Services. A Best Practices Monograph. Determining Student Readiness for Online Instruction. http://www.onlinestudentsupport.org/Monograph/readiness.php
Roper, A.R (2007). How Students Develop Online Learning Skills. EDUCAUSE Quarterly. http://www.educause.edu/ero/article/how-students-develop-online-learning-skills

[92]http://www.waol.org/getstarted/IsOnline4Me.asp

[93]See: http://www.ouhk.edu.hk/~etpwww/oustyle/e_oustyle.html

[94]Hughes, J.A. (2004). Chapter 15. Supporting the Online Learner. In T. Anderson & F. Elloumi (eds). Theory and Practice of Online Learning. Canada: Athabasca University. http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

[95]Adapted from Hughes, J.A. (2004). Chapter 15. Supporting the Online Learner. In T. Anderson & F. Elloumi (eds). Theory and Practice of Online Learning. Canada: Athabasca University. http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

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FLORIDA POLYTECHNIC UNIVERSITY

E-Learning and Online Education Brief

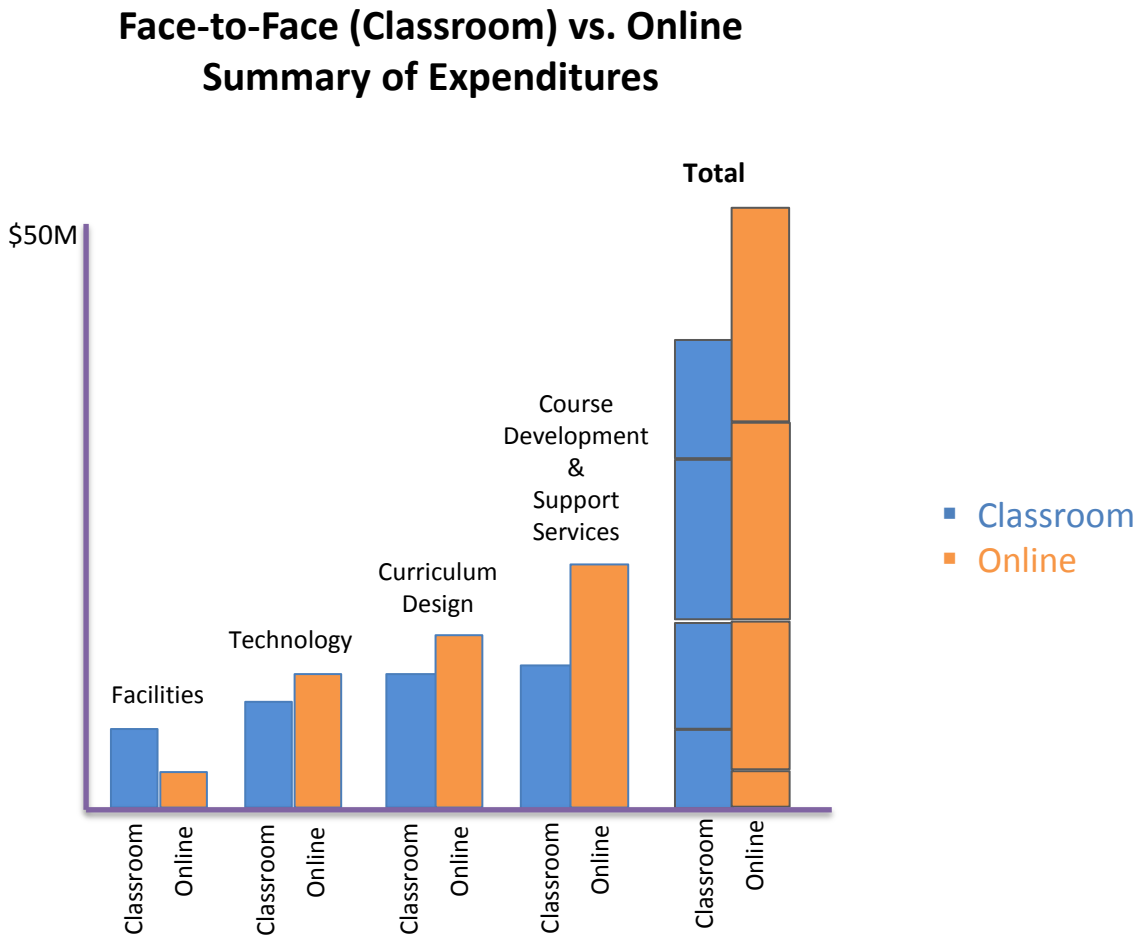
FLORIDA POLYTECHNIC UNIVERSITY

Agenda

I. Relevant Questions / Answers
II. Cost of Classroom vs. Online
III. Strategy and Vision

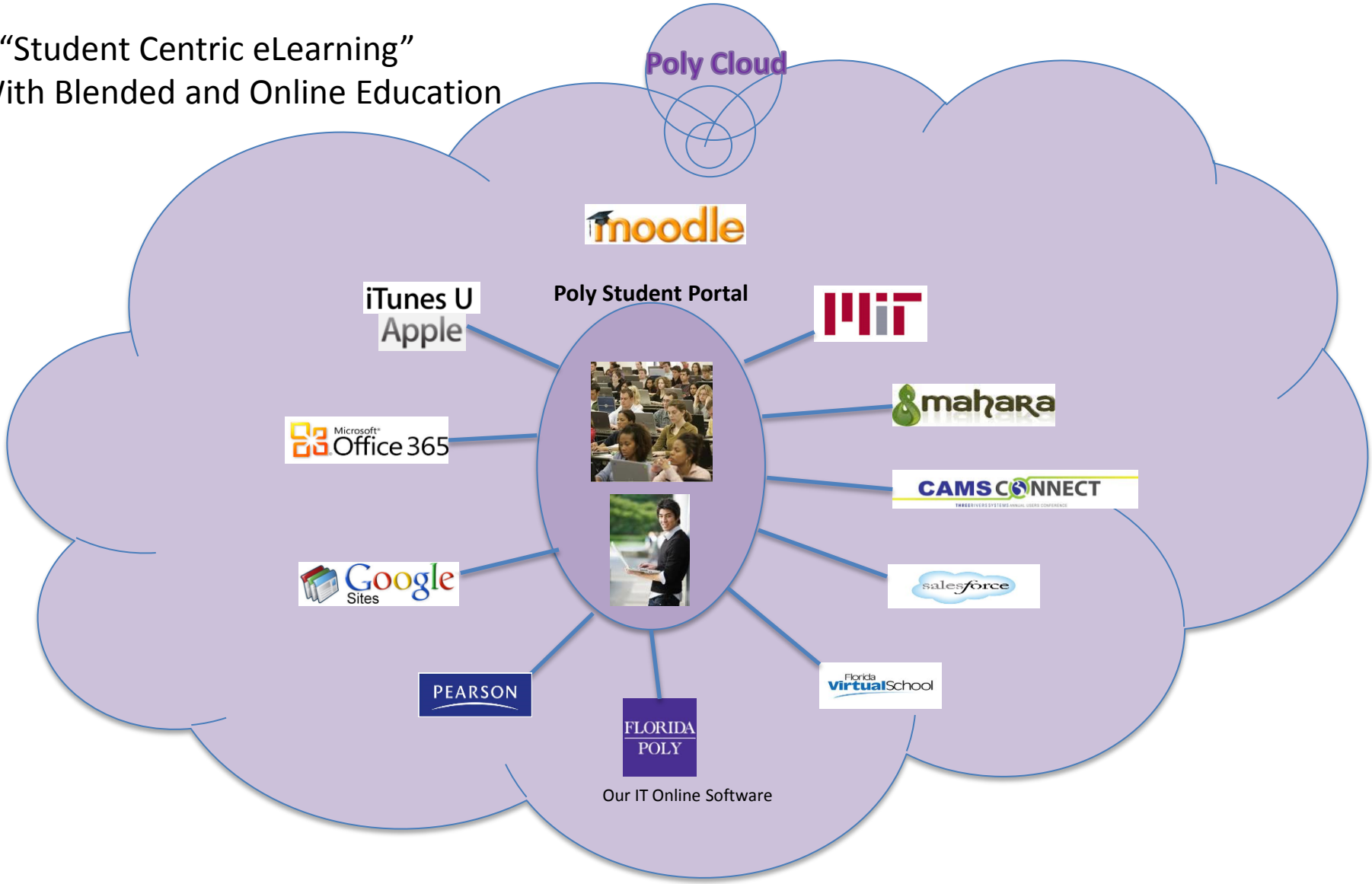
FLORIDA POLYTECHNIC UNIVERSITY

Cost of Classroom vs. Online



Strategy and Vision

"Student Centric eLearning"
With Blended and Online Education



Strategy and Target Students

On-Site / Blended Courses

College of Innovation & Technology

- Advanced Technology
- Science and Technology Mgmt.
- Computer Science

College of Engineering

- Electrical Engineering
- Chemical Engineering
- Industrial Engineering / Mechanical Engineering

Target Students

- Residential and commuter students
- Can be campus-based or remote

Strategy and Target Students

Fully Online Programs & Courses

General Education Courses/Credits
- Gen Ed Courses To Be Determined

Transfer Courses
- Some Online Transfer Courses will be accepted

Non-Traditional Students including Continuing Ed
- Some Online Courses will be offered

Support Couse Delivery System

- Improve Student/Teacher Communication
- Enhance Use of Technology in-and-out of the Classroom
- Accept Transfer

Online Learning Conference – December 3 & 4, 2013 - UF in Gainesville, FL

1. ***Online Learning and the Future of Residential Education*, Sanjay Sarma,** Director of Digital Learning and Fred Fort Flowers and Daniel Fort Flowers Professor of Mechanical Engineering, **MIT**

    a. Anytime, anywhere generation.

    b. Learning by doing.

    c. Active learning.

    d. MITx online course content, (Not for Credit).

    e. Grading by TA's, multiple chances to test.

    f. Majority are taking the courses for refreshing their information, mostly experts.

    g. Not for fully online or credit.

    h. Goal is to enrich not to take away.

    i. Agreement with faculty about IP and royalties for future use.

    j. They have to review courses every time the course is offered for currency and input of the faculty teaching the course.

    k. Doing digital online collaborations with a couple of Univ., Harvard & Stanford.

    l. Florida Poly is in communication with MIT for utilizing edX in our online strategy. A telephone discussion is scheduled for 12/12/2013 to discuss partnership.

2. ***New Ecosystems for Higher Education: The Road Ahead,* Richard A. DeMillo**, Distinguished Professor of Computing and Management, Director, Center for 21st Century Universities, Lumina Foundation Fellow, Georgia Institute of Technology

    a. There first MOOCs try failed, Lost over $10M over two years period.

    b. Second try, their own initiative, very costly

    c. Started with 20 courses, now they have a total of 40 and working on 10 additional courses, **Very costly still.**

    d. **Completion rate is 4.5%. Face to face is 74%.**

e. **$40 gets you a certificate, increased completion rate to 99%.**

f. Students' mix ~ 32% USA and the rest mostly Asians.

Drivers and trends:

- Costly unless heavily enrolled, I.e. 10,000 or more.
- Most MOOCs start with thousands and drop to 100s.
- Education is globally homogenized, approximately, 50,000 universities worldwide.
- Technology & MOOCs look alike. But they are completely different in outcome.
- **MOOCs are not going to continue as a phenomenon, they are fading.**

3. **Other Factors: Government & SACS:**

   a. **Federal Government demanding verification of person taking the exam is the same as the person who signed up for the course.**

   b. **Fed. Gov. demanding the Institution presence in the state of the enrollee.**

   c. **SACS limitations: Less than 25%, 25% to 49%, and fully online.**

   d. **"What Will Happen to MOOCs Now that Udacity Is Leaving Higher Ed?", Is an article Published in Campus Technology, 12/11/2013. Sebastian Thrun threw a wrench in the MOOC model by declaring that massive open online courses don't work for higher education. What's next for the online learning trend?**

Task Force on Postsecondary Online Education in Florida

FINAL REPORT

Submitted

December 9, 2013

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Task Force Charge

The 2012 Legislature provided funds to the Board of Governors (BOG) to obtain the services of a consulting firm to study online learning in Florida. A contract was awarded to The Parthenon Group and its report and additional materials were submitted to the Board on November 16, 2012. After reviewing the report, obtaining additional information, and having multiple discussions, the BOG's Strategic Planning Committee recommended that the full Board:

- Use the strategic plan's preeminence metrics to designate a university to create a separate arm to provide online degree programs of the highest quality, and request funds from the Legislature to support such an effort. The preeminence metrics were passed by the 2012 Legislature and approved by the Board for use in the 2012-2013 university workplans. Further, the selected university will create an innovation and research center to ensure the state is a leader in the development of cutting-edge technology and instructional design for online programs and conduct research to help strengthen online degree programs and the success of online students.
- Direct the Chancellor to form a system-wide workgroup to report to the Strategic Planning Committee and continue working with the state's universities, colleges, and other delivery systems to determine ways in which services and online degree programs, including market-based job analyses, could be better coordinated to ensure state and student needs were met in a cost-efficient and effective manner.

The Board approved the Committee's motions at its meeting on February 21, 2013. The Legislature passed, and the Governor approved, CS/CS/SB 1076, creating an online institute at a preeminent university, thereby implementing the first motion. The online institute, UF Online, was established at the University of Florida (UF) and is charged with providing high quality, fully online baccalaureate degree programs for UF students.

The Chancellor began implementing the second motion by appointing the Task Force on Postsecondary Online Education in Florida, in collaboration with the Florida College System (FCS) Chancellor, Randy Hanna. The Task Force was to focus on postsecondary online learning programs and services being provided in a more cost-efficient and effective manner throughout the system and state. Membership of the Task Force included representatives from universities (including the University of Florida), colleges, the private sector, Florida Virtual Campus (FLVC), and the Department of Economic Opportunity (DEO). Refer to Appendix B for a listing of Task Force members and their affiliations. The Task Force was charged with the following:

Recommend strategies for better coordinating services and online programs in the State University System and Florida College System and, to the extent feasible, across other delivery systems to ensure state economic development needs and student demands are being met in an effective and cost-efficient manner. Such recommendations are to include, but not be limited to the following:

- *Goals for online education and related accountability measures for tracking performance on those goals.*
- *Improved data collection at the institutional and system levels. Such data collection must, at a minimum, be adequate for tracking performance on the accountability measures recommended above and shall include applicable cost components involved in the development and delivery of distance learning courses, as well as student feedback regarding the delivery and support of online education.*
- *Best practices that will lead to quality credit and noncredit programs.*
- *Viability/desirability of common technical capabilities.*
- *Alignment of online programs with identified state economic development needs and student demands.*
- *Raising awareness of online courses and programs to different segments of the market (marketing).*
- *Providing student support services in a collaborative, cost-efficient manner.*
- *Effective use of technological innovations (mobile devices, cloud computing, social networks, etc.).*
- *Providing faculty support services and encouraging inter-institutional faculty collaboration in course development.*
- *Development and expanded use of eTextbooks and other electronic materials.*
- *Collaborative licensing of resources and technology.*
- *Collaborative efforts related to Massive Open Online Courses (MOOCs) and to competency-based online courses, in cooperation with the Department of Education.*
- *Sharing information and resources.*

This report is the result of the Task Force's efforts.

Project Approach

The Task Force held an organizational meeting on June 18, 2013. In order for the Task Force to learn from activities in other states, three speakers presented their online learning strategies and achievements to date:

- Dr. Jay Box, Chancellor, Kentucky Community and Technical College System
- Dr. John Cunningham, Interim CEO of UMassOnline
- Carey Hatch, Associate Provost, State University of New York

The Task Force members were subsequently divided into three committees, with the following areas of focus.

Academic Affairs Committee	
Issues to consider:	• Goals and performance measures • Aligning programs with state needs • Effective practices • MOOCs • Faculty collaboration for course development • Sharing information and resources • Development and use of eTextbooks and other electronic material

Technology and Data Issues Committee	
Issues to consider:	• Data collection: access, quality, and cost components • Collaborative licensing of resources and technology • Viability and desirability of common technical capabilities • Sharing information and resources • Use of technological trends for program and services delivery
Faculty and Student Support Services Committee	
Issues to consider:	• Effective practices in faculty and student services • Collaborative, cost-efficient student and faculty support services • Increasing student awareness of programs and services (marketing) • Sharing information and resources

Committee members volunteered to coordinate specific issues and develop recommendations. Many of the members created working groups or advisory groups to bring additional expertise and perspectives to the process.

Each committee met via teleconference and webinar throughout the summer and fall. Through these meetings, committee members defined their issues, developed plans of action, conducted research and investigations, and developed draft recommendations and strategies. The Chairs of each committee met regularly to discuss their progress. Minutes and committee materials are located on the BOG's website (www.flbog.org). The committee materials were then used to develop a draft report under the guidance of the Task Force Chair and the Committee Chairs. The report was subsequently reviewed by each committee member and presented to the Task Force at large for adoption on November 13, 2013.

Florida's Advances in Online Learning

The state of Florida is already a national leader in terms of its breadth of online offerings. Bills passed by the 2013 Legislature, as well as funding and proviso in the 2013 General Appropriations Act, reflect a keen legislative interest in online programs and services.

In Florida, ***online learning*** refers to a course in which at least 80% of the direct instruction is delivered using some form of technology when the student and instructor are separated by time or space, or both (per section 1009.24(17), Florida Statutes (F.S.). A ***Hybrid*** course is one where 50% to 79% of the instruction is delivered using some form of technology, when time or space, or both, separate the student and instructor. ***Traditional*** (and Technology Enhanced) refers to primarily face-to-face instruction utilizing some form of technology for delivery of supplemental course materials for no more than 49% of instruction. In a ***Traditional*** course, classroom attendance is not reduced.

These definitions do not fully capture the nuances of the current online learning environment. Very few students opt for a fully online or a completely face-to-face education, but rather mix and match the courses and modalities that best meet their individual needs. It is very difficult to segregate courses and programs along the lines of the formal definitions.

There are many advantages to online learning. Online learning allows Florida to expand its portfolio of offerings to meet the needs of its diverse constituent base. Increased and easy access to an affordable higher education, regardless of where students may live or their accessibility needs, cannot be overstated as an effective way to create a strong workforce from within Florida's population and to attract businesses that provide high-skill high-wage jobs that drive today's global economy.

In Florida and across the nation, students are increasingly taking advantage of online learning opportunities. In fact, according to the Parthenon report, 40% of Florida's State University System (SUS) and FCS students took at least one course online in 2010-2011. The SUS and FCS currently offer over 700 online undergraduate, graduate, and certificate programs. This breadth and depth of courses provides students with access to courses and programs tailored to differing needs. The table below, based on these data collected by the Parthenon Group, depicts this distribution.

Program Level	SUS Online Offerings	FCS Online Offerings
Other Certificate	0	42
Associate's	0	134
Undergraduate Certificate	29	91
Bachelor's	46	45
Graduate Certificate	126	0
Master's	172	0
Doctorate	16	0
Totals	**389**	**312**

Online learning is not a "silver bullet" to solve all of Florida's education and workforce needs. Experience has shown the cost to develop quality online courses is higher than for traditional courses. Because of this, tuition or fees for online courses are often higher than for traditional courses, although students may gain savings through reduced commuting costs and living at home instead of on campus. A key cost advantage of online learning is that it enables institutions to serve more students than can be accommodated by their current brick and mortar infrastructure.

Recent developments in the Florida online learning environment are highlighted below.

UF Online

The 2013 Legislature passed Section 1001.7065, F.S., which created the preeminent state research universities program and provided that the university meeting all 12 of the academic and research preeminence standards will establish an institute for online learning. The BOG determined at its meeting on June 10, 2013, that UF was the only institution that met all 12 preeminence criteria. On September 27, 2013, the UF Online Comprehensive Business Plan was submitted to and approved by the BOG and is available on the BOG website.

UF Online's business plan expands the offering of high-quality, fully online, four-year baccalaureate degrees at a reduced cost for Florida residents. The enabling legislation requires the university to begin offering these degrees by January 2014. UF Online will begin with seven programs (majors) and increase to 30 by 2018-2019 and 35 by 2019-2020, thereby increasing the total number of online bachelor's degree programs in the state. Tuition for in-state students will be no more than 75% of resident tuition (currently $112 per credit hour). The 10-year forecast based on an enrollment of approximately 24,100 in the 10th year, with a 57%/43% mix of in-state and out-of-state students, will produce a cumulative fund balance of $43.6 million after 10 years, including the $35 million from the Legislature.

UF Online will also implement a Research Center and research programs dedicated to both discovery and application of online learning. It is UF Online's position that "research is never complete without dissemination and application," and it plans to share its research advances nationally.

Complete Florida Degree Program

The 2013 Florida Legislature authorized (CS/CS/SB 1076) for the Complete Florida Degree Program, with the University of West Florida (UWF) serving as the lead institution in coordination with participating institutions. The Complete Florida Degree Program is designed for qualified Floridians to complete a college degree within a reasonable and flexible timeframe using innovative approaches such as online learning, accelerated courses, intentional advising, and coaching. Among programmatic requirements specified by the Legislature are online support services, data collection, identification of workforce needs, targeted occupations of the state, and student recruitment. UWF, in collaboration with its partners, submitted its detailed program plan to the BOG, the State Board of Education (SBE), and the legislative appropriations committee on September 1, 2013. This program plan is available on the UWF website (www.uwf.edu).

Florida Virtual Campus

The 2012 Florida Legislature passed Section 1006.73, F.S., creating FLVC to provide access to online student and library support services, and to serve as a statewide resource and clearinghouse for technology-based public postsecondary education distance learning courses and degree programs. FLVC is tasked to coordinate with the SUS and FCS systems to identify and provide online academic support services and resources when the multi-institutional provision of such services and resources is more cost or operationally effective. FLVC was created by consolidating four entities: the Florida Center for Library Automation, the College Center for Library Automation, the Florida Distance Learning Consortium, and the Florida Center for Advising and Academic Support.

Task Force Findings

In Florida and across the nation, students in increasing numbers are taking advantage of online learning opportunities. The online offerings that students seek come in many forms, targeting different students with varying requirements for success. In addition, online degree programs are

expanding access for adult and nontraditional learners. According to the Parthenon Report, "nationally, online degree programs can meet postsecondary requirements for 80% of job openings in target clusters." These factors all contribute to students increasingly seeking online options. Because of this, institutions are developing effective practices in online postsecondary education, with a focus on high-quality program development, delivery, and support.

To best leverage existing effective practices, knowledge, and experience, the Task Force conducted extensive research and investigation. The following findings emerged from these activities.

Finding #1 – Florida already has vast experience and expertise in online education.

Florida's higher education institutions have made tremendous progress in online learning, and Florida has a vast repertoire of expertise and experience at both the state and institutional levels. Floridians have a wide variety of online programs and courses to select from that fit their diverse needs, skills, and learning style. According to the Parthenon Group, the SUS and FCS currently offer over 700 online programs and 40% of Florida's postsecondary students took at least one course online in 2010-2011. It is now time to capitalize on this expertise to enhance statewide collaboration with the goals to improve access, quality, and cost of online learning for Floridians.

Finding #2 – Floridians do not have a single place to find the needed information to participate in Florida's postsecondary online education opportunities offered statewide.

Most of Florida's postsecondary institutions provide information on their website for the online learner to access individual local programs and courses. This approach requires prospective students to access each institution's website to find needed information. While FLVC provides an online catalog of distance learning courses as well as information on programs and institutions, a more robust statewide approach that provides one-stop access to all online learning information would provide a uniform gateway for students to more easily enter the online segment of Florida's higher education system.

Finding #3 – Florida's higher education students must have a "home" institution in order to meet accreditation standards.

Florida's higher education online students will need to continue having a "home" institution that grants their degree and provides the majority of their student services (e.g., financial aid, academic advisement, etc.). This necessitates a decentralized approach for many back-office functions to support online learning.

Finding #4 – A common statewide Learning Management System (LMS) can provide cost savings for institutions and a consistent interface for students.

A survey administered by the Task Force indicated there is interest by some of Florida's higher education institutions to have a common statewide LMS to provide students with a consistent online learning experience across the state and to achieve cost savings.

Finding #5 – A central repository for effective practices can provide statewide cost efficiencies through shared knowledge.

Florida's higher education institutions want to capitalize on their collective expertise by increasing statewide collaboration to identify effective practices in the areas of course development, faculty services, assessment, MOOCs, and student services. To achieve cost efficiencies, there is a desire to identify and share effective practices, to collect effective models used by institutions throughout Florida and the world, and to make them available in a central statewide repository for all to use.

Finding #6 – To extend online learning, many Florida institutions are offering MOOCs, but few offer credit and there is no centralized statewide effort.

MOOCs are fast becoming a method for students to advance their learning and knowledge. Florida's higher education institutions would like to identify and develop a set of for-credit MOOCs for statewide delivery that incorporate effective practices, competency-based assessments, and support the requirements of CS/HB 7029, which was enacted during the 2013 legislative session.

Finding #7 – An expanded learning resources repository and guidelines for the selection and use of electronic learning materials can reduce the cost of course materials for Florida's online learners.

The postsecondary institutions desire statewide guidelines to make better-informed decisions for adopting eTextbooks and other electronic materials. To increase access and use of approved materials, renewed efforts to support a statewide learning resources repository is needed to provide electronic materials for students and faculty at an affordable cost.

Finding #8 – Florida's higher education institutions currently use national, state, and/or regional-level labor market data to shape the development of online program offerings, but there is a desire to strengthen the alignment of workforce needs with educational opportunities.

The Task Force found a positive alignment between the online programs institutions provide and workforce needs, as well as strong BOG and FCS program approval processes that require the use of workforce data for new academic programs. However, there are opportunities to enhance existing efforts through the sharing of effective practices and by expanding the distribution of labor market statistics and employment data. These efforts could achieve a tighter coupling between workforce needs and online programs.

Finding #9 – Expanded data collection processes are needed to document state-level progress and more accurately measure the development and outcomes of online learning.

Existing state-level data collection efforts do not currently encompass the information needed to track Florida's progress in online learning courses and programs in terms of access, quality, cost, and later employment.

Finding #10 – While Florida institutions do a significant amount of marketing for their online programs, there is little coordinated statewide marketing occurring at this time.

There is online learning marketing of programs occurring at the institutions. FLVC also received some marketing funding in 2013-2014 and UF Online allocated some its funding for outreach efforts. However, there is no coordinated state-level marketing taking place to increase the awareness by Floridians of all the available statewide online educational opportunities available to them.

Task Force Recommendations

The Task Force seriously considered the challenges of simultaneously improving access, quality, and the cost of higher education. The recommendations included in this report reflect the Task Force's common goals to work collaboratively within and across delivery systems to achieve the following:

- Bring expanded online educational offerings of high quality to Florida citizens
- Set measures and goals to greatly increase access to educational opportunities that will lead to employment and support Florida's economy
- Develop common solutions and unduplicated services
- Provide students with more flexible tools to find and enroll in courses they may need across the state

The Task Force's recommendations reflect these common goals.

Recommendation	Description
Recommendation #1	**Expand and Clarify Roles and Responsibilities** To effectively extend Florida's online learning environment, the roles and responsibilities of statewide organizations involved in online learning should be expanded and clarified. Enrollment goals for online learning should be established to guide the state's initiatives.
Recommendation #2	**Implement a Statewide Common Online Marketplace for Students** FLVC should take the lead role in developing and marketing a statewide common online marketplace to facilitate student access to Florida's postsecondary online learning opportunities.
Recommendation #3	**Coordinate a Common LMS (Opt-In)** FLVC should take the lead role in coordinating the development of a plan of action for funding and licensing a hosted or cloud-based LMS for institutions which choose to opt-in to attain statewide cost savings and provide a consistent user experience for students.
Recommendation #4	**Enhance Labor Market and Employment Statistics for University and College Online Program Development and Delivery** The SUS, FCS, and DEO should continue to use enhanced labor market and employment data to facilitate the identification and development of postsecondary online programs that address Florida workforce needs.

Recommendation	Description
Recommendation #5	**Develop and Deliver Statewide For-Credit MOOCs** The BOG, in cooperation with the FCS, should select a lead institution(s) to coordinate the development, delivery, and marketing of for-credit MOOCs that incorporate a quality framework and establish guidelines for competency-based evaluations of non-credit MOOCs.
Recommendation #6	**Enhance and Expand The Online Learning Resources Repository** FLVC, working with a lead institution from the SUS and FCS systems, should enhance and expand its learning resources repository to support the sharing of quality learning objects, eResources, and eTextbooks for faculty and student use.
Recommendation #7	**Provide Statewide Faculty Development Center(s) for Online Learning** The BOG and the FCS should select one or more lead institution(s) to develop and implement statewide faculty and administrator development services for online education, using a train-the-trainer approach.
Recommendation #8	**Create an Effective Practices Repository** FLVC should create an online repository for the collection of and access to proven and effective practices in the areas of online student services, faculty services, faculty collaboration, and workforce needs to support the advancement of online learning statewide.
Recommendation #9	**Enhance Data Collection Efforts for Online Learning** Using their existing statewide data collection procedures, the BOG and FCS should expand their data collection processes and common definitions for online learning to gather data on access, quality, and cost. Additional efforts should include exploring and researching the use of Florida Education and Training Placement Information Program (FETPIP) data to identify workforce and employment trends.

The Task Force's recommendations are assigned to existing organizations that are best suited for implementation, yet suggest linkages among the responsible entities to ensure coordinated statewide efforts. This approach does not expand government, but rather incorporates and infuses enhanced online learning into the educational delivery systems and structures that already exist. Each recommendation that requires additional one-time or recurring legislative funding places the responsibility on the implementing organization(s) for developing a strategy, determining the timing for implementation among its other priorities, and identifying the associated funding mechanism [i.e., either a legislative budget request (LBR) or an alternative funding mechanism].

Several of the recommendations will require additional funding to ensure success, but all of them were designed to meet the Task Force's goals of providing online education in an effective and cost-efficient manner and ensuring the state's workforce and economic development needs and student demands are met across the postsecondary education delivery systems.

TRENDS RELEVANT TO FLORIDA'S ONLINE LEARNING INITIATIVES

The Task Force identified the following demographic, educational, online learning, and technology trends that will continue influencing Florida's higher education online learning initiatives. Many of the trends identified in this section are discussed in detail in the *NMC Horizon Report: 2013 Higher Education Edition* (http://www.nmc.org/pdf/2013-horizon-report-HE.pdf).

Demographic Trends Impacting Online Learning

Online Students

A study on "Online College Students in 2013," (C. B. Aslanian, 2013) indicated that, nationally, 32% of college students were taking at least one online course and 3 million students were enrolled in fully online programs in 2012. Results of this study indicated within 12 months of graduation:

- 44% of these students improved their employment standing
- 45% received salary increases
- 36% experienced promotions

In addition, almost two-thirds of these online students enrolled at an institution within close proximity to their residence. This study further indicated that online business studies were the most popular among undergraduate and graduate students and more individuals achieved a master's degree using an online program than any other degree or certificate. Also, the study indicated that employers do not always make hiring and promotional decisions based on a graduate having in-classroom experience.

The Parthenon Report documented that participation in online education courses at Florida's public postsecondary institutions already surpasses participation nationally; 40% of Florida's students took at least one online course in 2011.

These findings suggest an increased desire by students for convenient access to education and a corresponding need to continue expanding online learning opportunities.

Florida's Economy

While the Florida economy is improving, the need to attract business and industry to the state is critical to providing the high-skill high-wage employment opportunities that drive today's global economy. However, without the presence of a highly skilled and educated workforce, the likelihood of attracting these companies is low. The need for increased access to an affordable higher education cannot be overstated as a means of improving Florida's economy and at the same time creating a strong workforce from within Florida's population.

Currently only 26% of Florida's residents hold a baccalaureate degree and many of these individuals lack the necessary skills for today's technology-driven workplace. Many of Florida's citizens are not served by the existing traditional higher education system because of professional or personal

commitments. As such, they either opt-out of traditional postsecondary education or enroll in an alternative institution that offers the convenience and flexibility they need. Florida's higher education institutions are perfectly poised to implement expanded opportunities for online learning by leveraging the vast experience and expertise they have developed to date.

Educational Trends Impacting Online Learning

Competency-Based Learning

Competency-based education can reduce costs, shorten the time required to graduate, and provide educational institutions with perhaps more effective measures of student learning. In competency-based learning, students progress by proving they have mastered the knowledge and skills (called competencies) required for a particular course, regardless of how long it takes. This is in contrast to traditional models that can and often do measure competency, but are time-based; i.e., courses last about four months and students may advance only after they have put in the seat time. While traditional institutions hold time requirements constant and learning may vary among students, competency-based learning holds learning constant and allows time to vary.

In competency-based learning, students are rewarded for prior knowledge that they demonstrate during pre-tests. Once a student displays a specific competence, based on a faculty member's assessment, the student is free to move onto other areas of the course or, in some cases, test out of the course entirely. Students are able to spend more time focusing on areas of the subject that require more of their attention and spend less time on topics they have already mastered.

For online learning, efforts by Southern New Hampshire University, Northern Arizona University, Kentucky Community and Technical College System, and Western Governors University are challenging the traditional models for education by providing online self-paced learning where a student completes a program as soon as they have demonstrated the required proficiencies. Online learning will continue to provide a rich forum for a competency-based education and is already beginning to challenge the traditional definition of a credit hour.

Open Micro-Credentials and Stackable Certificates

Micro-credentials are indications of proficiency related to specific skills and granted by a recognized authority. Consider a student studying computer science working toward a bachelor's degree. After successfully completing a module on mathematical logic, the student is awarded a "merit badge" recognizing competency in that subject. While there is not yet a central authority for micro-credentials, several organizations are exploring the concept. For example, Brainbench is an online testing service offering certification across hundreds of topic areas. Mozilla, with support from the MacArthur Foundation, is developing a micro-credential registry called OpenBadges. The system uses an electronic "backpack" in which badges issued by a variety of providers are stored. Other organizations experimenting with issuing badges include universities (Carnegie Mellon, Boise State, University of California at Davis, University of Southern California, University of Illinois), publishers (David Wiley, Training Magazine), cultural institutions (Smithsonian, Shedd Aquarium,

Corporation for Public Broadcasting), and nongovernmental organizations (Design for America, SweetWater Foundation, Girl Scouts). Even Gartner, in *Hype Cycle for Education, 2013*, predicts a quick uptake in the use of open micro-credentials, and specifically Mozilla's OpenBadges.

Each new credentialing experiment, such as micro-credentials, challenges the traditional role of universities and colleges in educating Florida's citizens. Higher education institutions may want to continue seeking ways to provide credit that is more granular and may want to consider experimenting with OpenBadges or similar platforms to document students' achievements in online courses.

The Impact of Online Learning on Education

Challenges to the Traditional Accreditation Process

The Southern Association of Colleges and Schools (SACS) accreditation process looks at the institution and the programs offered by that institution in order for a school to receive accreditation. Accreditation teams typically examine content, faculty qualifications, facilities, instructional resources, and student services, among other areas that are specific to that institution. While not easy to achieve, accreditation was simple to understand and assess. As the education systems have increasingly embraced new methods and technologies, accreditation has become much more complex. Attention has focused on competencies replacing credit hours, stackable and micro-credentials replacing degrees, and online learning methods replacing or supplementing the traditional classroom.

As online learning continues to expand and change the way education is delivered through new technology options, higher education institutions will need to investigate and promote new strategies for accreditation. The State of Florida's higher education system will need to continually examine how online learning can be accommodated within the accreditation process.

Low-Cost Degree Programs

While traditional universities and colleges historically provided the majority of degree programs, new entrepreneurial models are emerging that offer degrees at a significantly lower price. Completely online universities – some regionally accredited and some not – offer degree programs students can complete without having to move to a new town, rent a dorm room or apartment, drive to and from campus, or give up an often difficult-to-find job. Students taking online courses often avoid extra lab or other fees.

One method to determine the effectiveness of online programs is to investigate the real-world outcomes (employment in field and salary) for students pursuing online degrees compared to those completing traditional degrees. Data on the cost and effectiveness of fully online programs are important to ensure that students have comparable cost-benefit data for fully online programs compared to traditional learning experiences.

Changing Faculty Role

Faculty members are a critical resource in the education system and play an indispensable role in the development and teaching of online learning courses. However, the faculty's role encompasses not only that of teacher, but also innovator and researcher. This research role enables Florida's universities to receive grant funding and private donations to create new inventions and scientific findings that help grow the economy.

Faculty members, however, are also one of the most costly components of course development and instruction. In some institutions, the traditional role of faculty as advisor, mentor, course designer, instructor, and coach is being disaggregated with the potential of achieving cost savings: advising functions are assigned to professional advisors, online course design is accomplished in cooperation with instructional designers, and coaching is facilitated by staff in a learning success center.

With the advent of multiple new methods for online learning, such as MOOCs and competency-based courses, institutions are further reevaluating the appropriate roles of faculty members and finding new ways to capitalize on their expertise and critical research functions, while also reducing the overall cost of instruction. New technology-based tools are emerging that provide digital methods to monitor student progress, flag students who are experiencing problems, and assist faculty and advisors to intervene with timely and appropriate advice, coaching, and guidance.

With the increase in online learning, faculty members require new skills and approaches to teaching. While the ability to speak before large groups and using presentation software were once key skills, faculty teaching online or blended courses now need to understand such varying subjects as constructivist learning theories, copyright, accessibility, and designing effective online assessments. This changing role necessitates the need to develop and deliver professional development for faculty members.

MOOCs Becoming Mainstream

MOOCs are open online courses that anyone, anywhere can attend. The courses are typically offered at no cost and have massive, worldwide enrollments. At Georgia Tech, a MOOC-delivered Masters of Science in Computer Science degree program (initially subsidized by a corporate partner) will cost students less than $7,000. The same degree delivered traditionally at the school costs out-of-state students around $45,000. While many colleges and universities are experimenting with MOOCs, there are many unanswered questions. Should credit be awarded to students who complete a MOOC? If so, how? Is there a sustainable economic model for MOOCs? How does the use of MOOCs affect an institution's core business processes (e.g., registering, educating, and matriculating students)?

MOOCs have become very popular, with some courses having over 100,000 students enrolled. Instructors presenting MOOCs have become Internet "rock stars" with thousands of people following their social media streams. For students, MOOCs present a low-risk, low-investment way of trying out new areas of study; however, the transferability of MOOCs from one institution to another for credit remains a challenge.

For institutions, MOOCs require new systems, new ways of handling assessments and providing credit, and new strategies for accreditation. Gartner recommends institutions explore granting credit for completion of MOOCs and investigate the use of external testing companies for evaluating student performance.

The American Council on Education has recently recommended five MOOCs for credit, which may provide a starting place for Florida's statewide efforts. Another avenue for MOOC delivery includes providing courses through an external provider.

Open Educational Resources

Open educational resources are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

Open educational resources came to the attention of the public in 2000 when the Massachusetts Institute of Technology published core course content online, making it freely available worldwide. Creative Commons, established in 2001, introduced a set of alternative copyright licenses for resource sharing in 2002. By 2009, there were an estimated 350 million works licensed under Creative Commons. The Open Courseware Consortium, consisting of member institutions from around the world (including Broward College in Florida), provides a repository for open educational resources.

As governments and educational institutions work to reduce the cost of education for students and taxpayers, the adoption of open educational resources is one strategy that has a potential for reducing educational costs for institutions and for the students.

Open educational resources can benefit online education in Florida in a number of positive ways, such as:

- Lowering the cost of course materials for students and the institutions
- Increasing the ability for faculty to customize learning materials to their courses

Options to consider for improving the quality of open educational resources could include:

- Implementing a peer-review process for open educational resources to ensure quality
- Providing incentives to faculty, instructional designers, and institutions for licensing their locally produced instructional resources under Creative Commons
- Investing in existing open educational resources and encouraging their use in Florida institutions
- Developing open educational resources for core curriculum classes in Florida institutions

Technology Trends Impacting Online Learning

Mobile Everything: An Increasingly Mobile-Centric Technology Ecosystem

A 2012 survey by Accenture found a majority of users, across all age groups, connected to the Internet with a mobile device. In addition, many analysts report the growing impact of tablets in higher education, with an expanding ecosystem of education, social, and productivity applications being embraced by students and faculty.

For these reasons, analysts over the past several years have encouraged a "mobile-first" strategy when allocating development resources. Now, instead of a "mobile-first" strategy, analysts are suggesting a "mobile-only" focus since mobile devices are becoming the primary Internet access device across all age groups.

Higher education institutions are likely to continue investing in technologies that support mobile usage while avoiding solutions that are dependent on specific technologies or web browsers in order to prevent creation of a new "digital divide." Adopting the principles of responsive web design and similar technologies to support new device standards is also worthy of consideration.

Games and Gamification

Educators are beginning to learn what the marketing world has known for years: social games can increase engagement and change behavior. One author (Zichermann, 2010) said that, "...in order to compete with games, marketing must become a game." Unlike more passive forms of marketing, games provide increased engagement. Yet, most educational systems do not systematically incorporate game mechanics and gamification in online learning in part due to the high cost of development.

The use of game dynamics in education to increase student engagement, increase skills, and promote institutions and resources is well established. Lee Sheldon, a professor of Communications at Rensselaer Polytechnic Institute, reorganized an undergraduate class into a massive multiplayer game. He replaced grades with "quest points," organized the class into "guilds," and assigned "quests" which students completed to "level up." The "gamification" of the classroom has raised grades in Dr. Sheldon's classes from an average of C to an average of B. Dr. Sheldon reports that attendance in his classes is close to perfect.

Trends in gamification for online learning will require ongoing monitoring and exploration. Of particular importance is its impact on student learning outcomes.

Big Data and Learning Analytics

The cost for data storage continues to decrease and cloud options for the storage of large data sets are now readily available. These trends make it easier to collect and warehouse large data sets that are useful for identifying patterns and trends and for increasing the level of personalized services for students. New tools and methods are required to analyze these data and to discover new and useful

insights. Large data sets will also cause online educators to focus more intently on the need for security and privacy of student data.

The identification of patterns and trends in educational data sets is referred to as learning analytics. Gartner points toward two ways big data sets are being used in education: traditional research and to improve learning outcomes. The *NMC Horizon Report: 2013 Higher Education Edition* also suggests a future where learning analytics from big data sets drive actionable data for all levels of the educational delivery system — from return-on-investment data for policy-makers, to the identification of at-risk students, to assisting students and their parents in selecting an educational pathway.

Data harvested from large educational data sets can also be used to customize online courses. These data, typically captured in learning management systems, can be used to tailor the content to the learner, to provide resources to assist a student in learning, to make decisions on how to adapt the course to improve learning outcomes, or trigger student interventions if needed.

These data sets will create new ways to inform students and parents on how these data can be used for educational decision-making as well as to provide postsecondary institutions with new opportunities for assisting students with their educational decisions, activities, and outcomes.

Interoperable Standards

Students are increasingly attending multiple institutions as they move along their educational pathway. There are two trends in interoperable standards to be monitored as Florida's online learning advances.

- The IMS Global Learning Consortium (formerly Instructional Management System Project) has published a series of standards for educational metadata, content portability, ePortfolio, etc. The organization's membership includes learning management system developers, eResource publishers, school districts (including the Florida Virtual School and the Escambia County School Board), universities, and colleges.
- The U.S. Department of Education has identified three interoperability standards used in education: Sharable Content Object Reference Model (SCORM), Schools Interoperability Framework (SIF), and the IMS. No single standard has yet emerged.

The development of educational information interchange standards will foster the exchange of data among Florida institutions and with others nationally.

Common Authentication Standards

Common authentication defines a protocol or standard for securely passing identity information between institutions and service providers. Authentication standards facilitate access to distributed resources using the institution's user credentials.

As students begin to take online instruction at multiple postsecondary institutions, they often have to maintain multiple credentials for access to each institution's learning management system, library

system, and other student services. Online learning and collaborative delivery of student services could be streamlined if institutions adopt and use a standard federated identity management architecture. Current technologies in use for federated identity management in higher education include the following:

- Shibboleth is based on the Security Assertion Markup Language standard. Systems developed in a Shibboleth environment are either identity providers or service providers. The identity provider authenticates the user and provides confirmation to the service provider. A single identity provider can authenticate users for many service providers, and a single service provider can receive authentication from many identity providers.
- Central Authentication Service (CAS) is a single sign-on protocol for the web. Its purpose is to permit users to access multiple applications while providing their credentials (such as userid and password) only once. It also allows web applications to authenticate users without gaining access to a user's security credentials, such as a password.
- OpenID is a web authentication system used by some of the Internet industry leaders (including Google, Facebook, Yahoo!, Microsoft, Telecom Italia, etc.). Using OpenID, a user can authenticate to sites that support the standard. Some universities are looking at OpenID as a "bring your own" digital identity for their students.

As Florida's higher education seeks to expand common access to online learning opportunities, authentication protocols will need to be established for use by all higher education institutions.

Adaptive Learning Software

Adaptive learning systems display to students pre-developed sequences of content, explanations, and assessments and track performance at each step as they work their way through the course material. Students can individually choose the path and sequence of tasks within pre-defined limits. The resulting data are captured and used to customize the delivery of content and assessments and the determination of content mastery, resulting in individualized learning pathways. Although adaptive learning systems are far from perfect, they are rapidly evolving and moving toward creating a learning environment that is highly effective and efficient.

RECOMMENDATION #1 – EXPAND AND CLARIFY ROLES AND RESPONSIBILITIES

To effectively extend Florida's online learning environment, the roles and responsibilities of statewide organizations involved in online learning should be expanded and clarified. Enrollment goals for online learning should be established to guide the state's initiatives.

Task Force Charge

The Task Force was charged to "recommend strategies for better coordinating services and online programs in the SUS and FCS and, to the extent feasible, across other delivery systems." To support this charge, the Task Force determined that clear roles and responsibilities for implementing each recommendation should be determined and submitted to the BOG and, where appropriate, the FCS and the Florida Legislature for consideration.

Current State and Research

There are multiple entities involved in Florida's postsecondary online learning efforts that will have new responsibilities for implementing proposed Task Force recommendations. These groups should work collaboratively to ensure the most effective use of state funding for online learning.

Florida Virtual Campus

On July 1, 2012, FLVC was created (Section 1006.73, F.S.) by merging four organizations with long histories of service to Florida's public universities and colleges to form an exciting new academic support organization. The Chancellors of the SUS and the FCS share joint oversight of FLVC. A Board of Directors, composed of college and university vice presidents appointed by the Chancellors as well as officers from FLVC's advisory groups, assists the Chancellors in their governance role. FLVC receives essential advice on the development and delivery of its products and services from two advisory groups:

- The Members Council on Library Services provides advice on the services FLVC provides to the users and staff of each public university and college library in Florida. It is composed of one presidentially appointed representative from each institution.
- The Members Council on Distance Learning and Student Services provides advice on the distance learning, academic advising, and student services provided by FLVC. It is composed of one presidentially appointed representative from each institution.

FLVC is jointly funded through the BOG and the SBE. Recurring funding is provided for FLVC's core statewide services, such as library services, distance learning, and student services. In 2013-2014, non-recurring funding was provided for initiatives such as implementing a common web infrastructure, modernizing the distance learning catalog, statewide marketing, among other activities.

UF Online

The 2013 Legislature enacted Senate Bill 1076 (Chapter 2013-27, F.S.), thereby creating an online institute at a preeminent university, UF Online, as well as providing funding for implementation and support. The law requires UF Online to begin offering fully online, four-year baccalaureate degrees by January 2014. Part of UF Online will include research in all aspects of online teaching, learning, and technology, consistent with the delivery of "high-quality" online programs. The spirit of the assignment and the commitment of the University also require an associated research effort in all aspects of the online teaching, learning, and technology triangle. UF will begin this effort in academic year 2014-2015 with the establishment of a Research Center (as part of UF Online) with appropriate staffing.

UF Online received funding from the Florida Legislature. This funding is being used to develop fully online programs, market the courses nationally and internationally, provide student services for online learners, and support research in online learning and teaching, among other activities.

BOG Office of Institutional Research and FCS Office of Research and Analytics

The State of Florida has been at the nation's forefront in its data collection for public higher education. Beginning in the early 1990s, Florida's universities and colleges began defining ways to collect student, staff, and financial information from each institution in order to examine trends and provide information for statewide decision making. Through the years, the BOG and FCS have established formal processes, in collaboration with the universities and colleges, to develop common definitions, data elements, and a standard process to collect these data and to store them in statewide databases. These data sets are used to generate reports and respond to ad hoc requests about Florida's public postsecondary education system.

BOG's Office of Institutional Research responds to information requests regarding Florida's twelve public universities, provides data resources for public and internal uses, conducts research and analysis of issues that help guide policy decisions, and provides data to support Board staff. The staff serves as liaisons between those who directly work with the universities to update statewide data resources and the Board policy staff to facilitate sound policy decisions based on relevant and accurate data. Similarly, the FCS' Office of Research and Analytics is responsible for data, reports, and external research involving Florida's state colleges.

Complete Florida Degree Program

In Florida, 2.2 million students have stopped out of college. UWF is leading a legislatively funded initiative intended to answer the challenge of how to get adults back to school to complete a college degree. Through fully online, competency-based learning, accelerated courses, and prior learning assessments, all areas of this program are tailored to workforce-related degrees. Using a concierge-based approach to student services, the Complete Florida Degree Program will facilitate retention and degrees earned. Partners currently include the University of West Florida, Florida International University, University of Central Florida, Florida State College at Jacksonville, Indian River State

College, St. Petersburg State College, Florida Gulf Coast University, and private institutions still to be determined.

Finish Up, Florida!

The Finish Up, Florida! program was funded by the Lumina Foundation for Education and is designed to reach out to students who left the FCS without earning a degree and to encourage them to return to finish. Finish Up, Florida! reflects the efforts of a statewide collaboration led by the Foundation for Florida's Community Colleges in partnership with the Department of Education (DOE), the Division of Florida Colleges, and the former Florida Center for Advising and Academic Support (the functions of which now reside under FLVC).

Designated Lead Institutions

The BOG and FCS have a long history of selecting a lead or host institution for statewide initiatives for postsecondary education. Examples include the Florida Center for Library Automation, the University Press of Florida, FLVC, the Florida Institute of Oceanography, and the Complete Florida Degree Program. The lead or host institution is usually selected through a competitive procurement process or because of its expertise or available resources. An oversight board representing the SUS and FCS systems, as appropriate, typically guides ongoing efforts.

Florida's Public Higher Education Institutions

Florida's universities and colleges offer thousands of online courses to meet student needs and market them within their service areas. There is significant expertise and experience within Florida's postsecondary institutions that should be leveraged for statewide efforts.

Need

Florida already has vast experience and expertise in online education. Florida's higher education institutions have made tremendous progress in online learning, and Florida has a vast repertoire of expertise and experience at both the state and institutional levels. According to the Parthenon Group, the SUS and FCS currently offer over 700 online programs and 40% of Florida's postsecondary students took at least one course online in 2010-2011.

A variety of approaches are taken to market online programs. The institutions market their online programs; UF Online dedicated national and international outreach dollars for its new online degree program from its state allocation; non-recurring funding for marketing was also provided to FLVC in FY 2013-2014.

It is now time to capitalize on this expertise to enhance statewide collaboration with the goals to improve access, quality, and cost of online learning for Floridians, to set specific goals for Florida's online learning enrollments, and to enhance the statewide marketing efforts for specific initiatives.

Implementation Steps

Because there is a multitude of entities involved in online education, clarity on each group's proposed role and responsibility is required in order to achieve the goals put forward by the Task Force. Collaboration among these entities is detailed to ensure statewide coordination and to result in a cost-effective online learning delivery system in Florida.

The following steps are required to implement this recommendation.

Step 1 – BOG should review and then define and adjust the roles and responsibilities for implementing Task Force recommendations.

The BOG, in collaboration with the FCS, should review the Task Force's proposed assignments for each recommendation, make any desired adjustments, assign the responsibilities as necessary, and seek statutory changes (if needed). The BOG and the FCS should also set online learning enrollment goals for the next five years.

Some Task Force recommendations will require one-time and/or recurring legislative funding for implementation and to market them to Floridians; others will not. The following matrix outlines the responsibilities as proposed by the Task Force.

Responsible Party	Proposed Role	Action	Task Force Recommendation and Page Number
BOG, in collaboration with the FCS	The BOG and the FCS should continue to set state policies and regulations for online learning. The Task Force also recommends the BOG, in cooperation with the FCS, take the lead role in coordinating system-wide academic initiatives (such as MOOCs and faculty development in online learning) as well as setting online learning enrollment goals to guide the state's efforts.	Expand and Clarify Roles and Responsibilities Select a Lead Institution(s) for MOOCs (Competitive Procurement) Select a Lead Institution(s) for Faculty Development in Online Learning	Recommendation #1, page 18 Recommendation #5, page 49 Recommendation #7, page 64
BOG and FCS Data Collection Units	The BOG Office of Institutional Research and the FCS Office of Research and Analytics units should take the lead role in coordinating the collection of consistent data to measure online courses and degree programs in terms of cost, quality, and access. In collaboration with the UF Online Research Center, the BOG and FCS data collection units should research the use of FETPIP employment data for identifying trends in online learning.	Enhance Data Collection Efforts for Online Learning	Recommendation #9, page 81

Responsible Party	Proposed Role	Action	Task Force Recommendation and Page Number
FLVC	The statutory language that created FLVC delineated its role as providing online academic support services and resources. Therefore, the Task Force recommends FLVC should focus on system-wide academic and student support initiatives, such as coordinating licensing for a statewide LMS. Marketing funding should be provided to FLVC for new initiatives that are assigned to the organization.	Coordinate a Common LMS (Opt-In) Implement a Statewide Common Online Marketplace for Students Enhance and Expand The Online Learning Resources Repository Create An Effective Practices Repository	Recommendation #3, page 38 Recommendation #2, page 31 Recommendation #6, page 57 Recommendation #8, page 69
Lead Institution(s)	The BOG, in collaboration with the FCS, should issue a competitive procurement to select a lead institution(s) for statewide efforts such as for-credit MOOCs. The BOG and the FCS should jointly issue a competitive procurement for a faculty development center. Marketing funding should be provided to the lead institutions(s) for new statewide initiatives.	Coordinate Statewide Delivery of For-Credit MOOCs Provide Statewide Faculty Development Center(s) for Online Learning	Recommendation #5, page 49 Recommendation #7, page 64
Individual Institutions	Florida's universities and colleges must continue to deliver and market quality online programs and courses to address the educational needs of Florida's citizens.		

Responsible Party	Proposed Role	Action	Task Force Recommendation and Page Number
UF Online	The Task Force recommends the UF Online Research Center take the lead role in coordinating ongoing statewide postsecondary research in the area of online learning through the creation of an Online Learning Research Advisory Committee. After research is completed, the Task Force recommends the Online Learning Research Advisory Committee provide this information to FLVC for cataloging, dissemination, and placement in its central repository.	Create a Statewide Online Learning Research Advisory Committee	Recommendation #1, page 18
Complete Florida Degree Program **Finish Up, Florida!**	Lessons learned and effective practices identified by the Complete Florida Degree program initiative and the Finish Up, Florida! program should be shared statewide as part of the development of the common online marketplace, as well as through the proposed FLVC repository for effective practices.	Provide lessons learned to the SUS, FCS, and FLVC	Recommendation #2, page 31 Recommendation #8, page 69
DEO	DEO, in collaboration with the BOG and FCS, should continue to provide enhanced labor market and employment data to Florida's postsecondary institutions and to enhance their use in program decision making.	Provide Enhanced Labor Market Statistics for Online Program Decisions	Recommendation #4, page 44

Step 2 - UF Online, in collaboration with the BOG, should plan, configure, and implement an online learning research advisory committee.

Many of Florida's postsecondary institutions conduct research in online education. As online learning expands in Florida, statewide collaboration is desired to focus research efforts and to more broadly share research results. Toward this effort, the UF Online Research Center, in collaboration with the BOG, should define the roles, accountabilities, and procedures for a statewide Online Learning Research Advisory Committee to facilitate research in online learning and to share research outcomes.

Once the strategy and plan has been determined, UF Online and the BOG should identify the members of the Advisory Committee. This Committee should consist of representative membership from the SUS and FCS as well as a liaison from FLVC. This Committee will identify needed statewide online learning research, determine which institution should take the lead role in conducting the research, and review the research results. In addition, the Committee should be charged with bringing the needs of the individual institutions to the forefront. The focus will be on making state-level recommendations and setting statewide research goals. The Task Force has already identified a number of areas where research and input is desired to advance Florida's postsecondary online learning efforts.

As research is completed or effective practices identified, such output should be provided to FLVC and housed in its effective practices repository. A monthly publication (electronic newsletter) could also be distributed by FLVC to the institutions, listing new additions to the repository as well as occasional articles on recent research and effective practices.

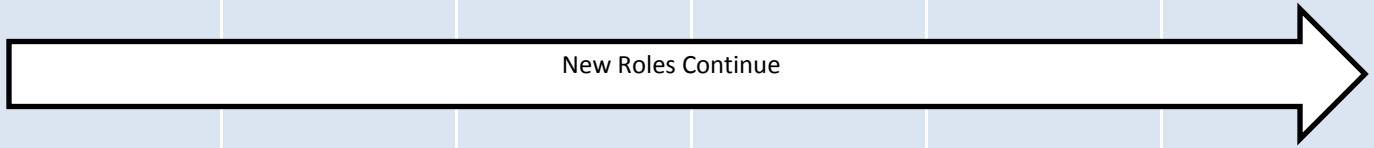
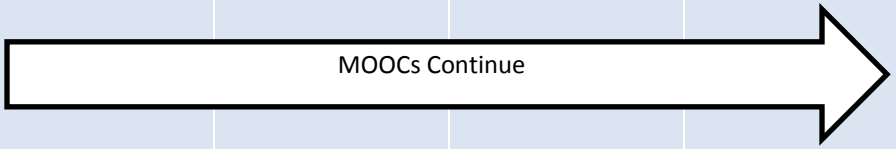
Cost Benefit

Recommendation #1 assigns the Task Force recommendations to the existing organizations that are best suited for implementation. This approach does not expand government, but rather incorporates and infuses enhanced online learning into the educational delivery systems and structures that already exists. Each recommendation that requires additional funding places the responsibility on the implementing organization(s) for developing a strategy, determining the timing for implementation among its other priorities, identifying the necessary one-time and/or recurring costs, and determining the best funding mechanism (i.e., LBR or an alternative funding mechanism).

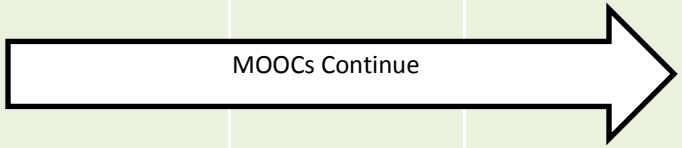
Recommendation Timeline

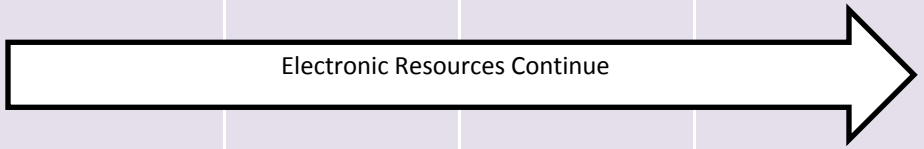
The following timeline is a suggested sequence of events for implementing the Task Force recommendations. The entities charged with new responsibilities should be given the flexibility to sequence these events based on adequacy of funding, other priorities, and guidance provided by their individual governing boards.

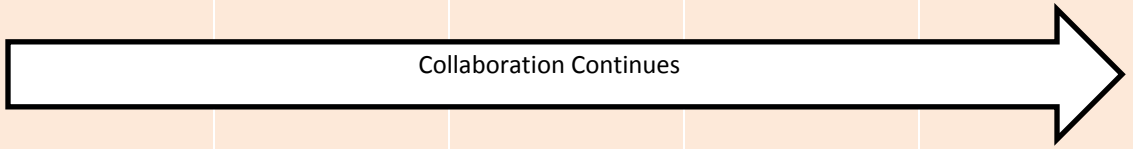
Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
BOG (in collaboration with FCS)							
Recommendation #1 - Expand and Clarify Roles and Responsibilities	Step 1 – BOG should review and then define and adjust the roles and responsibilities for implementing Task Force recommendations.						
Recommendation #5 - Develop and Deliver Statewide For-Credit MOOCs	Step 1 – The BOG should approve an amendment to its LBR to submit to the 2014 Legislature for initial startup funding for statewide coordination and a pilot program of for-credit MOOCs.	Step 2 – The BOG should select a lead institution(s) using a competitive procurement process. Step 4 - The BOG, in collaboration with the lead institution(s), should develop the draft regulations required for a) proposed tuition that students should pay to receive credit for MOOCs and b) the process for awarding students credit for MOOCs.	Step 5 – The BOG should seek 2015 legislative funding (i.e., one-time and/or recurring) for full statewide implementation of MOOCs.				

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
BOG (in collaboration with FCS)							
Recommendation #7 - Provide Statewide Faculty Development Center(s) for Online Learning	Step 1 – The BOG and the FCS should jointly select a lead institution(s) using a competitive procurement process.		Step 3 – The BOG and the FCS should seek 2015 legislative funding (i.e., one-time and/or recurring) for the statewide faculty development for online learning initiative.	Faculty Development Continues →			
	Jan-June 2014	**July-Dec 2014**	**Jan-June 2015**	**July-Dec 2015**	**Jan-Jun 2016**	**July-Dec 2016**	**Jan-Jun 2017**
BOG and FCS Data Collection Units							
Recommendation #9 - Enhance Data Collection Efforts for Online Learning	Step 1 – The BOG's Office of Institutional Research and the FCS's Office of Research and Analytics should establish a plan for extending data collection efforts for online learning.	Step 2 – The BOG and FCS data collection units should establish metrics, create definitions, and identify data elements to enhance data collection for online learning. Step 3 – The BOG and FCS data units should establish indicators to allow for separate analysis for fully online programs.	Step 4 – The BOG and FCS data collection units should analyze FETPIP data to assess if online education has an impact on postsecondary employment and wages.	Data Collection Continues →			

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
Lead Institution(s)							
Recommendation #5 - Develop and Deliver Statewide For-Credit MOOCs		Step 3 – In cooperation with the BOG, the lead institution(s) should conduct the pilot program and develop a detailed strategy and LBR for the delivery of MOOCs statewide.		Step 6 – The lead institution(s) should begin implementing the statewide MOOC strategy.			
Recommendation #7 - Provide Statewide Faculty Development Center(s) for Online Learning		Step 2 – In cooperation with the BOG and the FCS, the lead institution(s) should develop a detailed strategy and LBR for the delivery of statewide professional development services.		Step 4 – The lead institution should begin providing statewide services for faculty and administrator development for online learning using a train-the-trainer approach. .			

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
FLVC							
Recommendation #2 - Implement a Statewide Common Online Marketplace for Students	Step 1 – FLVC should create a working group to develop a strategy, plan of action, marketing strategy, and cost for the common online marketplace. Step 2 – FLVC should prepare an LBR for the common marketplace for consideration by the 2015 Legislature.		Step 3 – FLVC should work with the SUS and FCS CIOs to develop data exchange, authentication, and security strategies for the common online marketplace.	Step 4 – FLVC should begin implementation of the common marketplace.			
Recommendation #3 - Coordinate a Common LMS (Opt-In)		Step 1 – FLVC should develop a strategy for a common LMS using an opt-in approach.	Step 2 – FLVC should align the proposed strategy with statewide leadership.	Step 3 – FLVC should begin the negotiations and licensing processes.	Step 4 – FLVC should launch the pilot implementation.	Step 5 – FLVC should continue implementation with remaining institutions.	Step 6 – FLVC should assess the effort and determine next steps.
Recommendation #6 - Enhance and Expand The Online Learning Resources Repository	Step 1 – FLVC should establish a working group under its two Members Councils to guide statewide electronic resource efforts.		Step 2 – FLVC should update Florida's learning resources repository to increase its accessibility and use.				

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
FLVC							
Recommendation #8 - Create An Effective Practices Repository	Step 1 – FLVC should create working groups or assign tasks to existing groups to identify effective practices. Step 2 – FLVC should create an effective practices repository.	Step 3 – FLVC and its Board of Directors should identify methods to increase student services participation in the discussion of online learning.					
	Jan-June 2014	**July-Dec 2014**	**Jan-June 2015**	**July-Dec 2015**	**Jan-Jun 2016**	**July-Dec 2016**	**Jan-Jun 2017**
UF Online							
Part of Recommendation #1 - Create an Online Learning Research Advisory Committee		Step 2 – UF Online, in collaboration with the BOG, should plan, configure, and implement an online learning research advisory committee.					
	Jan-June 2014	**July-Dec 2014**	**Jan-June 2015**	**July-Dec 2015**	**Jan-Jun 2016**	**July-Dec 2016**	**Jan-Jun 2017**
DEO							
Recommendation #4 - Enhance Labor Market Statistics for University and College Online Program Development and Delivery	Step 1 – DEO, in collaboration with the BOG and FCS, should provide enhanced labor market data semiannually tailored to Florida's postsecondary needs.	Step 2 – DEO, with the BOG and FCS, should pilot the use of enhanced labor statistics and adjust as needed.					

RECOMMENDATION #2 – IMPLEMENT A STATEWIDE COMMON ONLINE MARKETPLACE FOR STUDENTS

FLVC should take the lead role in developing and marketing a statewide common online marketplace to facilitate student access to Florida's postsecondary online learning opportunities.

Task Force Charge

The Task Force was charged with exploring "collaborative licensing of resources and technology" and "viability and desirability of common technical capabilities." The Task Force defined this topic as exploring the technical capabilities needed to provide online learning to Florida's citizens given the state's multi-institutional environment. The Task Force explored implementing a common Enterprise Resource Planning (ERP) system for all SUS and FCS institutions to perform administrative functions, such as financial aid, student registration, human resources, etc. A common ERP for the state's higher education system was dropped from consideration during Task Force deliberations because of the high cost, complexities, and the varying needs of each institution. However, student support technologies for the common marketplace were considered.

The Task Force was also charged with exploring "raising awareness of online courses and programs to different segments of the market (marketing)." The Task Force examined ways an effective marketing strategy and campaign could increase awareness of specific statewide programs and services for prospective students. The focus of these efforts was on supporting statewide online learning efforts, not on a specific institution's programs.

Current State and Research

Florida continues to need a highly skilled, educated workforce to meet employment needs and to attract business and industry to the state. There are currently 271,126 (seasonally adjusted) unfilled positions in the State of Florida alone that need qualified workers, while 11,462,000 Floridians remain unemployed (August 2013). The need for increased access to affordable higher education is critical for improving Florida's economy and at the same time creating a strong workforce from within Florida's population.

Some of Florida's citizens are not fully served by the existing higher education system due to professional or personal commitments. As such, they either opt out of a traditional postsecondary experience or enroll in an alternative institution that offers the needed convenience and flexibility. Prospective online students are also faced with actual or perceived barriers when entering or participating in Florida's postsecondary education system. For example, students must first identify which postsecondary institution offers the desired program of study. The student may hear about local offerings through a television commercial or via the statewide FLVC common catalog of

distance learning courses. Unfortunately, students may have to visit a number of institutional websites before finding the online program of interest.

After the desired online program is located, students must complete an application for each institution they are interested in attending, meet that institution's admission requirements, and enroll in that institution before they are able to take an online course. In most cases, they must also wait for a standard semester to begin before starting their online education experience. Then, if the student wants to take an online course from another institution, a detailed transient student application process must be completed, routed, and approved. Once accepted, students face an online learning experience that is different from the one they are accustomed to at their home institution.

Florida's post-secondary model works well for the traditional student who proceeds straight from high school to a postsecondary institution, but it does not always support the needs of students who do not follow a traditional educational pathway or adult learners who are trying to balance work and a continuing education. Florida's decentralized process also does not effectively support the traditional high school student when trying to make informed postsecondary education decisions.

On the other hand, Florida's postsecondary institutions must comply with SACS accreditation requirements, which state, "At least 25% of the credit hours required for the degree are earned through instruction offered by the institution awarding the degree" (Comprehensive Standard 3.5.2). This standard ultimately requires a student to have a "home" institution that grants the degree and coordinates the educational process. The home institution provides all the frontline (e.g., online student portals) and back-office functions (e.g., financial aid) needed by that student to navigate through the educational experience. This decentralized approach causes a student to experience differing online learning environments and institutional procedures when taking courses from multiple institutions.

There is some coordination and collaboration for online learning occurring in the State of Florida through FLVC. The Florida Legislature formed FLVC in 2012 (Section 1006.73 F.S.) to provide access to online student and library support services and to serve as a statewide resource and repository for technology-based public postsecondary education online learning courses and degree programs. FLVC provides some services for the online student, such as:

- Serves as a repository for all online courses available in the SUS and FCS systems (i.e., the current online catalog of all courses offered by Florida postsecondary institutions that charge a distance learning fee)
- Provides students with information to assist with understanding the transferability of courses among Florida's universities and colleges
- Supports an online advising tool for academic planning for the transferability of a student's courses
- Facilitates students taking a course at another institution through the transient student application process

- Provides online access to university and college library resources, as well as statewide electronic resources purchased on behalf of the institutions
- Provides links to postsecondary admissions and student services by redirecting students to existing university and college websites

FLVC was provided legislative funding in FY 2013-2014 to market specific statewide online learning initiatives, but these efforts are just beginning. In addition, Florida's postsecondary institutions devote marketing efforts for their individual online programs, either as part of the overall institution or within a specific department. UF Online was provided funding for its development and implementation, and devoted part of those funds to market its programs in the State of Florida, within the United States, and internationally. Other states, such as The State University of New York Learning Network Marketing Services and GeorgiaOnMyLine.com provide more coordinated marketing efforts and online tools to help guide students in their educational careers. Online competition is increasing from both for-profit and nonprofit institutions within Florida and from commercial and private entities in other states; therefore, there is an increasing need to market Florida's online degree programs and courses.

Florida, under the guidance of FLVC, has the opportunity to create a new model for education to solve Florida's critical workforce and education needs and to establish a statewide marketing campaign to support this effort. Through the creation of a common online marketplace, Florida can leverage the existing capabilities and innovations of the state's universities and colleges while providing a student with a one-stop solution for ongoing education and to facilitate admission based on the institution's requirements.

As the common marketplace develops, the need may arise for FLVC to have enhanced system capabilities in order to process student inquiries and other functions related to students, the marketplace, and the individual institutions that offer the respective online programs and which will award student credit.

For the common marketplace, FLVC will coordinate statewide efforts to guide students to the individual institutions that opt into and support this common statewide approach, but FLVC will not award credit or degrees, which will remain the responsibility of the respective institutions.

The State of Florida's higher education system is well situated to implement this common online marketplace approach. The Florida Articulation Coordinating Committee and the related common course numbering system facilitate the transferability of courses from one institution to the next. In addition, FLVC provides a statewide organization that crosses the SUS and FCS sectors to coordinate statewide online learning initiatives. The common online marketplace efforts could also be expedited through leveraging the efforts of UWF's Complete Florida Degree Program and the FCS Finish Up, Florida! initiative. These factors, coupled with Florida's already advanced online learning expertise and experience at the 12 universities and 28 colleges, create an environment where innovation and advances can occur.

A common online marketplace will enable the state to target marketing to Florida residents to increase degree production and provide a pipeline of highly prepared workers. It can also serve as a

model for innovation, creating new methods for program delivery including online competency-based courses, MOOCs, and other new learning initiatives that give students recognition for demonstrated knowledge and abilities. A common online marketplace will also give students the opportunity to access public higher education opportunities across the state, even if the desired program is offered by an institution but is not in close proximity to their home.

Need

Other than FLVC's course catalog of online programs, some services for students, and links to each institution, Floridians do not have a single place to find all the needed information to participate in Florida's statewide postsecondary online education opportunities. Most of Florida's postsecondary institutions provide information on their website for the online learner to access individual local programs and courses. This approach requires prospective students to access each institution's website to find needed information.

In this new virtual world, it is critical to provide real-time access to educational opportunities for all Florida citizens, regardless of their geographical location. A statewide approach that provides students with one-stop access to online learning and other information will provide a uniform gateway for students to enter the online segment of Florida's higher education system. While students will still need to be admitted into an institution and meet the applicable admissions requirements, providing a one-stop place for Floridians will connect prospective students with an appropriate educational choice and applicable statewide student services. Developing a corresponding marketing campaign will increase the level of awareness by prospective students regarding the opportunities available to them.

Implementation Steps

FLVC should take the lead role in developing and promoting a common online marketplace to facilitate student access to Florida's postsecondary online learning opportunities. This marketplace should include the services that students require to support them through this process. One-time and/or recurring legislative funding (or an alternative funding mechanism) will be required for this statewide coordination role and for marketing purposes.

As envisioned by the Task Force, the common online marketplace will support functions such as:

- Information about online degree programs for students and advisors
- Streamlined access to the institution offering the desired online program as well as appropriate contact information
- The new and updated common course catalog of online courses
- Streamlined support for students who want to take an online course at an institution other than their home institution
- Guidance for online students throughout the financial aid process
- Support for a student's transfer and articulation between institutions
- Assistance for students with the college admissions process

- Provide students with support for accessing degrees and planning their educational career
- Statewide student services as applicable to online learners

As such, the common marketplace will provide the information and services needed by students to access the online segment of Florida's higher education system through a uniform gateway and to seek admission and continue their education. The common online marketplace will not replace the institution's critical student services or systems, but rather provide an overlay that communicates with each institution's back-office functions. FLVC should also coordinate Florida's marketing efforts to promote the common marketplace to facilitate matching postsecondary education opportunities with online learners and degree seekers.

The following steps are required to implement this recommendation.

Step 1 - FLVC should create a working group to develop a strategy, plan of action, marketing strategy, and cost for the common online marketplace.

The current FLVC website was originally created through a merger of four similar statewide entities, each with its own web presence. This website was rapidly established by using existing technology tools in order to meet legislatively required deadlines. In spring 2013, FLVC selected a web portal tool (Liferay) to serve as its common web platform. FLVC is currently in the process of implementing this tool, with an initial release scheduled for the spring of 2014. FLVC is also in the process of updating the online catalog that lists all the online courses offered by Florida's postsecondary institutions that charge a distance-learning fee. As part of its immediate plans, FLVC also intends to create a student-centric portion of its website and align its current services according to the online learner's needs.

Next, FLVC should work with its Board of Directors to configure a working group to guide the common marketplace effort. This group should be comprised of a wide range of individuals from the offices of online learning, financial aid, student services, academic programs, and Chief Information Officers (CIOs). The process for reviewing and approving the strategy and plan of action should be defined and should include multiple statewide leadership groups, as follows:

- SUS – Board of Governors Office, Council of Academic Vice Presidents, Council of Student Affairs, Council for Administrative and Financial Affairs, and CIO Council
- FCS – Division of Florida Colleges, Council for Instructional Affairs, Council of Business Affairs, and Council of Student Affairs

FLVC's Board of Directors should charter this working group to define the functions and features of the common online marketplace. This group should conduct the following activities:

- Develop a working definition for the common online marketplace
- Establish its service boundaries (e.g., services to be provided by FLVC, the institutions, or both)
- Develop an implementation strategy
- Determine what technologies may be needed for student services

- Create a marketing strategy
- Identify statewide costs
- Determine initial and long-term funding mechanisms

This group should also closely examine the efforts of UWF's Complete Florida Degree Program and the FCS Finish Up, Florida! initiative for successes and lessons learned. Cloud-based solutions are preferred for the common online marketplace to avoid the creation of a large technical infrastructure.

The working group may also identify a need for FLVC to have enhanced system capabilities in order to process student inquiries and other functions related to students, the marketplace, and the individual institutions that offer the respective online programs and which will award student credit. FLVC, in collaboration with the institutions, BOG, and FCS, will need to include such system requirements in its planning process along with the identified benefits and timeline to plan, develop, and implement the required functionality.

Step 2 - FLVC should prepare an LBR for the common marketplace for consideration by the 2015 Legislature.

FLVC should seek input on the common online marketplace strategy and funding mechanism(s) with key statewide leadership groups in Florida to ensure alignment with institutional and statewide needs. After approval by FLVC's Board of Directors, the budget request should be submitted to the BOG and the SBE for formal approval and inclusion in their respective LBRs.

Step 3 - FLVC should work with the SUS and FCS CIOs to develop data exchange, authentication, and security strategies for the common online marketplace.

FLVC should begin working with the SUS and FCS CIOs to define data exchange, authentication, and security strategies for the common online marketplace.

- ***Data Exchange Protocols*** - Because the common online marketplace will communicate with the institutions' existing information systems, well-developed data exchange, authentication, and security strategies will be required.
- ***Student Authentication*** - The common online marketplace will require implementation of common, standardized methods of system authentication (logins and passwords). Common authentication will enable students in any participating institution to log into permitted resources at all other participating institutions using their home institution credentials.
- ***Data Security*** - The exchange of data among and between institutions will also require increased attention to information security. As systems are interconnected, and as data are transported, there is an increased likelihood of vulnerabilities that could compromise a student's confidential information.

See Section 2 – Trends for more information on common authentication standards.

Step 4 - FLVC should begin implementation of the common marketplace.

Assuming state-level approvals are obtained (Step 3) and legislative funding is received or an alternative funding strategy is identified, FLVC should begin implementing and marketing the common online marketplace. Initially, FLVC should conduct a pilot project with a few universities and colleges prior to expansion to all institutions that opt-in to this approach.

Cost Benefit

This initiative will require startup funding for planning, to modernize and develop needed student services within the marketplace, and for the hosted or cloud-based technologies. Funding will also be required for marketing purposes and for establishing IT data protocols, authentication, and security strategies. The common online marketplace approach could be sustained over time through increased student enrollments, state appropriations, and grant funding. The benefits of this initiative include an anticipated increase in enrollment in Florida's online learning programs by providing Floridians easier access to the vast array of existing postsecondary education opportunities. State-level funding to market the common marketplace will benefit all the institutions by promoting and extending their local services on a statewide basis.

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
FLVC	Step 1 – FLVC should create a working group to develop a strategy, plan of action, marketing strategy, and cost for the common online marketplace. Step 2 – FLVC should prepare an LBR for the common marketplace for consideration by the 2015 Legislature.		Step 3 – FLVC should work with the SUS and FCS CIOs to develop data exchange, authentication, and security strategies for the common online marketplace.	Step 4 – FLVC should begin implementation of the common marketplace.	Common Marketplace Continues		

RECOMMENDATION #3 – COORDINATE A COMMON LMS (OPT-IN)

FLVC should take the lead role in coordinating the development of a plan of action for funding and licensing a hosted or cloud-based LMS for institutions that choose to opt-in to attain statewide cost savings and provide a consistent user experience for students.

Task Force Charge

The Task Force was charged with exploring the "viability and desirability of common technical capabilities," as well as "collaborative licensing of resources and technology." Although Florida's universities and colleges currently possess significant technical capabilities with regard to eLearning and web-based services, those capabilities vary in depth and type. The Task Force identified a common LMS as a way to conduct collaborative licensing to reduce costs and to make course delivery more seamless across the postsecondary education delivery systems.

Current State

Florida's universities and colleges vary in their technical capabilities in the areas of eLearning and web-based services. Recent efforts to connect Florida's public postsecondary institutions to complete the transient student admissions process illustrated how the varying technical infrastructures and business processes make it difficult to connect to multiple institutional systems. This mixed environment makes it challenging to implement statewide collaborative initiatives that could better serve Florida citizens.

On the other hand, there are specific reasons each institution requires a set of ERP systems to handle administrative functions (e.g., student admissions, registration, and financial aid). The Task Force considered recommending a common ERP for the state's higher education system but did not do so because of the high cost and disruption, and the varying needs of each institution.

However, the Task Force did believe there are opportunities to share collaboratively a common LMS to achieve statewide cost savings. Institutions use a LMS to deliver course content to their students, whether online, blended, or face-to-face. LMS content management systems also allow for the capture of student behaviors, such as log-ins, discussion productivity, assignment access, and exam completion times, which can be analyzed to promote more individualized approaches to student support. At some future point, the common LMS could also be tied into the common marketplace identified in Recommendation #2.

As part of its efforts in researching strategies, the Task Force surveyed the institutions within the public university and college systems, as well as the Independent Colleges and Universities of Florida (ICUF) schools, through an online questionnaire. The Task Force used this survey to collect information on the current and projected use of LMSs by Florida institutions to deliver online courses. The responses describe the current state of LMS adoption and use in Florida. The number of institutions included in the survey and the number of respondents are shown below.

	Total Invited	Total Responses	Total Non-Responses
Florida Public Universities	12	9	3
Florida Public Colleges	28	21	7
The Independent Colleges and Universities of Florida (ICUF)	31	11	20
Others	0	2	n/a
Totals	**71**	**43**	**30**

Based on the survey, the majority of SUS, FCS, and ICUF institutions that responded to the survey deliver online courses through a LMS. (Detailed survey results can be found at www.flbog.org.)

	Yes	No
Universities	8	1
Colleges	21	0
ICUF	8	3
Other	1	1
Totals	**38**	**5**

Through the survey, the Task Force found that each institution has chosen the instructional and technological solutions that it deemed best for its individual purposes. As a result, there are approximately six LMSs in use from both commercial and open-source providers. Of the 43 institutions that responded to the survey, the majority of them use Blackboard as their primary LMS, with Angel as the next most widely used product. However, the LMS market is very dynamic and these figures will change over time.

	Blackboard Learn	Blackboard ANGEL	Instructure Canvas	Desire2Learn Learning Environment	Moodle	Sakai
Universities	3		3	1		1
Colleges	7	7	3	2		1
ICUF	5	1			1	
Other					1	
Totals	**15**	**8**	**6**	**3**	**2**	**2**

The 43 institutions that responded to the survey reported a total expenditure of approximately $4,359,818 in base licensing fees in 2012-2013 for their LMS products.

Base Licensing Fees 2012-2013	
Universities (9 of 12 universities)	$1,447,271
Colleges (21 of 28 colleges)	$2,663,828
ICUF (11 of 31 institutions)	$248,719
Totals	**$4,359,818**

The survey also revealed that in 2012-2013 survey respondents spent approximately $950,639 on supplementary online software tools (e.g., collaboration, video conferencing, messaging, content management, electronic portfolios, analytics, rubrics, and mobile device access), while some of the institutions receive these services bundled into their primary LMS at no additional cost. Thus, respondents reported spending at least $5 million per year for online learning support tools. This figure does not include the infrastructure or staff costs required for an in-house LMS or the fees associated with a hosted solution.

Though Florida has exemplary policies such as articulation agreements and common course numbering that facilitate student transactions between institutions, the technological connections among institutions have proven to be far less seamless. While many other states do not have the advantageous policy environment present in Florida, most states reviewed for this report share a common technical infrastructure (a learning management system or a student information system) among their institutions. Therefore, the use of a single LMS solution for Florida deserves careful consideration.

Based on the results of the Task Force survey, the majority of institutions that responded will adopt a state-provided LMS using a cost-sharing model, while the same number will use a cost-sharing model if the LMS were the same brand their institutions were currently using. Please note that institutions were only allowed to provide one response to this question.

	Yes, would adopt a state-provided LMS	No, would not adopt a state-provided LMS	Yes, if it were the same brand the institution is currently using
Universities	2	1	5
Colleges	8	3	8
ICUF	4	1	2
Other	1	1	0
Totals	**15**	**6**	**15**

There are models already in place in other states (such as the opt-in model in Georgia) that can be studied for applicability in Florida. The opt-in model will provide Florida the opportunity to initiate a pilot program among volunteering institutions.

It is critical the selected LMS contains features that can support academic analytics. LMS vendors are offering increasingly sophisticated analytics capabilities, either as core functionality or as add-on modules at additional costs. Analytics modules, whether embedded or external, provide means for students, faculty, and authorized external parties to observe the in-course activities and outcomes of

individual students in real time. Data elements such as time in course, content consumed and created, communications with instructors and fellow students, and scores on assessments can be tracked and made visible through dashboards or reports. Using this information to drive notifications and interventions, student performance can be enhanced and academic difficulties avoided. Institutions that have implemented effective analytics-intervention strategies have observed significant increases in student success and persistence. However, there is a cost to the institutions to implement these capabilities.

Need

A common statewide LMS can provide cost savings for institutions and a consistent interface for students. A survey administered by the Task Force indicated there is interest by some of Florida's higher education institutions to have a common statewide LMS to provide students with a consistent online learning experience across the state and to achieve cost savings. Potential challenges with implementing a common LMS include timing an institution's transition to coincide with any current LMS contracts as well as faculty adoption and use of a new LMS.

Implementation Steps

FLVC should take the lead role in coordinating the development of a plan of action for funding and licensing a hosted or cloud-based LMS for common use in Florida to attain statewide cost savings and provide a consistent user experience for students. Initial funding for planning activities will be needed for implementation.

This recommendation is based on the assumption that all Florida postsecondary institutions will have the option to participate in the common LMS initiative (i.e., opt-in and not mandatory). The process will begin through a phased adoption with the ultimate goal of achieving 100% involvement through voluntary participation. FLVC should serve as the centralized coordinating entity for selecting the statewide platform. Leadership and coordination of this recommendation will fall under the governing structure already established within FLVC, as well as the organizational framework of each participating institution.

The following steps are required to implement this recommendation.

Step 1 - FLVC should develop a strategy for a common LMS using an opt-in approach.

FLVC should coordinate the development of a strategy, timeline, and funding mechanism for a common statewide LMS using an opt-in model. Faculty and CIOs must be included in this planning process to identify any steps needed to ensure adoption and integration of a statewide LMS. The strategy should include a cost savings analysis, pilot institution options, and potential cloud-based and hosted solutions. Equally important is the identification of which LMS to proceed with first, as well as the cost sharing proposed for each institution. The resulting strategy should include recommended approaches to reduce the cost to each participating institution. Start-up funding may be required from the legislature to support the project until a cost sharing model can be fully implemented.

Step 2 - FLVC should align the proposed strategy with statewide leadership.

FLVC should review the common LMS strategy and funding approach with key statewide leadership groups in Florida to align the strategy with the needs of the institutions. This task will potentially include the following groups:

- SUS – Board of Governors Office, Council of Academic Vice Presidents, Council of Student Affairs, Council for Administrative and Financial Affairs, and CIO Council
- FCS – Division of Florida Colleges, Council for Instructional Affairs, Council of Business Affairs, and Council of Student Affairs

Step 3 - FLVC should begin the negotiations and licensing processes.

Once the strategy is approved through the SUS and FCS structures, FLVC and its Board of Directors should initiate the negotiations and licensing of the selected LMS.

Step 4 - FLVC should launch the pilot implementation.

FLVC should work with the institutions that volunteered to participate in the pilot LMS project. This step will require each participating institution to transition its current online courses to the new system, reestablish LMS integrations with other systems, and train its faculty. This step should also include ensuring that any analytics data generated by the LMS are made securely available to the respective institutions for ongoing analysis and interventions.

Step 5 - FLVC should continue implementation with remaining institutions.

Once the pilot institutions have successfully implemented the LMS, FLVC should begin implementation for the other institutions that want to participate. This will need to be a progressive step with the institutions because of the differing LMS contract expiration dates, the effort required to train faculty, the time required to convert courses into the common LMS, and the need to avoid disruption to student instruction.

Step 6 - FLVC should assess the effort and determine next steps.

In this step, FLVC should conduct research on the statewide LMS initiative with data from the participating institutions. These findings will aid FLVC and statewide leadership to make recommendations on whether to continue with the opt-in program or make the common LMS mandatory statewide. FLVC should also determine if one statewide LMS is sufficient or if the effort should be expand to a second LMS product.

Cost Benefit

The proposed common LMS will require some initial funding for FLVC to begin the effort, for negotiation and contracting purposes, and for faculty inclusion and training during the initial steps. To offset the cost for ongoing support, the common LMS should be funded through fees paid by the institutions based on commonly adopted metrics. Conversely, the institutions will no longer incur

some of the expenses of an institutionally supported LMS (i.e., infrastructure or hosting costs). The following are the benefits anticipated for a statewide common LMS:

- Anticipated reduced costs for LMS licensing and related services
- A common authentication method for students to receive statewide services
- Sharing of courses, programs, and related materials between Florida universities and colleges (e.g., content repositories)
- Increased efficiencies in course and program delivery
- Acquisition and utilization of common data sets for learning analytics within the LMS

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
FLVC		Step 1 – FLVC should develop a strategy for a common LMS using an opt-in approach.	Step 2 – FLVC should align the proposed strategy with statewide leadership.	Step 3 – FLVC should begin the negotiations and licensing processes.	Step 4 – FLVC should launch the pilot implementation.	Step 5 – FLVC should continue implementation with remaining institutions.	Step 6 – FLVC should assess the effort and determine next steps.

RECOMMENDATION #4 – ENHANCE LABOR MARKET AND EMPLOYMENT STATISTICS FOR UNIVERSITY AND COLLEGE ONLINE PROGRAM DEVELOPMENT AND DELIVERY

The SUS, FCS, and DEO should continue to use enhanced labor market and employment data to facilitate the identification and development of postsecondary online programs that address Florida workforce needs.

Task Force Charge

The Task Force was charged with exploring the "alignment of online programs with identified state economic development needs and student demands." The Task Force defined this topic as the alignment of the institutions' online programs with the employment needs of the job market and employer demands. Student demand was deemed a byproduct of employer and job market needs and best addressed by the institutions.

Current State and Research

All Florida public universities and colleges are required to use need and demand data in their proposals for the creation of new programs. For example, the SUS form that is required for a university to request a new program must include the "national, state, and/or local data that support the need for more people to be prepared in this program at this level."

The FCS has a similar requirement on its new program request form. When requesting a new academic program, colleges are required to identify workforce demand and unmet needs by documenting information such as the geographic region to be served, the number of current jobs, the number of current job openings, and the projected number of job openings five years from the current year.

Once a new program is approved for delivery, the university or college can offer it using various modes of delivery. For example, if an institution has been offering a program face-to-face, it does not have to go through an external approval process to begin offering the program online.

The BOG Strategic Plan also includes academic programs of strategic emphasis that are derived in part from workforce projection data provided by DEO and from other considerations such as key economic information and input from workforce councils in the state. Degrees granted by institutions in the BOG programs of emphasis are a metric in the universities' annual accountability reports and are soon expected to become metrics in the SUS performance funding formula.

The FCS' current strategic plan includes the identification and expansion or enhancement of academic and vocational/workforce preparation and training programs of strategic emphasis. The identification of applicable programs is based on information that is also derived, in part, from workforce projection data provided by DEO and the regional workforce boards, as well as other considerations such as key economic information and input from the colleges themselves. In

addition, these degree and certificate programs (both postsecondary adult vocational and industry-based certifications) provided by the FCS are included in the system's accountability measures, recognized in currently available incentive funding provided by the Legislature, and will be included in the metrics tracked in a performance funding formula currently under development.

To further explore the use of workforce data by Florida's institutions of higher education, the Task Force members conducted interviews with a sampling of Florida universities and colleges. These interviews centered on the extent to which online programs and courses are selected based on job market demands. Through these discussions, it became evident that Florida's public higher education institutions have online programs in place that address job market needs. Some institutions are tightly aligned with employer needs, while others are less closely linked. It was clear that the institutions' industry advisory groups or business partnerships appear to be the best method for selecting current and needed programs. However, it also became evident that sharing job market data could be improved. Some examples from the university and college sectors of the alignment of workforce needs and online educational opportunities are as follows:

- At Florida International University (FIU), about 40% of the programs in its School of Business are offered online. These programs are identified based on the needs of business. For example, FIU initiated an online information technology (IT) program based on businesses' IT workforce needs. FIU uses national labor statistics and business partnerships to identify jobs that are in demand.
- At the University of West Florida (UWF), online programs are aligned to workforce needs such as health sciences, nursing, IT, and public health at the bachelor's level. At the graduate level, high demand programs drive the decision to move programs fully online. UWF has formed the Innovation Institute that serves as an "educational incubator" to solve complex challenges facing UWF, online learning, and the overall costs of education. The Institute is responsible for the Complete Florida Degree Program as well as all UWF innovative program activities. The Institute works on projects that have a substantial impact on the regional economy to meet the growing demand of Florida's workforce challenges.
- At the University of Central Florida (UCF), online programs were initiated to target workforce needs since UCF is a leading university for business partnerships. Some of the colleges at UCF have advisory boards which provide input on programs for business needs. UCF's student enrollment growth in its online programs is the direct result of the university's focus on online learning. Knowledge of job market needs comes from both labor statistics and business partnerships.
- St. Petersburg College (SPC) received a Fund for the Improvement of Postsecondary Education (FIPSE) grant to expand online education programs and services. SPC obtains input from industry on programs and courses. SPC uses advisory groups for online, face-to-face, and blended programs. Labor statistics used by SPC include information from Worknet Pinellas, the U.S. Department of Labor, and the Occupational Outlook Handbook. Student demand also determines if an online program should be expanded.
- Florida State College at Jacksonville's (FSCJ) Center for eLearning was established to develop high-quality online courses for both academic and career-oriented programs. To

date, the Center has developed online baccalaureate programs in early childhood education, IT management, nursing, supervision and management, and business administration. These programs have advisory boards comprised of local leaders in government and business. Demand for online courses is determined by student enrollment, with ongoing expansion as needed. FSCJ is currently working on a U.S. Department of Labor Trade Adjustment Assistance Community College and Career Training grant in a consortium of 10 community and state colleges to jointly develop online programs in the IT and healthcare professions.

Based on these interviews, the Task Force concluded Florida already has many online programs and courses designed to meet job market needs. The trend is clearly to have positive employment outcomes for student graduates. There were gaps, however, in awareness of data sources available for labor market information and a related desire to receive more Florida-specific labor market data.

It is also important to note that Florida's labor market data were an important component in the work performed by the Access and Educational Attainment Commission. The BOG Chair established this Commission in June 2011 to address the state's need for future baccalaureate degrees. The Commission selected a team of researchers from education, labor, and business to provide information and analyses. Data similar to that provided in the Commission's final report should be readily and easily available to Florida's postsecondary institutions. The final report created by the Commission can be found on the BOG website (www.flbog.org).

Need

Florida's higher education institutions currently use national, state, or regional-level labor market data to shape the development of online program offerings, but there is a desire to strengthen the alignment of workforce needs with educational opportunities. The Task Force found a positive alignment between the online programs institutions provide and workforce needs, as well as a strong BOG and FCS program approval processes that require the use of workforce data for new academic programs. Through the sharing of effective practices and the expanded distribution of labor market statistics and FETPIP employment data, a tighter coupling between workforce needs and online programs can be achieved.

There were also related suggestions to ensure consistent practices among the institutions in their decisions for online programs. Recommendations related to effective practices for workforce needs are addressed in Recommendation #8 of this report.

Implementation Steps

DEO, the BOG, and the FCS would like to enhance existing efforts to align online programs with identified state economic development needs. Through the sharing of effective practices and increased distribution of labor market and employment data, an even tighter coupling between workforce needs and online programs may become possible.

The following steps are required to implement this recommendation.

Step 1 – DEO, in collaboration with the BOG and FCS, should provide enhanced labor market data semiannually tailored to Florida's postsecondary needs.

DEO's Bureau of Labor Market Statistics should work collaboratively with the BOG and FCS to provide enhanced State of Florida and regional labor statistics on jobs in demand to colleges and universities at least semiannually for their use in developing new market-based online degree programs. Data should consist of elements such as:

- Current and projected industry and occupational employment
- Online job ads by occupation
- Supply and demand ratios by occupation
- Wages by industry and occupation

Florida's postsecondary institutions should continue to use this enhanced data set in their program planning efforts. Labor statistics or other market demand indicators could be included as part of the university and college strategic, tactical, or work plans for their online learning programs. These plans could include a description of how new online programs are aligned with state and regional employment needs. If educational institutions do not have plans addressing online learning programs, they should be encouraged to develop such plans.

As part of this step, the BOG and FCS will need to identify the contact person within the institutional research unit of each university and college as well as the best data delivery method. This step will ensure the information is distributed to the appropriate program office and is available as online program decisions are made. The Bureau may also need to provide webinars or other support to increase the awareness of the data and their use as input for program and course decisions.

Step 2 – DEO, with the BOG and FCS, should pilot the use of enhanced labor statistics and adjust as needed.

DEO's Bureau of Labor Market Statistics, the BOG, and the FCS should conduct a pilot with a few select institutions to use labor data for program planning and to explore the use of FETPIP employment data. (Additional information on FETPIP data can be found in Recommendation #9.) This pilot should also determine data methods for institutions to use in applying labor statistics to identify online program needs, as well as determining if FETPIP workforce and enhanced employment data will be of value to the institutions. In turn, these pilot partnerships should improve data production, delivery, and use. Institutions that have volunteered to be part of the pilot project include Tallahassee Community College, St. Petersburg College, Palm Beach State College, and the University of South Florida.

Cost Benefit

The DEO Bureau of Labor Market Statistics can implement this recommendation as part of its ongoing data collection and analysis activities. The expected benefit is a tighter alignment of labor market statistics and use of these data by Florida's postsecondary institutions.

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
DEO	Step 1 – DEO, in collaboration with the BOG and FCS, should provide enhanced labor market data semiannually tailored to Florida's postsecondary needs.	Step 2 – DEO, with the BOG and FCS, should pilot the use of enhanced labor statistics and adjust as needed.					

RECOMMENDATION #5 – DEVELOP AND DELIVER STATEWIDE FOR-CREDIT MOOCS

The BOG, in cooperation with the FCS, should select a lead institution(s) to coordinate the development, delivery, and marketing of for-credit MOOCs that incorporate a quality framework and establish guidelines for competency-based evaluations of non-credit MOOCs.

Task Force Charge

The Task Force was charged with identifying "collaborative efforts related to Massive Open Online Courses (MOOCs)" and was subsequently asked to review CS/HB 7029 passed by the Florida Legislature. The Task Force explored identifying a strategy for the statewide development and delivery of for-credit MOOCs, the process by which MOOCs are developed and delivered, the standards to be used to ensure high-quality and consistency across Florida's postsecondary system, the impact on existing curricula, and financial issues.

Current State and Research

As required by CS/HB 7029, beginning in the 2015-2016 school year the BOG and the SBE must adopt rules that enable students to earn academic credit for online courses, including MOOCs, prior to initial enrollment at a postsecondary institution. Chapter 2013-45 (SB 1514) significantly increases the cost to the school district for students dually enrolled in high school and a college or university. This legislation, when combined with CS/HB 7029, makes MOOCs a viable option for high school students seeking postsecondary credit.

MOOCs represent an alternative to traditional and online classes for students to acquire knowledge in particular subjects. Presently, universities are in the pilot phase of their efforts to offer MOOCs for credit and the Lumina Foundation is funding a two-year project to develop a common framework for what constitutes student learning so that it may be applied to assessing MOOCs.

In Florida, the University of Florida, the University of Central Florida, the University of West Florida, Florida International University, and St. Petersburg College are offering MOOCs and researching how the concept fits into the overall postsecondary online learning landscape.

- UF is delivering MOOCs through Coursera
- The University of Central Florida is offering lower-enrollment, interactive MOOCs through Canvas Network
- The University of West Florida and Florida International University (as well as several institutions across the United States) are developing a MOOC-2-Degree system in cooperation with Academic Partnerships as a strategy for adult learners to gain interest in pursuing graduate program activity
- Florida International University is offering a range of enrichment MOOCs in both English and Spanish

- St. Petersburg College is delivering MOOCs for developmental courses that are being accessed by local high schools, current students, and the general public

Business Models

There are six business models higher education institutions are using or are planning to use for granting academic credits for MOOCs. The goal of the models is to attract new students to degree programs and to offer a lower tuition through MOOCs for credit.

Institutions Granting Credits for MOOCs Built by Home Institution - This model describes an institution granting credit for MOOCs that it develops in-house using the institution's course standards and degree program learning outcomes. Similar to the process of institution-to-institution transfer credits, students submit a request for their MOOC transcript or syllabus to be reviewed and considered by the home institution and complete a proctored exam to demonstrate their familiarity with the subject. The MOOC is offered at no cost to students who do not seek academic credit. When a student does put in a request for credit review of the MOOC, the student pays a fee much lower than regular tuition. The State of Georgia has this business model in place and many universities are considering implementation, such as Cleveland State University, Lamar University, Utah State University, University of Arkansas, University of Cincinnati, and University of Texas at Arlington.

- ***Advantages*** - Because the MOOC is less expensive to students, more accessible, and requires only a basic fee for credit review requests, it may lead to new enrollments. Such students may not have otherwise enrolled without the MOOC option for additional credit courses, academic degrees, or certificates.
- ***Disadvantages*** - The MOOC still has to be funded, built, and hosted by the home institution.

Institutions Granting Credits for MOOCs Built by Other Institutions or MOOC Providers - This model is similar to the model described above, with the addition that the home university also reviews and considers granting credit for MOOCs offered by other institutions or commercial MOOC providers (i.e., Coursera, Udacity, and EdX). A student will still submit a request for the MOOC transcript or syllabus to be reviewed and considered for credit and will be required to take a proctored exam at the home institution. The fee will remain lower than regular tuition at the home institution conducting the review. The American Council on Education (ACE) operates a credit-recommendation service that evaluates individual MOOCs built by various institutions. If a MOOC passes ACE's evaluation, ACE notifies its 1,800 members that ACE approves the MOOC as credit. However, it is still up to the individual institution to grant credit for a MOOC. Currently, only five MOOCs have been recommended by ACE for academic credit. Currently, San Jose State and Colorado State University Global Campus are considering or have implemented this model collaborating with Udacity.

- ***Advantages*** - The home institution does not have to fund, build, and host the MOOC. The ability to submit requests for transfer MOOCs to be reviewed for and granted credit at the home institution may incentivize new students who will not have otherwise enrolled without the MOOC option into academic degrees.

- ***Disadvantages*** - Students will have less contact with the faculty of the home institution. The course content may lose some intellectual coherence with the remainder of the degree curriculum if not created by the faculty at the home institution.

Institutions Offering the First Course of a Degree Program as a MOOC - This model describes an institution offering the first course of a degree program as a MOOC. The student is granted credit for this MOOC and does not have to pay for the MOOC, even after continuing to the other non-MOOC courses of the degree program. The "free trial" concept is based on the premise that revenues will be generated from students who complete the entire degree who will not have otherwise enrolled without the MOOC serving as a first course option. The University of Cincinnati and Academic partnerships through its partner institutions currently have this model in place.

- ***Advantages*** - Students who have not made the decision to enroll in a program may be strongly incentivized to join knowing that the first course is free. The rest of the selling features (student experience, collaboration, and interaction) have to come into play during the first term in order for students to continue to pursue the degree.
- ***Disadvantages*** - The MOOC has to be funded, built, and hosted by the home institution using its course standards and degree program learning outcomes, but the home institution receives no tuition for this MOOC's credits.

Institutions Licensing MOOCs From Other Institutions Through Coursera - Coursera (the licensor) licenses MOOCs from another university to the home university (the licensee) to be used in a degree program. Students pay the home institution a fee lower than regular tuition. The MOOC will still have branding from the institution that developed the course, but is offered as one of the home institution's online options. The MOOC still maintains its assigned professor from the original institution, but the home institution provides students a faculty member or instructor who serves as an additional study advisor to discuss material and assign supplementary material. Antioch University, which is currently partnered with Coursera, assigns 20 students to one supplementary faculty member or instructor. From students who enroll in the MOOCs at the home university, Coursera receives between 6 and 15 percent, and the institution and professor of the MOOC receive about 20 percent of gross profits. The State University of New York participates in this model for its most popular undergraduate general education courses.

- ***Advantages*** - The home institution does not have to fund, build, and host the MOOC. The home institution is able to leverage the reputation of the institution that created it (in the case where the MOOC is from a prominent institution).
- ***Disadvantages*** - Using a MOOC created by another institution does nothing to enhance the relationship between students and faculty at the home institution.

Institutions Partnering with Corporations and Udacity - This model describes a home institution collaborating with a workforce entity and Udacity to offer specific degree programs, which prepare professionals for the specific industry through MOOC-style courses. Students complete a proctored exam at the end of each MOOC at a proctoring center (not necessarily on-campus at the home institution). Students pay for the MOOC-style courses at a lower cost than the regular tuition. The

workforce entity helps fund the building and hosting of the MOOCs. Revenues from the tuition are distributed among the home institution, the business entity that was chosen to partner, and Udacity. Georgia Institute of Technology collaborated with AT&T and Udacity to offer a Master's in Computer Science. AT&T contributed $2 million to launch the degree. AT&T hopes this degree will prepare more workers in the industry and hopes to target AT&T employees and nonemployees. Georgia Tech and Udacity will share the profits (and losses) 60%/40%, respectively.

- ***Advantages*** - This partnership model is especially attractive to organizations in industries lacking a workforce with the necessary skillset or education. The business funds the development of the MOOCs using the Udacity platforms, which decreases costs for the home institution because it is able to benefit from Udacity's hosting scalability.
- ***Disadvantages*** - There is less instructional revenue for the home institution to reinvest in faculty and student support services (however, in the end, the smaller profit may be offset by a larger student and alumni base which may bring additional growth opportunities to the home university).

Developmental MOOCs

Completion rates for postsecondary education students taking remedial education courses fall below state and national goals. As stated in Complete College America, there is a documented need "to accelerate mastery of college-ready skills, completion of gateway courses, and enrollment into programs of study." The importance of improving student accessibility and success when placed in precollege courses has become crucial to the State of Florida's goals for college completion rates.

Designing MOOCs that incorporate Florida's College System Competencies promotes the skills necessary for students to earn postsecondary degrees. Developmental MOOCs will add value to a larger student population of learners than can be reached with current methods. These include the following:

- Currently enrolled college students who enroll in MOOCs for increased study and supplemental resources
- Prospective students pursuing a degree who enroll in MOOCs to complete required developmental education course(s)

Additionally, developmental MOOCs deliver cost saving opportunities for high schools and institutions that leverage the ready-made professional quality courses.

Broward College was recently awarded a $300,000 grant from the DOE to fund the development of massive open online courses in foundational subjects. Broward College's proposal, supported by College Access Challenge Grant funds, uses a competency-based approach to instructional design that assesses students' abilities and helps them focus their time and energy on areas that need the most attention. This self-paced approach drives an effective, time-efficient pathway to success for students seeking to boost their reading, writing, or math skills. This MOOC will be provided for use by the entire state, and will be unique in its use of game-based learning activities.

Need

Many Florida institutions are offering MOOCs, but few offer credit, and there is no centralized statewide effort. MOOCs are fast becoming a method for students to advance their learning and knowledge. Florida's higher education institutions would like to identify and develop a set of for-credit MOOCs for statewide use that incorporate effective practices, competency-based assessments, and support the requirements of CS/HB 7029, which was enacted during the 2013 legislative session.

Implementation Steps

Under the leadership of the BOG, and in cooperation with the FCS, a lead institution(s) should be selected to coordinate the development, delivery, and marketing of for-credit MOOCs that incorporate a quality framework and competency-based evaluations. Additional one-time and potentially recurring legislative funding will be required for this initiative and for ongoing statewide marketing efforts.

The following steps are required to implement this recommendation.

Step 1 - The BOG should approve an amendment to its LBR to submit to the 2014 Legislature for initial startup funding for statewide coordination and a pilot program of for-credit MOOCs.

For consideration by the BOG at its January 2014 meeting, BOG staff, in cooperation with FCS staff, should develop an LBR amendment for initial MOOC startup funding for statewide coordination and a pilot program. If approved by the BOG, the amendment will be submitted to the 2014 Legislature for its consideration. This LBR amendment should detail the cost for first year startup activities, such as development of a Request for Proposals (RFP) to select a lead institution(s), the implementation of a pilot program, the establishment of a statewide working group to develop a detailed strategy and workplan, and the development of draft regulations.

Step 2 - The BOG should select a lead institution(s) using a competitive procurement process.

The BOG staff should develop an RFP to select a lead institution(s) to lead the statewide effort for MOOCs. If possible, this RFP should be ready for release on July 1, 2014, or sooner if feasible.

Step 3 - In cooperation with the BOG, the lead institution(s) should conduct the pilot program and develop a detailed strategy and LBR for the delivery of MOOCs statewide.

Once selected, the lead institution(s) should conduct the pilot program. At the same time, the institution should configure a statewide working group to develop a statewide MOOC strategy, including a marketing strategy. The working group should consist of staff from the SUS and FCS academic officers. The working group should develop strategies for the following items:

- How to address each element outlined in CS/HB 7029 as it relates to MOOC delivery?
- How should MOOCs for credit be provided and supported within the SACS accreditation framework?
- What is needed for MOOCs to be supported as part of Florida's common course numbering and articulation processes?
- How will MOOCs be supported during a students' transfer to another institution?
- What MOOCs should be offered statewide? The lead institution(s) should take into consideration that the expansion of MOOCs will require system-level support and should include the selection of high-demand courses that may include developmental, career readiness courses, and enrichment courses.
- Who should develop the MOOCs? What MOOC course development guidelines are necessary to ensure the use of effective practices and a standardized course environment?
- What MOOCs are already developed that can allow Florida to begin offering MOOCs as soon as possible?
- How should MOOCs be delivered and via what technology platform? Possible platforms include leveraging an existing SUS and FCS LMS tool or implementing a common platform (like the new Open edX platform to be developed by Google and EdX).
- How should posttests be administered (evaluation methods should be uniform across the SUS and FCS systems), as well as:
    - How to certify student performance on learning outcomes after completing a MOOC?
    - How to authenticate student identity (e.g., automated essay grading tool introduced by EdX; proctored exams)?
- A method for students to be able to verify having completed the MOOC, such as badges or certificates.
- What type of marketing campaign will best meet statewide needs?
- If the statewide MOOCs should be coupled or linked to the common marketplace (Recommendation #2).

For these efforts, the lead institution(s) should work closely with the proposed Online Learning Research Advisory Committee as outlined in Recommendation #1.

These efforts should result in a pilot program as well as a strategy and 2015 LBR request for statewide implementation efforts. The BOG, in collaboration with the lead institution(s), should review the LBR and MOOC strategy with the appropriate statewide leadership groups as part of the state's normal budgeting process.

Step 4 - The BOG, in collaboration with the lead institution(s), should develop the draft regulations required for a) proposed tuition that students should pay to receive credit for MOOCs and b) the process for awarding students credit for MOOCs.

Concurrent with the lead intuition's efforts, the BOG should begin development of draft regulations required to award credits to students completing MOOCs prior to admissions and to standardize the

tuition for MOOCs. The Task Force suggested the following guidelines for the development of required regulations:

- MOOC must be built by an SUS or FCS institution or must be approved by ACE as eligible for credit
- MOOC is associated with a lower division course
- Student must obtain certification of completion for the MOOC and complete assessment(s) approved by the home institution granting credit

Step 5 - The BOG should seek 2015 legislative funding (i.e., one-time and/or recurring) for full statewide implementation of MOOCs.

The LBR should include the projected number of MOOCs to be developed, approximate cost to develop, and associated delivery and student support infrastructure. The BOG should request funding from the 2015 Legislature to implement the approved strategy and to obtain required approvals for a common MOOC tuition.

Step 6 - The lead institution(s) should begin implementing the statewide MOOC strategy.

The lead institution(s) should conduct the following steps for statewide implementation.

- Assist the BOG in determining which SUS or FCS institutions should be funded to develop which MOOCs
- Create development teams working in collaboration with a supplemental media development team to support high-end MOOCs
- Coordinate or provide the MOOC delivery mechanisms
- Implement consistent processes for delivery
- Develop necessary student support infrastructure

The goal is to have for-credit MOOCs in place by the fall 2015 semester.

Cost Benefit

Offering for-credit MOOCs will require startup funding for the development of courses, for the infrastructure to support their delivery, and for a statewide marketing campaign. These costs should be offset in future years through registration fees and tuition. Providing MOOCs in Florida through the postsecondary system will enable Floridians to take courses that are offered using quality standards and assessments and with the possibility of receiving credit for the course from a postsecondary institution. MOOCs offered through state institutions of higher education can be a cost-effective way for Florida high school students to obtain instruction that can later be validated for credit through examination or other competency-based measures envisioned by CS/HB 7029.

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
BOG (in collaboration with FCS)	Step 1 – The BOG should approve an amendment to its LBR to submit to the 2014 Legislature for initial startup funding for statewide coordination and a pilot program of for-credit MOOCs.	Step 2 – The BOG should select a lead institution(s) using a competitive procurement process. Step 4 – The BOG, in collaboration with the lead institution(s), should develop the draft regulations required for a) proposed tuition that students should pay to receive credit for MOOCs and b) the process for awarding students credit for MOOCs.	Step 5 – The BOG should seek 2015 legislative funding (i.e., one-time and/or recurring) for full statewide implementation of MOOCs.	MOOCs Continue →			
Lead Institution(s)		Step 3 – In cooperation with the BOG, the lead institution(s) should conduct the pilot program and develop a detailed strategy and LBR for the delivery of MOOCs statewide.		Step 6 – The lead institution(s) should begin implementing the statewide MOOC strategy.	MOOCs Continue →		

RECOMMENDATION #6 – ENHANCE AND EXPAND THE ONLINE LEARNING RESOURCES REPOSITORY

FLVC, working with a lead institution from the SUS and FCS systems, should enhance and expand its learning resources repository to support the sharing of quality learning objects, eResources, and eTextbooks for faculty and student use.

Task Force Charge

The Task Force was charged with exploring the "development and expanded use of eTextbooks and other electronic materials." The Task Force defined this topic as the creation of guidelines for the selection of electronic materials, as well as an upgrade of Florida's central repository to allow for the statewide sharing of eTextbooks, eResources, and learning objects to lower the cost of course development and the cost of materials for students.

Current State and Research

Section 1004.085, F.S., "Textbook Affordability," and BOG's Regulation 8.003, "Textbook Adoption," provide guidelines for the adoption of textbooks and course materials that are affordable to students in Florida's postsecondary institutions. Historically, initiatives to expand the use of eTextbooks and other electronic educational resources were hindered by the availability of materials and technologies to support their use.

Open Educational Resources

Open educational resources are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

Open educational resources came to the attention of the public in 2000 when the Massachusetts Institute of Technology published core course content online, making it freely available worldwide. Creative Commons, established in 2001, introduced a set of alternative copyright licenses for resource sharing in 2002. By 2009, there were an estimated 350 million works licensed under Creative Commons.

In recent years, the demand for electronic educational materials has increased along with the availability of free and licensed materials. The Task Force found that electronic educational materials are now available through many online projects that offer free or affordable eTexts, full eTextbooks, eResources, and various learning objects for both the student and the instructor. However, many of the free resources are not robust and comprehensive enough to be widely used. Many commercial publishers also offer electronic versions of textbooks, often with a plethora of accompanying electronic materials.

National models can enable Florida to expand its existing knowledge and expertise in the development and distribution of high quality and peer-reviewed course material at no or reduced cost for students. Florida could also follow the example of other states (e.g., the Kaleidoscope project, a consortium of community colleges and four-year schools from California to New York) and identify ways to address the high cost of textbooks through bulk licensing of commercial digital textbooks and resources combined with open electronic materials.

National services that were explored are illustrated below.

Online Projects	Offerings
OpenStax College	eTextbooks
Connexions	eTexts, eResources, Learning Modules
Community College Consortium for Open Educational Resources	eTextbooks
Open Educational Resources Commons	Learning Objects, eTexts, eTextbooks, eResources
Project Gutenberg	eBooks, eTextbooks
MERLOT	eResources, eTextbooks
The Orange Grove	eTextbooks, Learning Objects
Indiana University eTexts	eTextbooks

Open eTextbooks

Adopting open eTextbooks poses challenges such as how to evaluate the materials to identify those that best address curriculum standards and student learning outcomes. Also, many institutions that have supported faculty development of open eTextbooks for students use (at a lower cost) are abandoning their efforts because they are not financially sustainable or the faculty members stopped using the eTextbooks for their courses. The adoption of open eTextbooks is also sometimes hindered by potential faculty resistance, lack of awareness, competition from commercial publishers, identification of materials, and sustainability.

Conversely, open eTextbooks can provide lower cost materials for students. FLVC's Open Access Textbooks Project resulted in the report *2012 Promise of Open Access Textbooks: A Model for Success (Revised Edition)*. The report provides an overview of the development and use of open textbooks in Florida and lists resources for authoring and editing open texts. For two consecutive years, the grant also supported statewide research on student and faculty perceptions and use of open resources, commercial print and digital textbooks, and learning resources. The Open Access Textbook Project found that over half of the students reported not having financial aid that will cover textbook costs and 63% of the students reported they did not purchase the required textbook because of the cost. Almost one-fourth reported doing without a textbook frequently (23%).

Some institutions are opting to license publisher-created content. Indiana University, for example, has collaborated with commercial publishers to provide students around the state with digital textbooks. The Indiana University pilot program found that only 12% of students chose to purchase

a paper copy and the lower cost of an eTextbook was considered the most important factor by students who purchased them. Recommendations from the pilot were to:

- Consider plans for optimal procurement and distribution
- Factor in the role of open electronic resources
- Obtain volume pricing with commercial publishers
- Ensure accessibility for users with disabilities and usability on multiple devices and platforms

The Task Force research shows that eTextbooks are often more affordable for students and students often prefer them to printed textbooks. In Florida, the use of open and commercial eTextbooks should be further investigated and considered for reducing student and institutional costs of instructional materials.

The Orange Grove

In Florida, FLVC supports The Orange Grove, which is a statewide digital repository for electronic materials, including open textbooks, learning objects, administrative and professional development documents, and statewide licensed instructional resources for higher education. Faculty, researchers, and institutions can search, use, remix, contribute to, comment on, and rate any of the items in the repository. Alternatively, a user can search for items, have access to, and use harvested resources. The Orange Grove repository can also be integrated with a variety of campus-based learning management systems. The Orange Grove is a model resource recognized around the country. However, The Orange Grove has never been funded as needed to ensure the quality of resources it contains, address accessibility and usability issues, promote its use statewide, perform needed technology updates, or adapt it for use with federated identity management. In addition to The Orange Grove, several Florida institutions have developed their own electronic resource repositories, including the University of Central Florida's Obojobo, which received the 2013 WICHE Cooperative for Educational Technologies Outstanding Work award.

Standards

Standards are also emerging for the selection and use of open electronic materials. The Task Force reviewed guidelines set forth by the College Open Textbooks Collaborative (COTC). The Saylor Foundation, a nonprofit organization dedicated to free and open education, adapted the COTC criteria for the evaluation of open access texts. Materials are peer-reviewed on a scale of 1 to 5, with comments on strengths and weaknesses.

Need

An expanded learning resources repository and guidelines for the use and selection of electronic learning materials can reduce the cost of course materials for Florida's online learners. The postsecondary institutions desire statewide guidelines to make better-informed decisions for adopting eTextbooks and other electronic materials to help drive down the cost of instructional materials.

Statewide efforts on the use of global content and guidelines on how it can be reused, mixed, altered, and adapted to meet local needs of the institutions will increase the use of quality open resource materials. An improved statewide learning resources repository to provide electronic materials for students and faculty at an affordable cost will facilitate these efforts.

Implementation Steps

FLVC, in collaboration with its Members Councils, should define standards for the selection and adoption of electronic resources as described in this report to increase their use in Florida. The role of the two Members Councils could include:

- Members Council on Library Services – provide expertise on the selection of electronic library resources and identify effective practices for metadata tagging to help students and faculty find and select from the resources available to them
- Members Council on Distance Learning and Student Services - provide expertise on the integration of electronic resources into online courses and programs

In addition, FLVC, working with a lead institution from the SUS and FCS systems, should enhance and expand its learning resources repository to support the sharing of quality learning objects, eResources, and eTextbooks for faculty and student use. These two activities are aimed at increasing the use of electronic materials (both open and commercially available) and to lower the cost of instructional materials.

Although additional one-time and potentially recurring legislative funding will be required for this effort, long-term cost savings will be attained by the state through resource sharing and reducing the unit cost of educational materials.

The following steps are required to implement this recommendation.

Step 1 - FLVC should establish a working group under its two Members Councils to guide statewide electronic resource efforts.

This working group should be tasked with the following activities and develop related guidelines and recommendations. For research-based input into its activities, the working group should request any existing research identified by the Online Research Advisory Committee (Recommendation #1), as well as recommendations from the Members Council on Library Services. After any guidelines are developed, FLVC should publish and disseminate the guidelines, preferably under the effective practice portal as proposed in Recommendation #8.

- ***Task 1 - Develop statewide guidelines for reusable learning object development.***

  The working group should develop a set of statewide guidelines for institutions wishing to adopt or implement reusable learning objects. Electronic reusable learning objects should include content, practice, and assessment components. These components should be part of any learning objects that are developed or collected, and learning objects should be designed such that they may be used flexibly in part or whole as needed. A structure for evaluating

the quality and utility of learning objects may be adapted from existing rubrics or a review and rating process may be developed. A potential tool for evaluating learning objectives should include:

- Degree of alignment to standards
- Content accuracy, consistency, and currency
- Quality, clarity, and readability of written text
- Quality of content, practice, and assessment components
- Technological interactivity and learner feedback
- Accessibility for users with disabilities and usability across platforms

- ***Task 2 - Develop standard frameworks to use in the evaluation of electronic textbooks.***

  The working group should develop standard frameworks for use in the evaluation of electronic textbooks. This review should include examining current research and trends on the creation of eTextbooks by public and commercial entities, as well as students' use of eTextbooks. Whether open access or produced by a commercial publisher, eTexts should be evaluated using a common framework or guidelines. A tool for evaluating eTextbooks should include the items listed in Task 1.

- ***Task 3 - Develop standard frameworks to use in the evaluation of electronic instructional resources.***

  The working group should develop standard frameworks for use in the evaluation of other open and commercial electronic instructional resources. A tool for evaluating online resources should include the items listed in Task 1. A framework could be adapted from the COTC and Saylor Foundation criteria, which are based on American Library Association guidelines. A peer-review process akin to the MERLOT model may also be considered within, or across, institutions.

- ***Task 4 - Conduct additional investigation into adoption of online-based commercial publications.***

  The working group should conduct additional investigation into how to adopt and implement commercially published eTextbooks, including what legislative action may be needed to support implementation efforts and what funding models or fee schedules should be implemented. The working group should consider if a formal statewide initiative will benefit students who would ordinarily opt out of purchasing a book. The working group should also:

  - Explore Indiana University's pilot partnership with commercial publishers because the eTexts @ IU initiative could be a model for the implementation of commercially produced electronic textbooks in Florida

- Consider the possibility of negotiating or coordinating statewide contracts with one or more publishers of eTextbooks; research on this topic should be conducted in conjunction with any statewide pilot implementation
- Examine the efforts of FLVC's eTextbook Licensing Workgroup
- Explore key questions and issues identified by the Task Force, such as:
  - ✓ The potential for eTextbook or open textbook fees
  - ✓ The role of campus bookstores in licensing and distribution
  - ✓ The issue of bookstore non-compete clauses and their potential for limitations on statewide licensing of digital resources
  - ✓ The potential role of FLVC in negotiating statewide licensing of eTextbooks and instructional resources for Florida's public higher education institutions

Step 2 - FLVC should update Florida's learning resources repository to increase its accessibility and use.

Florida's The Orange Grove initiative, as well as electronic resource trends throughout the United States, demonstrate the need for a statewide repository for quality, reusable electronic materials for open use across institutions. Continuation of such a statewide repository promotes cross-institution collaboration and sharing, and can reduce the cost of course materials for students. Today, The Orange Grove currently supports this need. However, the management, updating, maintenance, and funding of the repository have not kept pace with the need. Florida's repository needs updating technologically, and issues such as funding, quality assurance of included resources, accessibility and usability, and promotion for statewide faculty need to occur. Currently, it is difficult for users to identify and locate resources and there is a lack of adequate resources to support the repository efforts.

Therefore, FLVC should select two lead institutions (one from the university system and one from the college system) to collaborate with its staff in defining how the statewide repository for electronic resources should be adapted and changed in light of current postsecondary needs and changes in technology. The focus on the new repository should be to address state-level educational and workforce needs and to identify where efficiencies can be gained through sharing. This should include high-demand courses or program recommendations by the BOG's Commission on Access and Educational Attainment.

This working group should examine the following strategic questions:

- What is the purpose and scope of Florida's online repository?
- Should the current technology supporting The Orange Grove continue to be used? Is there a better product on the market to support this effort? Alternatively, should the repository be incorporated into FLVC's future integrated library system?
- How should information be placed into the repository for most effective use by faculty and potentially students?
- Should a peer review of materials be considered?

- How should electronic materials be collected and evaluated prior to their addition in the statewide repository?
- What budget and timeline is required to make the desired changes to the online repository or to incorporate it effectively into the future integrated library system?
- What is the funding required to support the repository as needed to attain statewide efforts?
- What are the respective roles of FLVC and the institutions in coordinating statewide licensing of commercial, digital, instructional resources?
- Is legislation needed to require institutions and faculty that receive state grants for developing instructional materials to place them in the repository?

Based on these questions, FLVC should develop a one-time and/or recurring LBR or identify an alternative funding mechanism to update or replace the repository. Once funding is available, implementation should begin.

Cost Benefit

Initial funding will be required for planning, work group, and standardization activities. However, these costs should be offset by statewide gains through an increased use of open and licensed electronic resources focused on lower student and institutional costs.

A statewide repository to support the sharing of eTextbooks, eResources, and learning objects may require one-time and potentially recurring legislative funding depending on the approach selected, but these investments should lower the cost of course development and student material costs. Shareable statewide materials will provide faculty access to more value-added content, affordable or no-cost online resources, and other high-quality educational resources.

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
FLVC	Step 1 – FLVC should establish a working group under its two Members Councils to guide statewide electronic resource efforts.		Step 2 – FLVC should update Florida's learning resources repository to increase its accessibility and use.	Electronic Resources Continue →			

RECOMMENDATION #7 – PROVIDE STATEWIDE FACULTY DEVELOPMENT CENTER(S) FOR ONLINE LEARNING

The BOG and the FCS should select one or more lead institution(s) to develop and implement statewide faculty and administrator development services for online education, using a train-the-trainer approach.

Task Force Charge

The Task Force was charged with exploring "providing faculty support services." The Task Force defined faculty as all faculty members (regardless of rank) who teach in an online environment.

Current State and Research

As part of the research for faculty services, several national models stood out as providing innovative faculty services, including Open State University of New York (SUNY), UMass Online, Illinois Online Network, Pennsylvania State System of Higher Education (PASSHE), and Online@UCF. Detailed research on these models is located in Recommendation #8 – Create an Effective Practices Repository.

State systems and individual institutions across the country frequently offer faculty development as a component of the overall online learning initiative. Each system or individual institution's model is unique to the resources allocated to that institution, the level of emphasis placed on online learning, and the capabilities expected of faculty members. Many states have a centralized entity whether housed in a state office or through a designated institution to coordinate online learning statewide. System-level efforts such as these encourage collaboration, efficiency, and clear outcomes in the area of faculty development.

The National Center for Academic Transformation (NCAT) has been studying faculty support services for many years. NCAT has successfully worked with institutions across the United States to make better use of the most expensive cost of a course, the faculty member. Most of the work done by NCAT has emphasized the on-campus or blended model with high-enrollment general studies courses. Significant cost savings have been achieved across participating institutions while also increasing quality as measured by reduction in drops, failures, and withdrawals; improved course retention; and a comparison of overall student learning outcomes across sections (participants in redesign compared to nonparticipants). Although much of the work with NCAT was not focused on online education, the lessons learned can be applied to online learning. Where disaggregating of faculty functions is successful, significant coaching is available for students, assessments are not given by the instructor but by a distinct evaluator, and students move through in a more self-paced manner.

In Florida, many institutions have excellent faculty development programs for online learning. For example, UCF stands out as providing high-quality faculty support services, through its Online@UCF program. Online@UCF provides faculty support services through ongoing, award

winning faculty training. Much of this training has been available for faculty for over 16 years, and UCF has been recognized as an international leader in online learning and professional development. The UCF model provides focused training and significant instructional design and media support while measuring metrics of quality, satisfaction, and success for each online offering. UCF also received a Next Generation Learning Challenge grant along with the American Association of Colleges and Universities to support the development and implementation of the Blended Learning Toolkit to support effective practices and training. This model provided free and open resources to anyone interested in blended learning as well as direct training with partner institutions.

UCF offers a comprehensive suite of faculty development programs that address a variety of instructional contexts as depicted in the table below.

- Designing and delivering original online and blended courses (IDL6543)
- Delivering already-developed online and blended courses (ADL5000)
- Designing and delivering original video lecture capture courses (IDV Essentials)
- Web-enhancing traditional face-to-face courses (Essentials of Webcourses@UCF)

Web Essentials	IDV Essentials	ADL5000	IDL6543
Available to teach "Web-enhanced" Face-to-face	Required to teach lecture-capture/ video streaming course	Required to teach existing online/blended course	Required to design and teach original online/blended course ($ stipend)
Technology Focus	Design and Delivery Focus	Pedagogy, Logistics, Technology Focus	Deeper Design, Delivery, and Teaching Focus
5 hrs	8 hrs	35 hrs	80 hrs

In addition, UCF provides a wide range of continuous and ad hoc faculty development, including:

- Faculty seminars in online teaching
- Open labs and workshops
- The teaching online pedagogical repository
- The blended learning toolkit
- Special topics sessions

Staff from UCF's Center for Distributed Learning are often recognized as experts in online faculty development in conferences and during benchmarking visits from institutions both in the United States and from around the world. UCF staff members are frequently engaged as expert consultants on online faculty development topics for other domestic and international colleges and universities.

Need

Many other states have successfully implemented faculty development services through a centralized approach. Florida should consider following other states' examples to attain cost savings by developing and delivering postsecondary faculty and administrator development services for online learning through a centralized approach and a train-the-trainer model.

Implementation Steps

The BOG and the FCS should jointly select one or more lead institution(s) to develop and implement statewide faculty development services for online education using a train-the-trainer approach. In this model, the selected institution(s) will focus its efforts on training key faculty training leaders and administrators on effective and proven ways to teach online learning. Institutions will be able to opt-in to these services as desired. One-time and potentially recurring legislative funding will be required for this initiative.

The following steps are required to implement this recommendation.

Step 1 - The BOG and the FCS should jointly select a lead institution(s) using a competitive procurement process.

The BOG and the FCS should jointly develop an RFP to select a lead institution(s) to lead the statewide effort for faculty and administrator development using a train-the-trainer approach.

Step 2 - In cooperation with the BOG and the FCS, the lead institution(s) should develop a detailed strategy and LBR for the delivery of statewide professional development services.

The selected lead institution(s), in cooperation with the BOG and the FCS, should define the role, responsibilities, timeline, and cost for statewide delivery of faculty and administrator development for Florida's universities and colleges using a train-the-trainer approach. The lead institution(s) should work closely with the proposed Online Learning Research Advisory Committee as outlined in Recommendation #1.

These planning efforts should result in a strategy and 2015 LBR request for implementation funding. The BOG and the FCS, in collaboration with the lead institution(s), should review the LBR and strategy for increased train-the-trainer faculty and administrator development for online learning with the appropriate statewide leadership groups as part of the state's normal budgeting process.

Step 3 - The BOG and the FCS should seek 2015 legislative funding (i.e., one-time and/or recurring) for the statewide faculty development for online learning initiative.

The BOG and the FCS should request one-time and/or recurring funding from the 2015 Legislature to implement statewide train-the-trainer faculty and administrator development for online learning.

Step 4 - The lead institution(s) should begin providing statewide train-the trainer services for faculty and administrator development for online learning.

The lead institution(s) should begin implementation of statewide train-the-trainer faculty and administrator development services. The lead institution(s) will then manage statewide train-the-trainer services that could include tangible recognition for completion (certificates, badges, completion letters for annual evaluation, etc.) through both online and site-based activity. The lead institution(s) should also leverage existing online professional development materials created by other institutions to place in an effective practices repository.

This strategy will not be appropriate for all online courses and programs in Florida. However, it is worth investigating as a way to reduce costs and to increase student retention and completion.

Cost Benefit

Coordinating and providing statewide train-the-trainer faculty and administrator development services for online learning will require startup funding for organization and infrastructure activities. These costs could be offset in future years through the exploration of cost recovery models. By centralizing these services, the State of Florida can attain cost savings over time.

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
BOG (in collaboration with FCS)	Step 1 – The BOG and the FCS should jointly select a lead institution(s) using a competitive procurement process.		Step 3 – The BOG and the FCS should seek 2015 legislative funding (i.e., one-time and/ or recurring) for the statewide faculty development for online learning initiative.				
Lead Institution(s)		Step 2 – In cooperation with the BOG and the FCS, the lead institution(s) should develop a detailed strategy and LBR for the delivery of statewide professional development services.		Step 4 – The lead institution should begin providing statewide services for faculty and administrator development for online learning using a train-the-trainer approach			

RECOMMENDATION #8 – CREATE AN EFFECTIVE PRACTICES REPOSITORY

FLVC should create an online repository for the collection of and access to proven and effective practices in the areas of online student services, faculty services, faculty collaboration, and workforce needs to support the advancement of online learning statewide.

Task Force Charge

The Task Force was charged with exploring "best practices that will lead to quality credit and noncredit programs" and "sharing information and resources." These topics were considered along multiple dimensions, including student services, academic affairs, faculty services, faculty collaboration, and workforce needs. In addition, the Task Force elected to use the term "effective practices" rather than "best practices" in recognition that there are many alternative solutions, not just one considered "best."

Current State and Research

Technology Tools to Facilitate Sharing

The charge to "share information and resources" was interpreted by the Task Force as the mechanisms that should be established to ensure dissemination of information and resources for statewide effective practices in online learning across key stakeholders.

To investigate and research potential solutions for the distribution of resources and information, the Task Force developed a matrix of popular resource-sharing tools. This matrix was distributed to members of Florida's online learning community to collect information on their use of the potential tools. Individuals with experience in online learning programs at private not-for-profit universities, public universities, for-profit four-year universities, and career colleges provided feedback. Results were collected and summarized.

Additional discussions occurred with FLVC on its current and intended tools for information dissemination. FLVC indicated it had in place an internally developed website and is upgrading to a new content management system (Liferay). In addition to supporting numerous transactions, Liferay offers a robust permission structure that provides for interaction at a variety of levels and through different methods (e.g., official notices, informal discussions, and wikis).

In summary, to provide statewide cost efficiencies through shared knowledge, a central location and repository for effective practices should be created by FLVC.

Student Services

The charge to "provide student support services in a collaborative, cost-efficient manner" included identifying those services specifically geared toward entry and matriculation of online students,

including, but not limited to orientation, registration, advisement, and academic support (tutoring, library services) for students enrolled in online programs.

The sharing of institutional information on school websites has become the standard for students to obtain knowledge of programs, services, and the academic offerings of the respective institutions. Student services readily fit into this model, including admissions, financial aid, housing, orientation, etc. These online services were originally created to serve traditional on-campus students, but can readily be extended to serve online students. These student services tend to be unique to each institution.

Student services can be more challenging in an online learning environment because of the perceived need for high levels of interpersonal contact between students and staff. Counseling, academic advising, healthcare, and other services have struggled with how best to provide services to the online learner. Recreation, student organization support, services for students with disabilities, and similar areas have yet to offer substantial online services. Interaction with students in an advising or mentoring context for online learning still presents a substantial challenge that has not been resolved in a cost-effective or scalable manner.

For institutions with strong commitments to online learners, some online support services exist such as new student orientation, tutoring using video and podcasts, and career development modules. These services are often embedded in eLearning platforms for maximum exposure to both online and on-campus students. However, in Florida, these student services for the online learner are being added at individual institutions without consideration for sharing across Florida's postsecondary systems. The only example of collaborative student support services identified in Florida was a loosely configured consortium comprised of SUS career centers that share a group license for MyPlan software.

Furthermore, at the state level there is minimal coordination and collaboration of student services for online learning through FLVC. Even though FLVC has a Members Council on Distance Learning and Student Services, there are only a few student services professionals represented.

Thus, little collaboration is evident in Florida among the universities and colleges for coordinated efforts in student services for the online learner. While the Task Force members indicated that the primary responsibility for student services for the online learner should remain with the student's "home institution," it was also generally recognized that collaboration and identification of effective practices were needed.

In summary, to begin a dialog on the need for common statewide student services, cross-institutional communication and sharing should occur. Once the communication begins, Florida's higher education delivery systems should decide what student services could be delivered statewide for the online learner (if any). Discussions should also include how student services should be offered to support the Task Force's recommendation for the development of a common online marketplace (Recommendation #2).

Faculty Services

The charge to "provide faculty support services" focused on identifying effective practices in faculty services, specifically related to faculty teaching load, use of contract faculty and adjuncts, and new models for instruction in online programs.

When investigating this topic, considerations included identifying strategies used across institutions, establishing collaboration facilities, and a focus on students (e.g., all effective practices must have the students' interests at their core). The topics included:

- All faculty (regardless of rank) training, incentives, and intellectual property issues associated with course development
- New models to reduce costs without reducing instructional quality, which may include disaggregating the tasks associated with a course, looking at wraparound services to support courses, coaching, mentoring, etc.

The Task Force discovered that state systems and individual institutions across the country offer faculty development services and support as a component of the overall online learning initiative. Faculty support services may include professional development, resource sharing, free or reduced-cost use of electronic resources, development of policies that affect faculty load, course quality, intellectual property, adjunct usage, and use of models that disaggregate the role of the faculty member.

Each individual institution's model is often unique to the institution and varies on the emphasis in online learning. Many states have a centralized entity, whether housed at the state level or through a designated institution, to coordinate statewide faculty online services.

Across the spectrum of U.S. higher education, states and individual institutions are focusing on how to reduce costs. Historically, institutions have treated online learning as an expansion of the existing classroom instruction model. With this philosophy, course size, curriculum, and the role of the instructor remain constant, which can increase the cost of online education.

At the national level, there are some very exciting innovations occurring that provide examples of how to promote collaborative, cost-efficient faculty services. Case studies include:

- ***Open SUNY*** - The SUNY Learning Network is now launching Open SUNY, with the goal of expanding open and online education while fostering innovation in teaching and learning through coordinated systems, projects, and alliances.
- ***UMass Online*** - UMass Online is a consortium of the University of Massachusetts institutions, with UMass Online serving as the portal for all online learning activity. Individual campuses approve courses and curriculum and assign instructors. Instructional design and technology-based services are available to help faculty reduce course development time.
- ***Illinois Online Network*** - The mission of Illinois Online Network (ION) is to promote and build foundations for developing faculty and to support enhanced online education. ION

hosts a comprehensive faculty development and administration program where faculty members earn certificates of recognition for completion. ION also hosts a faculty summer institute and awards badges to its faculty for completion of specific competencies for quality in online learning.

- ***Pennsylvania State System of Higher Education (PASSHE)*** - The system recently implemented a common statewide LMS to gain cost efficiencies. Additionally, PASSHE manages an annual virtual conference offering 60 one-hour webinars for faculty to attend, collaborate, and learn new things about online learning.
- ***University of Central Florida*** - UCF's Online@UCF program provides faculty support services through ongoing, award winning faculty professional development. Much of this training has been available for faculty for over 16 years, and UCF has been recognized as an international leader in online learning and professional development. Additional information on UCF's Online@UCF is located in Recommendation #7 - Create Statewide Faculty Development Center(s) for Online Learning.

Individual institutions in Florida have also invested heavily in online learning and have created support structures for course development and delivery. Each participating institution has strengths and can provide information of value to others. Several of these institutions have opted to share effective practices in online and blended education and contribute their efforts to the Sloan-C Best Practices or to FLVC. Additional institutional effective practices repositories include:

- University of Central Florida's Blended Learning Toolkit (http://blended.online.ucf.edu/) and the Online Teaching Pedagogical Repository (http:// topr.online.ucf.edu/index.php)
- Florida State University's Instructional Strategies Handbook (http://distance.fsu.edu/instructors/instructional-strategies)
- Florida International University's faculty-based effective practices website (http://online.fiu.edu/faculty/resources)

Through the Task Force's research, student feedback on faculty effectiveness was found somewhat lacking for reporting on online learning success. Institutions interviewed noted the need for such data gathering and analysis, but no clear structure or methodology was offered.

In summary, leaders exist in Florida's state university and college systems from which effective practices in faculty services, based on experience and empirical studies, can be developed and collected. This expertise can facilitate the creation of a repository of effective faculty service practices accessible to all Florida postsecondary institutions. This facilitation role can be led by FLVC, with resulting findings stored in a central repository. Parallel to this activity, the Task Force recommended selecting a lead institution to spearhead and deliver statewide efforts for faculty development for online learning (Recommendation #7).

Faculty Collaboration

The charge on "encouraging inter-institutional faculty collaboration in course development" included identifying methods to encourage faculty in different ways to collaborate on course

development, in light of intellectual property rights and other considerations that may prevent faculty from different institutions jointly developing courses.

Most online materials are developed by the faculty teaching the course, acquired from a textbook publisher, or acquired from an existing repository such as The Orange Grove or MERLOT. In some cases, institutions are engaging the services of vendors to work with faculty to develop online materials. In other cases, a master course is developed and made available to all faculty members at the institution; however, such courses are rarely shared across institutions. When collaboration does occur among faculty in course development, the scenario is typically a team including one faculty member as a subject matter expert who works with others such as instructional designers and media specialists.

While two or more faculty may develop a master course, there is little evidence of teams of faculty jointly developing online courses. A more common occurrence is the peer review of online courses. The most widely known formal process is Quality Matters, which is faculty-centered and based on continuous improvement and peer review.

Faculty members are encouraged (typically by payment or course release) to develop learning objects and to make those learning objects available to others through searchable repositories such as The Orange Grove. The Orange Grove, managed by FLVC, could be a valuable resource to support faculty collaboration. While The Orange Grove has existed for many years and has been used as an example of effective practices by other states, there has been minimal support of The Orange Grove in Florida.

In summary, there are opportunities for collaborative development of courses, but these efforts will need to be planned through a statewide working group. In addition, as outlined in Recommendation #6 - Enhance and Expand the Learning Resources Repository, Florida's postsecondary institutions should update or replace The Orange Grove repository. While The Orange Grove has served as a useable tool, changes in both technology and faculty adoption are required to better support course development efforts.

Academic Affairs

The charge to identify "best practices that will lead to quality credit and noncredit programs" included defining a process to enable educators to share information about programs and processes that are noteworthy or that deserve both recognition and adoption statewide.

The Task Force conducted a comprehensive review of the following areas to identify effective practices for academic affairs:

- Benchmarks, principles, and guidelines for online education for the institutions
- Effective practices in teaching strategies for online learning and assessment for faculty
- Exemplary programs that illustrate effective practices (Quality Matters, Sloan Consortium Quality Scorecard, Florida Exemplary Postsecondary Programs, etc.)

The research on effective practices in academic services revealed the following. While some of the findings from this research cross into other areas such as faculty services and student services, they are all contained here as part of the overall assessment of effective practices for academic services.

- ***Studies for online teaching failed to include all the items that are normally required in face-to-face settings.***

  The online student needs to know how to obtain academic advising, financial assistance, peer support, library access, etc., regardless of time of day or campus environment. Online librarians need to be in place for the student who does not understand how to access the materials, conduct formal research online, or avoid plagiarism.

  Tutorials need to be in place for all those "after-hours" or frequently asked questions. Assessment tools need to be linked to measurable standards or benchmarks. Students need to be assessed regarding their learning capacity and level, their technology skill readiness, learning styles or preference, and preferred social and student engagement. Few of the effective practices models addressed these items.

  Online faculty should have load assignments and teaching assistants equitable to other faculty teaching face-to-face. None of the effective practices models addressed load capacity for online classes by type or structure.

  Faculty training was mentioned frequently, but rarely specifically. A common view was faculty should be trained not only in their content area, but also in the use of the technology and workarounds when the technologies do not work. Only a few of the reports noted that the faculty needed training in how to work with diverse students across states, countries, time zones, cultural groups, etc., and the importance of turnaround time for engagement.

- ***The effective practices models did not always address the needs of students with disabilities.***

  The lack of Universal Design for Learning was evident in many of the studies reviewed. By designing online courses that center on multiple means of representation, multiple means of action and expression, as well as multiple means of engagement, the faculty and student take the learning back to the community and additional learning occurs. This practice, though designed for students with disabilities, helps all learners to be empowered.

  For postsecondary online learners, many may be returning to the classroom after a long disengagement. Other postsecondary online learners may have undiagnosed learning disabilities and need multiple structures to reach them to make them successful in the classroom. These same structures may also engage the learners that do not have a disability. There was no evidence provided in any of the studies of a learning assessment or a technology assessment as built-in tools for the online delivery.

  None of the effective practices models addressed the use of adaptive technologies that can aid both the student with disabilities and the student who has no disabilities. Tools enhance

communication and can include digital text for visual and auditory impairments, memory tools, graphics and video tools, internet tools, virtual meetings, avatar coaches, etc., that may assist the postsecondary online learner that has minor sight or auditory impairments. Since many of the postsecondary learners are older and may have visual or auditory issues or may not have been exposed to the newer technologies, these components need to be addressed in an effective practices model.

In summary, the Task Force found many areas where effective practices for academic support services did not exist. This deficiency provides an opportunity for Florida to collaborate for improved academic support services for the online learner. In particular, statewide practices for delivering online services for students with disabilities should be addressed.

Workforce Needs

The charge to "align online programs with identified state economic development needs and student demand" included assessing institution's use of state-level market data and the use of effective practices for integrating workforce needs with online programs.

The Task Force examined effective practices the individual universities and colleges currently use for alignment of workforce needs with their programs. Recommendations related to effective practices are contained in this section. Tasks related to extending the use of market research data and the refinement of what data are provided are contained in Recommendation #4 – Enhance Labor Market and Employment Statistics for University and College Online Program Development and Delivery.

To investigate the alignment of workforce needs with the institutions' delivery of academic programs, information was collected from a sample of universities and colleges regarding their online programs. These discussions covered how online programs and courses were selected over time, the role the job market played in these program discussions, and use of labor data. The institutions surveyed had strong business advisory boards and interfaces with companies for input into program and institutional planning efforts. For a synopsis of these interviews, please see Recommendation #4.

In summary, Florida universities and colleges already have online programs geared to job market needs. Some institutions are tightly aligned to employer needs and some are only loosely aligned. While it was evident that data sharing on job statistics could be improved, business advisory boards and business partnerships appeared strong. The interviews identified some effective practices that should be shared and used by Florida's universities and colleges. These effective practices should be gathered and provided through FLVC for use by all postsecondary institutions.

Need

A central repository for effective practices can provide statewide cost efficiencies through shared knowledge. Florida's higher education institutions want to capitalize on their collective expertise by increasing statewide collaboration to identify effective practices in the areas of course development,

faculty services, assessment, MOOCs, and student services. To achieve cost efficiencies, there is a desire to identify and share effective practices, to collect effective models used by institutions throughout Florida and the world, and to make them available in a central statewide repository for all to use.

Implementation Steps

FLVC should create an online repository for the collection of and access to proven and effective practices in the areas of online student services, academic affairs, faculty services, faculty collaboration, and workforce needs. These effective practices should reside within a repository for access and use by the institutions. The access and use of the materials should be tracked and monitored to determine if the repository provides lasting value to the institutions. Ongoing marketing efforts will facilitate institutional awareness of its existence.

The following steps are required to implement this recommendation.

Step 1 - FLVC should create working groups or assign tasks to existing groups to identify effective practices.

FLVC's Members Council on Distance Learning and Student Services frequently charters working groups to explore topics and to report their findings to the membership at large. The Task Force recommends creating effective practices working groups for the following areas, or assigning these tasks to groups already in existence:

- Effective practices in student services for the online learner
- Effective practices in faculty services for online learning
- Effective practices in faculty collaboration in the development of online courses and shareable electronic materials
- Effective practices in academic services for online learning
- Effective practices to enhance workforce alignment

The working groups should create guidelines as to what materials are appropriate for the effective practices repository as well as how materials will be evaluated for inclusion.

- ***Task 1 - Identify effective practices in student services for the online learner.***

  Once student services are better represented within FLVC's structure, a new or existing working group should be tasked to identify areas for increased collaboration in student services. This group should also identify effective practices. The following activities should take place:

  - Develop a survey for the universities and colleges that offer fully online degree programs to determine the commonalities related to systems used to deliver online learning and how student services are delivered. While FLVC should administer the survey, state-level support will be needed to ensure that all institutions respond to it.

- Investigate large private enterprises that are able to offer extensive consulting and infrastructure support for online initiatives. It is possible that a key reason they have not entered the market to provide online student services is the lack of interest by Florida institutions.
- Assess the ability for current online services to become shared resources and determine if cost-effective practices are possible.
- Begin collating effective student services practices from Florida's postsecondary institutions and others across the nation to begin developing a statewide repository.
- Recommend means to assure that institutions promote use of the repository and adopt effective practices.
- Recommend means to recognize faculty and institutions that implement effective practices.

Any recommendations for change in providing statewide student services for the online learner should be provided to the Members Council for consideration. Identified effective practices should be placed in the repository.

- ***Task 2 - Identify effective practices in faculty services for online learning.***

  FLVC should assign a new or existing working group to identify effective practices in faculty services for online learning. This group should identify effective practices in faculty support services and compile them into a central repository. Within the repository, a community of practices by faculty services discipline should be established. The group should also explore ways to incorporate student feedback on online sources and faculty member effectiveness. Any recommendations for change in statewide faculty services for online learning should be provided to the Members Council for consideration.

- ***Task 3 - Identify effective practices in faculty collaboration in the development of online courses and shareable electronic materials.***

  FLVC should assign a new or existing working group to identify effective practices for faculty collaboration. This working group should focus on topics such as:

  - How to increase faculty collaboration in master course development
  - Procedures for denoting peer reviews of any courses provided through FLVC's distance-learning catalog
  - How to accommodate and process any online materials that have a Creative Commons license and therefore must be shared
  - Recommend means to recognize faculty and institutions which implement effective practices

  Any recommendations for change in statewide faculty collaboration for course development should be provided to the Members Council. Identified effective practices should be placed in the repository.

- ***Task 4 - Identify effective practices in academic services for online learning.***

  FLVC should assign a new or existing working group to identify effective practices for academic affairs. This working group should focus on activities such as the following:

  - Conduct a review of the Universal Design for Learning model across the state or develop a more comprehensive approach to integrating current practices and technologies for students with disabilities.
  - Clearly define the standards needed to tie the learning and teaching to the strategic plan from the classroom level to institutional leadership.
  - Identify new methods of engaging students (e.g., use of gamification, social media, eTextbooks, and online resource centers).
  - Identify more student-driven services for engagement or service learning in the community.
  - Recommend means to recognize faculty and institutions which implement effective practices.

  Any recommendations for change in statewide academic services for the online learner should be provided to the Members Council for consideration. Identified effective practices should be placed in the repository.

- ***Task 5 - Identify effective practices to enhance workforce alignment.***

  FLVC should assign a new or existing working group to identify effective practices for aligning postsecondary programs and courses to workforce and employer needs. This should include practices such as the following:

  - The use of labor statistics or other market demand indicators to guide the university and college systems in their strategic planning processes, including a description of how new online programs can be aligned with state and regional employment needs
  - The creation of business advisory boards or business partnerships to support the identification of new online programs, leveraging and replicating effective practices among the institutions' online programs
  - Recommendations for how university and college online program offices should consult with external or business advisory boards during the development of new online degree programs
  - The potential formation of new advisory boards to provide advice on the use of internships and job placement needs
  - The assignment of a workforce coordinator for the online program areas to oversee activities related to the alignment of online programs with employer needs
  - Recommend means to recognize faculty and institutions which implement effective practices

  Identified effective practices to enhance workforce alignment should be placed in the repository.

Step 2 - FLVC should create an effective practices repository.

FLVC is implementing Liferay as the foundation for its future web presence. To configure it for the effective practices portal, FLVC will need to create the structure for storing each of the recommended effective practices, establishing methods and guidelines for updating the content, creating procedures for information dissemination, and determining how to monitor its use to assess ongoing value.

Step 3 - FLVC and its Board of Directors should identify methods to increase student services participation in the discussion of online learning.

FLVC, in collaboration with its Board of Directors, should either identify strategies to increase student services participation in the Members Council on Distance Learning and Student Services or seek a different venue for this input. Alternatively, there may already be informal consortia among the institutions that could be expanded to provide a platform for collaborative relationships. However, without a state-level mandate, these consortia will remain low profile and will probably not be cost effective. For these reasons, FLVC is best situated to recommend a course of action for increased discussions in the area of online student services.

Cost Benefit

This recommendation will require some initial investment for implementation, but will yield great benefits by harnessing and leveraging the expertise of Florida's postsecondary institutions and of others beyond the state. By identifying effective practices and placing them in a common repository, all Florida institutions can have access to a vast library of resources to improve and to innovate their local practices. As the repository begins to be implemented, a marketing campaign to the institutions will increase the adoption of effective practices.

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
FLVC	Step 1 – FLVC should create working groups or assign tasks to existing groups to identify effective practices. Step 2 – FLVC should create an effective practices repository.	Step 3 – FLVC and its Board of Directors should identify methods to increase student services participation in the discussion of online learning.					

RECOMMENDATION #9 – ENHANCE DATA COLLECTION EFFORTS FOR ONLINE LEARNING

Using their existing statewide data collection procedures, the BOG and FCS should expand their data collection processes and common definitions for online learning to gather data on access, quality, and cost. Additional efforts should include exploring and researching the use of FETPIP data to identify workforce and employment trends.

Task Force Charge

The Task Force was charged with exploring "improved data collection at the institutional and system levels," as well as "data collection efforts should be adequate for tracking performance on accountability measures and cost components involved in the development and delivery of distance learning courses, as well as student feedback regarding the delivery and support of online education."

Current State and Research

In Florida's public postsecondary system, multiple entities are involved in collecting online learning data.

Board of Governors and Florida College System

The BOG's Office of Institutional Research is responsible for statewide collection of data on a scheduled basis from each of the Florida universities. The FCS has a similar unit, the Office of Research and Analytics, which collects standard statewide data from Florida's colleges. These units both work with statewide user committees comprised of individuals from each system's institutional research group. These statewide user groups meet regularly to determine what data to collect and to set data element standards and vocabularies to ensure valid conclusions can be derived from statewide data. Both units produce annual Fact Books that summarize this information for legislative and statewide use.

For online learning, the BOG and the FCS data units both collect the same set of data elements for courses that are 80% or more online (the working definition of fully online courses), including the delivery method (modality) for each course. These data elements have been included in the BOG's Student Data Course File since 1998-1999. The FCS has likewise collected online learning data since 1998-1999. Both systems collect data to the six-digit Classification of Instructional Programs (CIP) level. The FCS adds two prefix and two suffix characters. In addition, BOG obtains data on whether each SUS institution collects a distance-learning course fee. Fee data are also periodically collected.

The BOG publishes its online learning data in the annual Accountability Report, and distance learning Full Time Equivalent projections are included in the annual university work plans submitted to the BOG. These reports are posted on the BOG website. FCS produces standard reports

on online headcounts and FTE counts. Both the BOG and FCS system offices respond to ad-hoc inquiries from legislators and others.

Future BOG and FCS data collection plans include collecting additional student-level online course data. BOG plans to collect data on those SUS institutions' online programs offered to distant students.

Florida Education and Training Placement Information Program

For employment placement data on graduates of Florida's postsecondary institutions, both the BOG and the FCS rely on data from the DOE's FETPIP. Section 1008.39, F.S., created FETPIP to provide follow-up data on former students who have graduated, exited, or completed a public education or training program within the State of Florida. FETPIP accomplishes this task by matching student information with employer-provided data.

Florida Virtual Campus

FLVC serves as the repository for SUS and FCS institutions' online program data and maintains a catalog of such programs with Web links to individual institutions. The online program list is currently updated twice a year. FLVC also processes, but does not retain, transactional data regarding student access to this online course information as well as transactional data related to student applications for the transient student process (i.e., when a student wants to take an online course from another institution). FLVC is also required by law to collect information on those online courses that require payment of a distance learning course fee. In 2013, this data collection requirement was extended to online programs.

FLVC systems and related information are primarily intended to help students find online programs, initiate transient enrollment requests, and link the student to a university or college for needed services. Outside of collecting and reporting on online course and program fees, FLVC does not collect system-level data for research or planning purposes.

Focus Areas

Based on this information, BOG, FCS, and FLVC agree work is needed to update and refine distance learning modality definitions and to refine and enhance statewide data collection for online learning. The following areas should be taken into consideration as work in the area of statewide data collection proceeds.

- ***Online Learning Vocabulary*** - A common vocabulary, or set of terms, needs to be developed for online learning to be used across institutions and systems to establish a common understanding and draw valid conclusions.
- ***Data Dictionary*** - A common data dictionary for online learning should be created to define the terms in very specific ways to guide institutions in extracting data from their internal systems and thereby reporting common information. Examples are terms describing course modalities and defining the distinctions among modalities.

- ***Access, Cost, and Quality Dimension*** - Performance metrics should be identified and agreed to in order to establish data collection procedures to assess access, cost, and quality dimension on a statewide basis.
- ***Academic Analytics*** - Academic analytics is the use of institutional ERP or LMS data to define predictive pathways of student success and the role online learning plays in influencing that success. The use of analytics should be examined by each institution and as part of the proposed statewide common LMS as detailed in Recommendation #3. Many institutions that currently have the technical capacity to gather analytics data from their current systems are using them to promote improved student success, while those institutions not yet using analytics should be encouraged to do so.
- ***Student Placement*** – The employment data generated by FETPIP can potentially measure differences (if any) between students taking fully online programs compared to fully on-campus programs (which would include students taking online, blended, and face-to-face courses as part of their on-campus experience).

Need

Existing state-level data collection efforts do not currently encompass the information needed to track Florida's progress in online learning courses and programs in terms of access, quality, cost, and later employment. Expanded data collection processes are needed to more accurately measure the development and outcomes of online learning.

Implementation Steps

Using their existing statewide data collection procedures, the BOG and FCS should expand their data collection processes and common definitions for online learning to gather data on access, quality, cost, and future employment. The following steps are required to implement the recommendation.

Step 1 - The BOG's Office of Institutional Research and the FCS's Office of Research and Analytics should establish a plan for extending data collection efforts for online learning.

While data collection by BOG, FCS, and FLVC are coordinated to an extent, enhanced data collection efforts could result in the collection of essentially similar online learning data by multiple agencies. Because the BOG and FCS already have entities responsible for obtaining statewide data on student, financial, and human resources, these units are the logical entities to extend and enhance data collection for online learning. This approach will ensure online learning data are collected in a unified manner from the institutions, housed in existing master databases, and consistently reported to all agencies that require the data for analysis and reporting.

At the same time, FLVC's Members Council on Distance Learning and Student Services provides an avenue for the BOG and FCS data units to obtain input on what types of data should be collected. This group should also examine what type of statewide reports on online learning should be generated from the data for analysis purposes. Because there are two separate reporting processes

(BOG and FCS) and multiple databases to capture this state-level information, reports and analytics that meld the data between the university and college sectors are critical.

This assessment of what reports would be desired by the institutions should include identifying what transactional data from the online catalog will be meaningful. Assisted by legislative funding, FLVC has recently embarked on a multi-year project to modernize and enhance the online course and degree program catalog. The initial phase of the project will result in the ability for both FLVC and the institutions to generate a number of reports as required by Section 1006.73, F.S. As planning continues for the second phase of this project, FLVC should work with its Members Council on Distance Learning and Student Services to identify additional desired analytics and build those capabilities into future phase of the project plan. As part of this consultation, FLVC should explore alternate dissemination and access methods to the online course catalog analytics.

Step 2 - The BOG and FCS data collection units should establish metrics, create definitions, and identify data elements to enhance data collection for online learning.

There are multiple tasks required to extend Florida's data collection efforts to online learning, including the following:

- ***Task 1 - Develop, publish, and maintain a vocabulary for online learning.***

  In a multi-organizational collaborative environment spanning the state's postsecondary sectors, common understandings and definitions are foundational for conversations, decisions, and management. The BOG's Office of Institutional Research and the FCS's Office of Research and Analytics should create and maintain a vocabulary for online learning developed in cooperation with FLVC's Members Council on Distance Learning and Student Services.

  In addition to access, quality, and cost metrics, other data elements to be added and defined for statewide data collection processes are:

  - ***Online Certificate Program Data*** - Florida institutions offer not only online degree programs, but also online certificates at both the graduate and undergraduate levels. Institutional reporting should be expanded to include certificate programs offered, along with the associated modalities.
  - ***Course Length and Start Dates*** - Data collection protocols currently assume that all online courses are offered in a standard 14-week semester format. Increasingly, online courses are being offered in 7 week, 7.5 week, 8 week, and other shorter formats with five or more "starts" per academic year. This allows students to complete more courses per year, or sequentially blend work or other activities with course taking, both of which can facilitate access to higher education and more rapid and efficient completion. Course length and start dates should be added to the data collection process when shorter course formats are applied.
  - ***MOOCs and Blended Courses*** - Additional information on MOOCs should be collected including subject area, provider (e.g., Udacity, Coursera, edX, Canvas

Network, etc.), and blended learning courses (which are typically less than 80% online).

- ***Task 2 - Establish metrics to represent access, quality, and cost dimensions for online education in Florida.***

  Key performance metrics to measure online learning must be identified, defined, and commonly understood before statewide data collection efforts can begin. The BOG's Office of Institutional Research and the FCS's Office of Research and Analytics should spearhead this process, in cooperation with FLVC's Members Council on Distance Learning and Student Services.

  Key performance metrics for the coordination, support, and outcomes of online education in Florida are access, quality, and cost. The following recommendations represent the most general quantification of those variables, with the focus on the utilization of currently existing data elements and those most easily obtained by all institutions.

  - ***Access***

    The access dimension should be measured by collecting each academic term by student and course level — lower level undergraduate, upper level undergraduate, and graduate — the number of course sections, course enrollments (e.g., duplicated headcount), and student credit hours generated for each online learning modality, as well as standard classroom-based instruction. This will allow measurement and analysis of trends, both online and on–campus, on a modality-by-modality basis. An additional explanatory variable gauging the impact of online learning across the state is the number of students taking only online courses or only face-to-face courses on a per-term basis.

  - ***Quality***

    Attributes, metrics, methods, and materials to adequately document each aspect of performance are activities that are the purview of the accredited institution delivering the online academic program or course. The student outcomes of online education should mirror those of the on-campus academic experience, and thus, the measurement of online quality should mirror those efforts to measure quality of the on-campus experience. At a minimum, the quality dimension should be measured by student success in individual courses, both online and face-to-face. It is recommended student success data be collected by modality for each academic term, with student success defined as attainment of a course grade of A, B, or C. Lesser grades would be regarded as non-successful outcomes. Every academic program has defined learning outcomes, but the cost of documenting a broadly coordinated assessment per course would be prohibitive.

- ***Cost***

  The cost dimension of online learning is one of the least understood measures, both nationally and in Florida. A widely held assumption is that online courses cost significantly less to develop and deliver than do the equivalent on-ground courses. The experience of most public institutions with online offerings is that this assumption does not hold true until an online initiative achieves significant scale, and perhaps not even then because of the additional technical, human, and support resources needed to launch and sustain a high-quality online program.

  Development of cost measures from Florida institutions will provide a foundation for fact-based planning and projections. As new delivery models develop, and as the collaborative activities recommended in this report are deployed, the cost dimensions and the impact of changes can be assessed as Florida institutions of higher education seek to provide cost-effective educational opportunities. The direct institutional costs for developing and delivering online courses should be collected on a fiscal year basis.

  Specific cost elements are to be determined, but can likely include those elements published in a Florida Distance Learning Consortium 2009 Task Force report. Institutions that have implemented the distance learning course fee already track the costs of developing and delivering online courses and programs and can therefore readily report such data. Institutions that have not previously tracked these costs can benefit from the experience and methods of those that have.

- ***Task 3 - Develop, publish, and maintain a data dictionary for online learning.***

  After a common vocabulary is established, a common data vocabulary and associated data dictionary are needed to maintain the consistency and quality of the data collected. The BOG's Office of Institutional Research and the FCS's Office of Research and Analytics should develop the data dictionary for expanded data collection for online learning in cooperation with their respective institutional committees. The resulting vocabulary for online learning should be included as part of the existing data elements dictionaries used by the institutions.

Step 3 - The BOG and FCS data units should establish indicators to allow for separate analysis for fully online programs.

As part of the previously described data collection and definition processes, the BOG should establish data protocols to allow for separating data submitted by institutions for fully online programs from the rest of the institution's data.

Step 4 - The BOG and FCS data collection units should analyze FETPIP data to assess if online education has an impact on postsecondary employment and wages.

The BOG's Office of Institutional Research and the FCS's Office of Research and Analytics should lead an effort, in collaboration with UF Online Research Center, to examine if online learning has an

impact on a graduate's employment and wages. During the Task Force efforts, UF's Online Business Program offered to leverage its student data and employment survey data to begin this effort.

Cost Benefit

Because this recommendation uses existing data collection units and statewide processes, no additional funding is required. Implementing this recommendation will benefit the state by providing additional information for drawing conclusions about Florida's postsecondary online learning to increase quality, cost effectiveness, and access.

Implementation Timeline

	Jan-June 2014	July-Dec 2014	Jan-June 2015	July-Dec 2015	Jan-Jun 2016	July-Dec 2016	Jan-Jun 2017
BOG and FCS Data Collection Units	Step 1 – The BOG's Office of Institutional Research and the FCS's Office of Research and Analytics should establish a plan for extending data collection efforts for online learning.	Step 2 – The BOG and FCS data collection units should establish metrics, create definitions, and identify data elements to enhance data collection for online learning. Step 3 – The BOG and FCS data units should establish indicators to allow for separate analysis for fully online programs.	Step 4 – The BOG and FCS data collection units should analyze FETPIP data to assess if online education has an impact on postsecondary employment and wages.	Data Collection Continues			

APPENDIX A – ACRONYMS

Acronym	Definition
ACE	American Council on Education
BOG	Board of Governors
CAS	Central Authentication Service
CIO	Chief Information Officer
CIP	Classification of Instructional Programs
COTC	College Open Textbooks Collaborative
CS	Committee Substitute
DEO	Florida Department of Economic Opportunity
DOE	Florida Department of Education
ERP	Enterprise Resource Planning
F.S.	Florida Statutes
FCS	Florida College System
FETPIP	Florida Education and Training Placement Information Program
FIPSE	Fund for the Improvement of Postsecondary Education
FIU	Florida International University
FLVC	Florida Virtual Campus
FSCJ	Florida State College at Jacksonville
HB	House Bill
ICUF	Independent Colleges and Universities of Florida
IMS	Instructional Management System
ION	Illinois Online Network
IT	Information Technology
LBR	Legislative Budget Request
LMS	Learning Management System
MBA	Master's of Business Administration
MOOCs	Massive Open Online Courses
NCAT	National Center for Academic Transformation
PASSHE	Pennsylvania State System of Higher Education
RFP	Request for Proposals
SACS	Southern Association of Colleges and Schools
SB	Senate Bill
SBE	State Board of Education
SCORM	Sharable Content Object Reference Model
SIF	Schools Interoperability Framework
SPC	St. Petersburg College
SUNY	State University of New York
SUS	State University System
UCF	University of Central Florida
UF	University of Florida
UWF	University of West Florida

APPENDIX B – LIST OF TASK FORCE MEMBERS

Name	Organization
Dr. Joel Hartman, Chair Vice Provost for Information Technologies & Resources and CIO	University of Central Florida
Ruth Ann Balla Executive Director, Virtual College	Miami-Dade College
Craig Blazejewski Director, Interactive Marketing	Valencia College
Dr. Valerie Bryan Professor, College of Education	Florida Atlantic University
Jana Kooi President, Open Campus	Florida State College at Jacksonville
Dr. Andy McCollough Associate Provost for Teaching & Technology	University of Florida
Kathryn McFarland Vice President for Enrollment	Saint Leo University
Angelia Millender Vice President, Student Affairs	Broward College
Dr. Michael Moore Associate Vice President, Decision Support	University of South Florida
Don Muccino Executive Director	Florida Virtual Campus
Dr. Pam Northrup Associate Provost of Academic Innovation	University of West Florida
Paul O'Brien Vice President of Institutional Technology & CIO	Indian River State College
Myron Pincomb Trustee, University of North Florida	The Pincomb Group
Dr. Mike Rollo Vice President of Student Affairs	Florida Gulf Coast University
Rebecca (Becky) Rust Chief, Bureau of Labor Market Statistics	Florida Department of Economic Opportunity
Dr. Eddie Wachter Professor, College of Engineering & Information Sciences	DeVry University
Dr. Doug Wartzok Provost & Executive Vice President	Florida International University
Dr. Nancy McKee Associate Vice Chancellor (BOG liaison to Task Force)	Board of Governors, State University System

APPENDIX C – CS/HB 7029 REVIEW

As part of its charge, the Task Force reviewed relevant sections of CS/HB 7029. The table below matches the Task Force recommendations with the language in CS/HB 7029. For the purpose of this review, the Task Force considered all aspects of online delivery, including online courses, MOOCs, and competency-based online courses.

CS/HB 7029	Relevant Task Force Recommendations
Improving access to online courses and approving, funding, holding providers accountable, and awarding credit for such courses.	• Recommendation #2 - Implement a Statewide Common Online Marketplace for Students • NOTE: there are already more than 700 online programs offered by Florida postsecondary institutions.
Identify measures of quality based upon student outcomes, such as completion and achievement rates correlated appropriately to each delivery model.	• Recommendation #9 - Enhance Data Collection Efforts for Online Learning • Recommendation #5 - Develop and Deliver Statewide For-Credit MOOCs
Measures for students to demonstrate competency, such as prior learning assessments, end-of-course exams, assessments established by regionally accredited public institutions (which may be applied as one whole assessment or as two or more discrete sub assessments such that when combined the sub assessments are equivalent to a whole assessment).	• The Complete Florida Degree Program, led by the University of West Florida will address competency-based programs and assessment of prior learning. The project will involve multiple state universities, and project outcomes will be shared statewide.
Opportunities to use online courses, including MOOCs, using blended learning or other tools delivered in modules or segments to provide instruction.	• Recommendation #5 - Develop and Deliver Statewide For-Credit MOOCs • Recommendation #9 - Enhance Data Collection Efforts for Online Learning • Course segments is related to course packaging and scheduling, which will be considered as part of Recommendation #5- Develop and Deliver Statewide For-Credit MOOCs, and evaluated as part of Recommendation #9 - Enhance Data Collection Efforts for Online Learning.
Beginning in the 2015-2016 school year, the State Board of Education and the Board of Governors shall adopt rules that enable students to earn academic credit for online courses, including MOOCs, prior to initial enrollment at a postsecondary institution.	• Recommendation #5 - Develop and Deliver Statewide For-Credit MOOCs

APPENDIX D – FLVC LBR REVIEW

The Task Force was asked to review FLVC's LBR and provide feedback. The matrix below summarizes the Task Force's recommendations. FLVC's LBR language is provided on the following pages.

Legislative Budget Requests	
Issue	**Task Force Recommendation**
Advising Modernization	The Task Force endorses this budget request.
Science, Technology, Engineering, and Mathematics (STEM) E-Resources	The Task Force endorses this budget request.
Video Streaming and Multimedia Resources	The Task Force endorses this budget request.
Common Learning Infrastructure	The Task Force endorses this budget request.
Degree Connect	The Task Force endorses this budget request with the caveat that resources become available to the institutions.
Educational Positioning System (EPS)	The Task Force recommended that this budget request be reviewed by a larger audience, to include academic provosts, institutional financial aid offices, and student services offices.
Database Record Clean-up and Enhancement	The Task Force endorses this budget request.

FLVC Potential Candidate Programs for FY 2014-15 Legislative Budget Request (LBR)

Advising Modernization:

The Florida Virtual Campus suite of student advising services utilizes a core software infrastructure that was originally created from existing systems and a customized code base that was assembled in the late 1990s when FACTS.org was established. Although the original applications have been enhanced with new functions and additional services have been added, the original code base remains the foundation of the system. FLVC's suite of advising services depends upon the original FACTS middleware that manages the records transactions among the institutions. Currently, critical portions of the advising software infrastructure are running in technology environments no longer supported by the original vendor and system upgrades cannot be performed unless the applications can be rebuilt using updated technology. Those components at risk comprise critical services including the 2+2 transfer evaluations, the degree audit functions, and the transient student admissions process. The funds requested would be used to modernize and enhance the core advising software infrastructure, and to further increase the efficiency and ease of use of the system for institutional partners and users consistent with current technology and strategic directions desired in a next-generation advising system.

Science, Technology, Engineering, and Mathematics (STEM) E-Resources:

The State of Florida has recognized the need to address a growing deficiency in science and mathematics education, and has passed legislation that calls for a "Unified State Plan for Science, Technology, Engineering, and Mathematics (STEM)." While the current statewide allocation to FLVC for the purchase of electronic resources for the State University System and the Florida College System does allow for a number of interdisciplinary and subject-specific resources, it does not provide for a consistent level of access to STEM resources available to all students enrolled in state-funded postsecondary education in Florida, nor does it allow for the smaller universities and colleges to provide a broader range of research-intensive STEM resources. Additional statewide funding for STEM resources would ensure consistent access to resources critical to the support of science and math programs at all levels of higher education across the state.

Video Streaming and Multimedia Resources:

Statewide funding for video streaming and multimedia resources would provide a consistent level of access to educational content in support of online learning across higher education curriculum. While current state-funded electronic resources include images, videos, and other interactive programs, these supplemental resources are not sufficient to meet the needs of postsecondary education distance learning courses and degree programs. Due to budget constraints, only a few institutional libraries currently subscribe to video streaming collections, and the majority of Florida students do not have access to high quality educational videos and multimedia resources. Funding for a large collection of multimedia resources that broadly support the college curriculum would provide a basic core of resources to support most college courses. These resources could be incorporated into local institutional learning management systems, course management systems,

and alternate textbooks. Librarians, faculty, and distance learning services would collaborate to determine other resources needed to support distance learning courses and programs.

Common Learning Infrastructure:

Although Florida has exemplary policies such as articulation agreements and common course numbering that facilitate student transactions between institutions, the technological connections among institutions have proven to be problematic. While many other states do not have the advantageous policy environment present in Florida, many states with significant e-learning capabilities share a common technical infrastructure (learning management system and/or student information system) among their institutions. Although Florida colleges and universities currently possess significant technical capabilities with regard to e-learning and web-based services, those capabilities are varied in depth and type. Recent efforts to connect Florida's public postsecondary institutions to complete the transient student admissions process have further illustrated how the different technical infrastructures have actually made the envisioned streamlined, automated connection of institutions into a statewide system much more difficult. The funds requested would be used to develop an analysis and implementation plan for the establishment of a common technical infrastructure for learning among Florida's colleges and universities. The plan would include the creation of common technical standards among institutions for the interconnection of existing and new enterprise resource planning (ERP) and learning management systems (LMS), provisions for the increased security of educational records, and a robust user authentication environment. Cost models for a shared common technical infrastructure would also be explored.

This funding request aligns with another state-level planning effort. The Chancellor of the State University System has recently formed the Task Force on Postsecondary Online Education in Florida, with a charge to recommend strategies for better coordinating services and online programs in the State University System and Florida College System and, to the extent feasible, across other delivery systems to ensure state economic development needs and student demands are being met in an effective and cost-efficient manner. Depending on the recommendations made by this task force, the requested funds could be used as funding for a pilot implementation of recommended strategies.

Degree Connect:

Based on the successful DirectConnect to UCF model, Degree Connect would assist new students in charting their path to a bachelor's degree from their first semester in college. When students enter an A.A. degree program at a state college, they could, at the time of admission, declare their intent to earn a bachelor's degree from a partner state college or university. All schools would be permitted to partner with any other. Participating students would be considered provisional bachelor's degree students from the moment they enter college. Targeted advising and concierge services would help the students stay on track. The students would earn A.A. degrees at the college and then transfer to the partner institution of their choice to complete the B.A. or B.S. degree. The last two years of the baccalaureate program would then be completed online (for distant institutions) or in a combination of face-to-face and online courses (for a local institution). FLVC could serve in a facilitative manner, providing support services to those institutions that elect to become partners. In addition to helping

the student stay on a degree track, the opportunity for reduced cost to degree exists via the reduction of campus-oriented fees for students who complete all of their coursework at a distance.

Educational Positioning System:

Building on its role as a facilitator of cross-institutional collaboration, FLVC will develop a plan and implementation schedule for the expansion and enhancement of its current advising and academic planning resources. In consultation with advisors and other staff at member institutions, FLVC would act as a central facilitator of a Florida student's ability to develop an efficient pathway to degree completion and employment by offering a centralized planning and referral service to help the student plot the most efficient path through a degree program. The system would compile a list of potential courses (from all courses available including those in the online catalog) and provide a plan for the shortest "route" to the degree goal. Like a Global Positioning System device, the Educational Positioning System (EPS) would allow a student to select both the "destination" (degree or certificate) and the institution from which they will receive the credential, and then receive a program "map" which includes the required courses, academic milestones, and specific strategies that can be utilized to complete a degree or certificate in the shortest reasonable time. This plan would recognize that a student would need to select a "home" institution that offers the degree and for which he/she qualifies for admission. FLVC could potentially act in the role of a clearinghouse, providing information to students and handing them off to advisors and admissions representatives at a "home" institution. This EPS would leverage Florida's common course numbering system, statewide articulation agreements, network of connected institutional advisors, and opportunities to enroll in selected courses from other state institutions when necessary so that students would minimize the potential for earning excess credit hours and never need to wait for the classes required to progress in their program of choice. The plan could include recommendations for:

- Advanced academic analytics and FLVC system improvements that provide personalized self-help services for students to create their own maps.
- An improved "intelligent" advisory system that can provide automatic answers to simple student questions, coupled with a network of institutional advisors and resources including "high-touch" staff advisors at both FLVC and at the institutions (similar to the shared Ask a Librarian service currently in use) who can be available to work directly with students on the phone and via chat to counsel them about their educational goals and plans to achieve them.
- A roadmap of the existing academic policies and procedures that would govern such a system with recommendations for any needed changes.
- Policies associated with all state institutions agreeing to accept all course credits completed under an EPS program map, including admission standards and differences between colleges and universities.

Database Record Clean-up and Enhancement

In June 2012, the Florida Virtual Campus combined the bibliographic databases of all 11 university libraries into one single database. This merger of records was done to streamline efficiencies,

minimize duplication of effort by library staff, and help reduce system maintenance. While this merger was successful, extensive work is required to standardize the data within the records and to ensure that the information is accurate and consistent. There is also a need to upgrade many of the records to the most current standard that is supported by the library community. The most efficient way to accomplish this is to outsource the record cleanup to a reputable vendor who has experience in upgrading large database systems. (The current university database is over 11 million records.) Also included will be cleanup work for the smaller shared database for the Florida College System libraries, as it is anticipated that both databases will merge with the implementation of a new system. Finally, an ongoing process will be put in place to ensure that the data in both databases continue to be current and consistent. The cost range provided here reflects the low and high preliminary vendor estimates, and is likely to be closer to the high end when a final contract is awarded via a formal RFP or ITN.

APPENDIX E – BIBLIOGRAPHY

"Academic Partnerships." Free Online Courses for College Credit Toward A Degree | MOOC2Degree.com. MOOC2Degree, n.d. Web. 1 Aug. 2013. <http://www.mooc2degree.com/>.

Albanesius, Chloe. "Google's New Rule: Mobile First." PCMAG. PCMag.com, 10 Feb. 2010. Web. 17 Oct. 2013. <http://www.pcmag.com/article2/0,2817,2359752,00.asp>.

Allen, Elaine, and Jeff Seaman. Class Differences: Online Education in the United States, 2010. Rep. The Sloan Consortium, Nov. 2010. Web. <http://sloanconsortium.org/publications/survey/class_differences.>.

Aslanian, Carol B., and Dr. David L. Clinefelter. Online College Students 2013: Comprehensive Data on Demands and Preferences. Rep. A Joint Project of The Learning House, Inc. and Aslanian Market Research, June 2013. Web. <http://www.learninghouse.com/files/documents/resources/Online-College-Students-2013.pdf>.

"Awards." Center for Distributed Learning. University of Central Florida, n.d. Web. <http://cdl.ucf.edu/home/awards-page/>.

"Badges/Issuers." MozillaWiki. N.p., n.d. Web. <https://wiki.mozilla.org/Badges/Issuers>.

Best Practices for Online Teaching. Publication. University of Maryland University College, n.d. Web. <http://www.umuc.edu/ctl/upload/bestpractices.pdf>.

Best Practices in Online Teaching Strategies. Rep. The Hanover Research Council, 2009. Web. <http://www.uwec.edu/AcadAff/resources/edtech/upload/Best-Practices-in-Online-Teaching-Strategies-Membership.pdf>.

Best Practices in Online Teaching Strategies. Rep. Hanover Research Council, July 2009. Web. <http://www.uwec.edu/AcadAff/resources/edtech/upload/Best-Practices-in-Online-Teaching-Strategies-Membership.pdf>.

Boettcher, J. V. "Ten Best Practices for Teaching Online Quick Guide for New Online Faculty." Ten Best Practices for Teaching Online. N.p., May 2011. Web. <http://www.designingforlearning.info/services/writing/ecoach/tenbest.html>.

Bradford, Marianne. "North Carolina State University: Implementing ERP Student Modules." Issues in Accounting Education 26.3 (2011): 507-20. Print.

Brainbench. N.p., n.d. Web. <http://www.brainbench.com/>.

Bredikhina, Roxy. "5 MOOC Professors To See Before You Die." Accredible. N.p., n.d. Web. <http://blog.accredible.com/5-mooc-professors-to-see-before-you-die/>.

Burges, Dr. Vance. "Online Program Alignment with the Needs of Business." Telephone interview. 2013.

Cal State Online: The California State University. N.p., n.d. Web. <http://calstateonline.net/>.

Capriotti, Brent. "How Competency-Based Learning Actually Works." Edudemic. Ed. Katie Lepi. N.p., 24 June 2013. Web. <http://www.edudemic.com/how-competency-based-learning-actually-works/>.

Changing Course: Ten Years of Tracking Online Education in the United States | The Sloan Consortium. Rep. The Sloan Consortium, n.d. Web. <http://sloanconsortium.org/publications/survey/changing_course_2012>.

"Competency-based Education." National Association of Independent Nonprofit Colleges and Universities. National Association of Independent Nonprofit Colleges and Universities, 8 July 2013. Web. <http://www.naicu.edu/docLib/20130708_HEA-Innovat-CompetBasedInsts.pdf>.

Creech, Brett. "Ten Things I've Learned Teaching Online." ITS Information Technology and Services Syracuse University. Purdue University, 11 June 2013. Web. <http://ols.syr.edu/archives/2092>.

Dabner, Nicki, and Niki Davis. "Developing Best Practices in Online Teaching and Learning to Impact Students and Their Organisations." Proceedings Ascilite Auckland 2009. Same Places, Different Spaces, Auckland. Ascilite, 2009. Web. <http://www.ascilite.org.au/conferences/auckland09/procs/dabner-poster.pdf>.

Daytona State College. "Online Student Services." Telephone interview. 2013.

Dennis, Alan. "E-Textbooks at Indiana University: A Summary of Two Years of Research." Indiana University: ETexts at IU. Indiana University, Aug. 2011. Web. <http://etexts.iu.edu/files/eText%20Pilot%20Data%202010-2011.pdf>.

DeSantis, Nick. "Tablet Ownership Triples Among College Students." The Chronicle of Higher Education. Wired Campus, 14 Mar. 2012. Web. <http://chronicle.com/blogs/wiredcampus/tablet-ownership-triples-among-college-students/35764>.

Distance Education: Interregional Guidelines for the Evaluation of Distance Education (Online Learning). Publication. 1st ed. Philadelphia: Middle States Commission on Higher Education, 2011. Distance Education: Interregional Guidelines for the Evaluation of Distance Education (Online Learning). Middle States Commission on Higher Education, 2011. Web. <http://www.msche.org/publications/Guidelines-for-the-Evaluation-of-Distance-Education-Programs.pdf>.

"Distance Learning for Educators, Trainers and Leaders." Distance Learning Magazine. IAP Information Age Publishing, 2013. Web. <http://www.infoagepub.com/distance-learning.html>.

Dziuban, Charles D., Joel L. Hartman, and Patsy D. Moskal. Blended Learning. Rep. Educause Center for Applied Research, 30 Mar. 2004. Web. <http://www.educause.edu/library/resources/blended-learning>.

Eaton, Judith. "Assault on Accreditation: Who Defines and Judges Academic Quality?" Liberal Education (2007): n. pag. Liberal Education. 2007. Web. <http://www.aacu.org/liberaleducation/le-sp07/guest_message.cfm>.

Eaton, Judith. "Assault on Accreditation: Who Defines and Judges Academic Quality?" Liberal Education (2007): n. pag. Liberal Education. 2007. Web. <http://www.aacu.org/liberaleducation/le-sp07/guest_message.cfm>.

Elam, Dr. Joyce. "Online Program Alignment with the Needs of Business." Telephone interview. 2013.

Engaging Faculty in Online Education: Rightsizing Incentives and Optimizing Support. Washington, DC: Advisory Board, Education Advisory Board, 2010. Print.

Fain, Paul. "Beyond the Credit Hour." Inside Higher Ed. Inside Higher Ed, 19 Mar. 2013. Web. <http://www.insidehighered.com/news/2013/03/19/feds-give-nudge-competency-based-education>.

Fain, Paul. "Competency-based Education May Get a Boost | Inside Higher Ed." Inside Higher Ed. Inside Higher Ed, 1 Oct. 2012. Web. <http://www.insidehighered.com/news/2012/10/01/competency-based-education-may-get-boost>.

Fain, Paul. "Competency-Based Transcripts." Inside Higher Ed. Inside Higher Ed, 9 Aug. 2013. Web. <http://www.insidehighered.com/news/2013/08/09/northern-arizona-universitys-new-competency-based-degrees-and-transcripts>.

"Fast Facts." National Center for Education Statistics. N.p., n.d. Web. <http://nces.ed.gov/fastfacts/display.asp?id=80>.

Florida Atlantic University. N.p., n.d. Web. <http://www.fau.edu/cel/strategic/statistics.php>.

Florida Distance Learning Association. N.p., n.d. Web. <http://www.fdla.com/>.

"Florida Education and Training Placement Information Program (FETPIP)." Florida Department of Education. N.p., n.d. Web. <http://www.fldoe.org/fetpip/>.

Florida Virtual Campus. N.p., n.d. Web. <http://www.flvc.org>.

Foot Hills College. "Online Student Services." Telephone interview. 2013.

Frere, Cathryn. "Developing A Competency Based Curriculum." Robert C. Byrd Health Sciences Center: Faculty Development. West Virginia University, n.d. Web. <http://www.hsc.wvu.edu/Faculty-Development/Assessment-Materials/Competency-Based-Curriculum>.

Gardner, Lee. "Education Department Approves Competency-Based Program at Capella U." The Chronicle of Higher Education. The Chronicle of Higher Education, 12 Aug. 2013. Web. <http://chronicle.com/article/Education-Department-Approves/141081/>.

Glen, Marie. The Future of Higher Education: How Technology Will Shape Learning. Rep. Ed. Debra D'Agostino. The Economist Intelligence Unit of New Media Consortium, Oct. 2008. Web. <http://www.nmc.org/pdf/Future-of-Higher-Ed-(NMC).pdf>.

Grant, Mary Rose, and Heather R. Thornton. "Best Practices in Undergraduate Adult-Centered Online Learning: Mechanisms for Course Design and Delivery." MERLOT Journal of Online Learning and Teaching 3.4 (2007): n. pag. JOLT - Journal of Online Learning and Teaching. MERLOT Journal of Online Learning and Teaching, Dec. 2007. Web. <http://jolt.merlot.org/vol3no4/grant.htm>.

Greenberg, Alan D., and Jane Zanetis. "The Impact of Broadcast and Streaming Video in Education." Cisco Systems Inc. to Wainhouse Research, LLC., Mar. 2012. Web. <http://www.cisco.com/web/strategy/docs/education/ciscovideowp.pdf>.

The Groningen Declaration. N.p., n.d. Web. <http://groningendeclaration.net/>.

Harris, Marti. "Higher Education Must Prepare for the Growing Influence of MOOCs." Gartner. N.p., 20 Mar. 2013. Web. <http://my.gartner.com/portal/server.pt?open=512>.

Harrison, Lucy. Telephone interview with Director of Library Services, FLVC.

"History." Creative Commons. N.p., n.d. Web. <http://creativecommons.org/about/history>.

Illinois Online Network. N.p., n.d. Web. <http://www.ion.uillinois.edu/>.

Immerwahr, John, Jean Johnson, and Paul Gasbarra. The Iron Triangle: College Presidents Talk about Costs, Access, and Quality. Rep. The National Center for Public Policy and Higher Education and Public Agenda, Oct. 28. Web. 18 July 2013. <http://www.highereducation.org/reports/iron_triangle/IronTriangle.pdf>.

"Infrastructure: Access and Enable." U.S. Department of Education. N.p., n.d. Web. <http://www.ed.gov/technology/netp-2010/infrastructure-access-and-enable>.

"Instructional Strategies." Florida State University Office of Distance Learning. N.p., n.d. Web. <http://distance.fsu.edu/instructors/instructional-strategies>.

"IPEDS Data Center." National Center for Education Statistics. N.p., n.d. Web. <http://nces.ed.gov/ipeds/datacenter/>.

Jaschik, Scott. "MOOCs for Credit." Inside Higher Ed. Inside Higher Ed, 23 Jan. 2013. Web. <http://www.insidehighered.com/news/2013/01/23/public-universities-move-offer-moocs-credit>.

Jordan, Katy. "MOOC Completion Rates: The Data." Katy Jordan: Researching Education and Technology. N.p., n.d. Web. 12 Aug. 2013. <http://www.katyjordan.com/MOOCproject.html>.

Kahn, Gabriel. "Georgia Tech's New, Super-Cheap MOOC Master's Degree Could Radically Change American Higher Education." Slate Magazine. N.p., 23 July 2013. Web. <http://www.slate.com/articles/technology/technology/2013/07/georgia_tech_s_computer_science_moc_the_super_cheap_master_s_degree_that.html>.

Kaliski, John A., Queen E. Booker, and Paul Schumann. "A Proposed Architecture for Dynamic Learning Environments Based On Student Activity and Learning Styles." The Global Institute for Business and Finance Research Proceedings. Global Conference on Business & Finance, Hawaii, Honolulu. 1st ed. Vol. 7. 2012. 596-600. Web. <http://www.theibfr.com/ARCHIVE/ISSN-1941-9589-V7-N1-2012.pdf>.

Keas: The Corporate Wellness Program That Increases Employee Engagement. N.p., n.d. Web. <http://keas.com/>.

Kitchenham, Andrew. "Chapter 2 Blended Courses as Drivers of Institutional Transformation." Blended Learning across Disciplines: Models for Implementation. Hershey, PA: Information Science Reference, 2011. 17-37. Print.

Klein-Collins, Rebecca. "Competency-Based Degree Programs in the U.S. Postsecondary Credentials for Measurable Student Learning and Performance." Council for Adult and Experiential Learning. Council for Adult and Experiential Learning, 2012. Web. <http://www.cael.org/pdfs/2012_CompetencyBasedPrograms>.

Knight, Kayla. "Responsive Web Design: What It Is and How To Use It." Smashing Magazine. N.p., 12 Jan. 2011. Web. <http://coding.smashingmagazine.com/2011/01/12/guidelines-for-responsive-web-design/>.

Kolowich, Steve. "American Council on Education Recommends 5 MOOCs for Credit." The Chronicle of Higher Education. N.p., 7 Feb. 2013. Web. <http://chronicle.com/article/American-Council-on-Education/137155/>.

Kolowich, Steve. "American Council on Education Recommends 5 MOOCs for Credit." The Chronicle of Higher Education. N.p., 7 Feb. 2013. Web. <http://chronicle.com/article/American-Council-on-Education/137155/>.

Kolowich, Steve. "The MOOC 'Revolution' May Not Be as Disruptive as Some Had Imagined." The Chronicle of Higher Education. The Chronicle of Higher Education, 8 Aug. 2013. Web. <http://chronicle.com/article/MOOCs-May-Not-Be-So-Disruptive/140965/>.

Kolowich, Steve. "MOOCs for Credit." Inside Higher Ed. Inside Higher Ed, 29 Oct. 2012. Web. <http://www.insidehighered.com/news/2012/10/29/coursera-strikes-mooc-licensing-deal-antioch-university>.

Lackey, Karen. "Faculty Development: An Analysis of Current and Effective Training Strategies for Preparing Faculty to Teach Online." Journal of Distance Learning Administration 14.5 (2011): 1-23. University of West Georgia, Distance Education Center, Winter 2011. Web. <http://ols.syr.edu/wp-content/uploads/2012/04/Faculty-Development-An-Analysis-of-Current-and-Effective-Training-Strategies-for-Preparing-Faculty-to-Teach-Online.pdf>.

Lane, Lisa M. "An Open, Online Class to Prepare Faculty to Teach Online." The JEO. The Journal of Educators Online, n.d. Web. <http://www.thejeo.com/Archives/Volume10Number1/Lane.pdf>.

LeBlanc, Paul J. "Accreditation in a Rapidly Changing World." Inside Higher Ed. Inside Higher Ed, 31 Jan. 2013. Web. <http://www.insidehighered.com/views/2013/01/31/competency-based-education-and-regional-accreditation>.

"Lee Sheldon." Department of Communication and Media. N.p., n.d. Web. <http://www.cm.rpi.edu/pl/people-590/lee-sheldon>.

Lowendahl, Jan-Martin, and Bill Rust. "A Quick Look at Big Data in Education, 2012 | 2112515." A Quick Look at Big Data in Education, 2012 | 2112515. Gartner, 8 Aug. 2012. Web. <http://www.gartner.com/id=2112515>.

Lowendahl, Jan-Martin. "Hype Cycle for Education." Gartner. N.p., 25 July 2013. Web. <http://www.gartner.com/id=2559615>.

Martin, Fred G. "Will Massive Open Online Courses Change How We Teach?" Communications of the ACM 55.8 (n.d.): 26-28. Communications of the ACM. 2012. Web. <http://cacm.acm.org/magazines/2012/8/153817-will-massive-open-online-courses-change-how-we-teach/fulltext>.

Masterson, Kathryn. "Giving MOOCs Some Credit." American Council on Education. American Council on Education, 1 May 2013. Web. <https://www.acenet.edu/the-presidency/columns-and-features/Pages/Giving-MOOCs-Some-Credit.aspx>.

McKeown-Moak, Mary P. "The "New" Performance Funding in Higher Education." Educational Considerations 40.2 (2013): 3-12. Print.

Means, Barbara, Yukie Toyama, Robert Murphy, Marianne Bakia, and Karla Jones. Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies. Rep. U.S. Department of Education Office of Planning, Evaluation, and Policy Development Policy and Program Studies Service, May 2009. Web. <http://ceit.uq.edu.au/content/evaluation-evidence-based-practices-online-learning-meta-analysis-and-review-online-learning>.

Mendenhall, Dr. Robert. "What Is Competency-Based Education?" The Huffington Post. TheHuffingtonPost.com, 05 Sept. 2012. Web. <http://www.huffingtonpost.com/dr-robert-mendenhall/competency-based-learning-_b_1855374.html>.

Meyer, Leila. "California Bill Allowing Credit for MOOCs Passes Senate." Campus Technology. N.p., 6 June 2013. Web. <http://campustechnology.com/articles/2013/06/06/california-bill-allowing-credit-for-moocs-passes-senate.aspx>.

Michael, ed. Quarterly Review of Distance Education 13.4 (2012): n. pag. Information Age Publishing. Information Age Publishing. Web. 16 Oct. 2013. <http://www.infoagepub.com/index.php?id=89>.

Miller, Leah. "MOOCs: To Credit or Not to Credit?" Web log post. Blog Divided. N.p., n.d. Web. <http://housedivided.dickinson.edu/sites/blogdivided/2013/07/16/so-youve-finished-your-mooc-now-what/>.

Mobile Web Watch 2012: Mobile Internet — Spawning New Growth Opportunities in the Convergence Era. Rep. Accenture, 2012. Web. <http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Mobile-Web-Watch-Internet-Usage-Survey-2012.pdf>.

Moore, J. "A Synthesis of Sloan-C Effective Practices." Journal of Asynchronous Learning Networks 16.1 (2011): 91-115. Print.

Moorefield-Lang, Heather. "An Exploration of ETextbooks." Library Media Connection 31.6 (2013): 18-19. Print.

"Morning Blend." Blended Learning Toolkit. N.p., n.d. Web. <http://blended.online.ucf.edu/>.

Moxie Q3-2011 Trends Report: WHAT IS POST-PC COMPUTING? Rep. Moxie, 2011. Web. <http://www.moxieinteractive.com/post-pc_report.pdf>.

"Mozilla Open Badges." Open Badges. N.p., n.d. Web. <http://www.openbadges.org/>.

"MyPlan.com :: Home." MyPlan.com. N.p., n.d. Web. <http://www.myplan.com/>.

National Education Technology Plan Technical Working Group. "National Education Technology Plan 2010." National Education Technology Plan 2010. U.S. Department of Education, 2010. Web. <http://www.ed.gov/technology/netp-2010>.

Negres, Sherrie. "Colleges Breaking New Ground in Distance Learning." University Business Magazine. University Business, Aug. 2013. Web. <http://www.universitybusiness.com/article/colleges-breaking-new-ground-distance-learning>.

Nelson, John, and Allison Thomas. Centralized Student Support Services Strategies and Considerations for Continuing and Online Education Units. Rep. Education Advisory Board, Nov. 2012. Web. <http://www.eab.com/Research-and-Insights/Continuing-and-Online-Education-Forum/Custom/2012/11/Centralized-Student-Support-Services>.

Nelson, Sharleen. "Connecticut State Colleges and Universities Adopts Statewide Platform For Online and Mobile Learning." Campus Technology. N.p., 25 Feb. 2013. Web. <http://campustechnology.com/articles/2013/02/25/connecticut-state-colleges-and-universities-adopts-statewide-platform-for-online-and-mobile-learning.aspx>.

Neuhauser, Charlotte. "Learning Style and Effectiveness of Online and Face-to-Face Instruction." American Journal of Distance Education 16.2 (2002): 99-113. Print.

New, Jake. "University of Maryland University College to Offer Credit for MOOCs." ECampus News. ECampus News, 2 Aug. 2013. Web. <http://www.ecampusnews.com/top-news/university-of-maryland-university-college-to-offer-moocs-for-credit/>.

Next Generation Learning Challenges. N.p., n.d. Web. <http://nextgenlearning.org/>.

NMC Horizon: Report 2013 Higher Education Edition. Rep. NMC and the EDUCAUSE Learning Initiative (ELI), an EDUCAUSE Program, 2013. Web. <http://www.nmc.org/pdf/2013-horizon-report-HE.pdf>.

Nolin, Robert, Karen Yi, and Scott Travis. "A Florida First: UF Offering Cheaper Online Degrees." Sun Sentinel. N.p., 19 May 2013. Web. <http://articles.sun-sentinel.com/2013-05-19/news/fl-florida-online-education-20130519_1_uf-online-degree-programs-online-students>.

OAuth. N.p., n.d. Web. <http://oauth.net/>.

Olcott, Don, Jr. "OER Perspectives: Emerging Issues for Universities." Distance Education 33.2 (2012): 283-90. Print.

"Online Campus Statistics." University of West Florida. N.p., n.d. Web. <http://onlinecampus.uwf.edu/aboutus/statistics.cfm>.

"Online Education Readiness Assessment." Georgia OnMyLine. N.p., n.d. Web. <http://goml.readi.info/>.

"Online Program Alignment with the Needs of Business." Telephone interview.

"Open SUNY: OpenSUNY Plan." Open Suny, n.d. Web. 12 Aug. 2013. <http://www8.esc.edu/esconline/cdlrev2.nsf/7ee05c19c4623d12852576780052063 4/581ad7d9e2ccc8f7852579fb006695d0/$FILE/OpenSUNYFinal.pdf>.

The OpenCourseWare Consortium. N.p., n.d. Web. 2. <http://www.ocwconsortium.org/>.

The Orange Grove: Florida's Digital Repository. Florida Virtual Campus, 2013. Web. <http://florida.theorangegrove.org/og/access/home.do>.

"Pagina Niet Gevonden." N.p., n.d. Web. <http://www.duo.nl/particulieren/diplomas/diplomaregister/diplomaregister.asp>.

The Parthenon Group. "Postsecondary Online Expansion in Florida." November 16, 2012. http://www.flbog.edu/resources/publications/online_university.php

The Parthenon Group. "Detailed Fact Base." November 16, 2012. http://www.flbog.edu/resources/publications/online_university.php

Patrick, Susan, and Allison Powell. A Summary of Research on the Effectiveness of K-12 Online Learning. Memo. International Association for K-12 Online Learning, June 2009. Web. <http://www.k12.com/sites/default/files/pdf/school-docs/NACOL_ResearchEffectiveness-hr.pdf>.

Pelz, Bill. "Three Principles of Effective Online Pedagogy." Journal of Asynchronous Learning Networks 8.3 (2004): 33-46. Print.

"Positioning Online Learning as a Strategic Asset in the Thinking of University Presidents and Chancellors." The Journal of Asynchronous Learning Networks 12.2 (n.d.): n. pag. Sloan-C. The Sloan Consortium, July 2008. Web. <http://sloanconsortium.org/jaln/v12n2/positioning-online-learning-strategic-asset-thinking-university-presidents-and-chancellor>.

Quality Matters Program, n.d. Web. <https://www.qualitymatters.org/higher-education-program>.

"*Resources.*" *FIU Online: Florida International University. N.p., n.d. Web. <http://online.fiu.edu/faculty/resources>.*

Robinson, Sherry, and Anton Stubberud. "Student Preferences for Educational Materials: Old Meets New." Academy of Educational Leadership Journal 16.1 (2012): 99-109. Print.

Rozycki, Edward G. "Identifying the 'At Risk' Student." Identifying the 'At Risk' Student: What Is the Concern? N.p., 2004. Web. <http://www.newfoundations.com/EGR/AtRisk.html>.

Rushe, Dominic. "Technology Sector Found to Be Growing Faster than Rest of US Economy." The Guardian. N.p., 6 Dec. 2012. Web. <http://www.theguardian.com/business/2012/dec/06/technology-sector-growing-faster-economy>.

Russell, Thomas L. The No Significant Difference Phenomenon: A Comparative Research Annotated Bibliography on Technology for Distance Education : As Reported in 355 Research Reports, Summaries and Papers. 5th ed. N.p.: IDECC, 2001. Print.

Russell, Thomas L. The No Significant Difference Phenomenon: A Comparative Research Annotated Bibliography on Technology for Distance Education : As Reported in 355 Research Reports, Summaries and Papers. 5th ed. N.p.: IDECC, 2001. Web.

Saadatmand, Mohsen, and Kristiina Kumpulaninen. "Content Aggregation and Knowledge Sharing in a Personal Learning Environment: Serendipity in Open Online Networks." International Journal of Emerging Technologies in Learning 8 (2013): n. pag. 2013. Web. <http://online-journals.org/i-jet/article/view/2362>.

Saint Leo University. "Online Student Services." Telephone interview. 2013.

Sanderson, Katharine. "Press P to Print." RSC. N.p., 25 June 2013. Web. <http://www.rsc.org/chemistryworld/2013/06/3d-printing>.

Savery, John R. "BE VOCAL: Characteristics of Successful Online Instructors." Journal of Interactive Online Learning 4.2 (2005): 141-52. Print.

SCORM. N.p., n.d. Web. <http://scorm.com/tincanoverview/>.

"*Seth Priebatsch: The Game Layer on Top of the World.*" *Video blog post. Ted.com. Ted Talks, Aug. 2010. Web. http://www.ted.com/talks/seth_priebatsch_the_game_layer_on_top_of_the_world.html.*

Shacher, Mickey, and Yoram Neumann. "Differences Between Traditional and Distance Education Academic Performances: A Meta-analytic Approach." The International Review of Research in Open and Distance Learning 4.2 (2003): n. pag. Oct. 2003. Web. <http://www.irrodl.org/index.php/irrodl/article/viewArticle/153/234>.

Sheridan, Kelly. "Blackboard MOOC Gains 15 More Colleges." InformationWeek. InformationWeek, 17 July 2013. Web. <http://www.informationweek.com/education/online-learning/blackboard-mooc-gains-15-more-colleges/240158375>.

Shibboleth. N.p., n.d. Web. <http://shibboleth.net/>.

"*SIF Implementation Specification.*" *The SIF Specification. N.p., n.d. Web. <https://www.sifassociation.org/Specification/Pages/default.aspx>.*

Simonson, Michael, and Charles Schlosser, eds. Quarterly Review of Distance Education 13.4 (2012): n. pag. Information Age Publishing. Information Age Publishing, 2012. Web. <http://www.infoagepub.com/index.php?id=89>.

"*SLN Marketing Services.*" *The State University of New York. The State University of New York, n.d. Web. <http://wiki.sln.suny.edu/display/SLNMKT/SLN Marketing Services>.*

"*Sloan-C Quality Framework: The 5 Pillars.*" *The Sloan Consortium. The Sloan Consortium, 2013. Web. 3 Aug. 2013. <http://sloanconsortium.org/5pillars>.*

SmarterServices – Helping You Make Smarter Decisions. N.p., n.d. Web. <http://smarterservices.com/>.

Southern New Hampshire University. N.p., n.d. Web. <http://www.snhu.edu/>.

Stacey, Paul. "Government Support for Open Educational Resources: Policy, Funding, and Strategies." The International Review of Research in Open and Distance Learning 14.2 (2013): 67-80. Print.

"*State and System Course Redesign.*" *The National Center for Academic Transformation. N.p., n.d. Web. 12 Aug. 2013. <http://www.thencat.org/system_solutions.htm>.*

Swan, Karen. "Learning Effectiveness Online: What the Research Tells Us." Ed. John Bourne and Janet C. Moore. Elements of Quality Online Education: Practice and Direction 4 (2003): 13-45. Print.

Takabuski, Konrad. "Students Are Cool with MOOCs, so Why Aren't Profs?" The Globe and Mail. The Globe and Mail, 5 Aug. 2013. Web. <http://www.theglobeandmail.com/commentary/students-are-cool-with-moocs-so-why-arent-profs/article13578514/>.

"*Teaching a Distance Learning Course.*" *University of Washington Learning and Scholarly Technologies. University of Washington, n.d. Web. 27 July 2013. <http://www.washington.edu/lst/help/planning/dl_teaching>.*

Tech Trends 2013 Elements of Postdigital. Rep. Deloitte, 2013. Web. <http://www.deloitte.com/assets/Dcom-UnitedStates/Local Assets/Documents/Consulting/Technology/TechTrends13/us_cons_techtrends13.pdf>.

Tillman, Karen. "How Many Internet Connections Are in the World? Right. Now." Web log post. Cisco Blog. Cisco, 29 July 2013. Web. <http://blogs.cisco.com/news/cisco-connections-counter/>.

Tobin, Thomas. "Best Practices for Administrative Evaluation of Online Faculty." Online Journal of Distance Learning Administration 7.2 (2004): n. pag. Print.

"*UMUC Will Be First College in Md. University System With 'MOOCs' « CBS DC.*" *CBS DC. The Associated Press, 31 July 2013. Web. <http://washington.cbslocal.com/2013/07/31/umuc-will-be-first-college-in-md-university-system-with-moocs/>.*

University of Maryland University College. "Online Student Services." Telephone interview. 2013.

University of West Florida. N.p., n.d. Web. <http://uwf.edu/>.

University of Wisconsin System ECampus. N.p., n.d. Web. <http://ecampus.wisconsin.edu/>.

Waldrop, Dr. Tony. "Online Program Alignment with the Needs of Business." Telephone interview. 2013.

Warner, Rosalind. "The Unbroken Line between Games And Education." Dr. Rosalind Warner. N.p., 9 May 2012. Web. <http://rozwarner.wordpress.com/2012/05/09/the-unbroken-line-between-games-and-education-2/>.

Weiner, Allen. "The Emergence of 'Mashware' Points to a New Digital Resource for Educators." Gartner. N.p., 23 May 2013. Web. <http://www.gartner.com/id=2494615>.

"Welcome!" Center for Distributed Learning. N.p., n.d. Web. <http://cdl.ucf.edu/>.

Welcome to IMS Global Learning Consortium. N.p., n.d. Web. <http://www.imsglobal.org/>.

Young, Jeffrey R. "Georgia Tech to Offer a MOOC-Like Online Master's Degree, at Low Cost." The Chronicle of Higher Education. N.p., 14 May 2013. Web. <http://chronicle.com/article/Ga-Tech-to-Offer-a-MOOC-Like/139245/>.

Zichermann, Gabe, and Joselin Linder. Game-based Marketing: Inspire Customer Loyalty through Rewards, Challenges, and Contests. Hoboken, NJ: Wiley, 2010. Print.