Center for American Progress

Educational Tools for the 21st Century

Strategies for Investing in Online Courses to Boost U.S. Competitiveness and Prosperity

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President Barack Obama has proposed an ambitious agenda to reform and improve U.S. education at all levels, including by harnessing the power of technology to deliver education in new and innovative ways. He is backing up these proposals with plans for a significant increase in the federal investment in education geared to reclaiming the world's number one ranking in college completion by 2020, producing the skilled and educated workers our economy needs to boost productivity and wages, and ensuring that the opportunity to learn and gain new skills is widely available, including to dislocated workers struggling to find well-paying jobs. Few long-term policy initiatives are as important as this for our nation's broad-based economic growth and prosperity in the 21st century.

Key members of Congress get it. This past week the House Committee on Education and Labor responded to the president's call for new investments in college access and completion and in the nation's community colleges by passing the Student Aid and Fiscal Responsibility Act of 2009, which authorizes and funds the major parts of this initiative. The Senate Health, Education, Labor, and Pensions Committee is working to develop a counterpart bill as part of the 2010 budget reconciliation process, and we applaud the members of theses committees for pushing ahead with President Obama's key educational objectives in this arena.

The act wisely seeks to leverage U.S. know-how in information technology and educational instruction to develop freely available and widely disseminated high-quality online courses that will help meet the educational and training needs of students in high school and college, and among adult workers. Specifically the legislation creates a $500 million, 10-year grant program aimed at developing and widely disseminating "free high-quality online training, high school courses, and postsecondary education courses."

To have maximum benefit, however, these investments in new online courses should be strategically aligned with the president's goal of increasing the number of Americans who earn postsecondary college degrees or credentials that have value in the workplace. This

requires that such courses be more than a catalogue of online courses freely available for download by any potential user. Instead they should be developed for use by accredited educational institutions that award degrees and certificates, matched to appropriate educational standards, and tailored to fit within the structure of a program of instruction that leads to a degree or certificate.

Offering these courses freely for use by colleges and universities throughout the nation would thus be akin to making valuable, high-quality software available for use without charging a per student licensing fee. And it is a necessary link for translating such investments into an increase in the number of degrees and credentials awarded. Yet effective delivery and management of quality courses and programs requires faculty and administrative support, and institutions that offer these courses should therefore not be precluded from charging tuition and fees to cover their costs, including expenses associated with teacher-mediated courses and with other support needed to deliver the course as part of a degree or certificate program. The act should clarify this authority.

These investments in online education will best support the goals of degree completion or skills certification if they are (1) carefully targeted to meet the needs of specific groups of learners and (2) designed to maximize acceptance and use of the courses by students, providers, and industry by following five principles for effective course development. These groups and principles are described below. This approach will help ensure that the online courses developed under this initiative help as many individuals as possible gain a college education or boost their skills and incomes, thereby helping our economy make the productivity advances necessary to ensure long-term, broad-based prosperity.

Three groups of learners

The online courses developed through this investment will best support college completion and skills credentialing goals if they are targeted at three different groups of learners:

Learners needing remedial and developmental education

Online courses should target those who today are least likely to successfully earn degrees or certificates through existing educational programs. These include high school students who are behind in grade level or at risk of dropping out, and school-aged youth who have dropped out. These students need education and training programs that meet their unique needs and set them on a path toward postsecondary education and training. Programs should also help adult students enrolled in college and university programs who have significant remedial course work to complete before they can move on to college-level, credit-earning courses.

Courses developed to meet the needs of such learners can leverage the power of technology as an educational tool, as well as new knowledge and discoveries about brain development and learning styles that can be used to help a broader range of students succeed in secondary and postsecondary education. They should also aim to accelerate the rate of academic catch up by students taking the courses in comparison to classroom-based remedial and developmental education offerings. Because one-third of college students require some form of remedial education, these investments will have broad and important impact in opening the gateway to higher education to more Americans.

Learners in training programs that lead to certification for high-skill, high-demand jobs

The program should help those seeking to upgrade their skills to meet chronic and emerging shortages of skilled workers in fields such as health care, advanced manufacturing, and engineering sciences. Frequently these learners have difficulty overcoming the barriers to the education and training programs that will help them develop these skills. These barriers can be effectively reduced through the development of online courses that support new and existing community college training programs that lead to certifications for high-skill, high-demand jobs. These training programs are frequently costly to operate and at capacity, with long waiting lists of students eager to enroll. Online courses developed for such programs should be designed to increase program capacity, lower program cost, and increase student success.

Learners who would benefit from completing core undergraduate degree courses online

Online education should also be tailored to those seeking expanded access to higher education through new options for meeting basic requirements and prerequisites for advanced courses of study. The development of online courses for this group has the potential to make the greatest difference for the largest number of students by, for example, increasing the capacity of the public colleges and universities to deliver core (first and second year) undergraduate courses. Such courses would offer scheduling flexibility and enable more students to progress toward degree completion faster and ideally at lower cost to the student and the institution.

For example, a suite of four to eight courses developed by university and community college faculty members with subject matter expertise would permit some students to complete a semester to a year of college online. These courses should be required to serve students not being served today, lower the cost of instruction, increase student achievement levels, or increase faculty productivity depending on the mix of students, content, and number of online class interactions. These courses should also be designed to articu-

late between community colleges and universities in the states that adopt them.

Five principles for course development

The online courses developed through this investment will be widely adopted in support of college completion and skills credentialing goals if they follow five principles:

Develop courses to educational, university, and labor market certification standards

Courses that are developed to meet clearly articulated standards have a better chance of being adopted for usage in educational and training programs that lead to degrees and certificates. For example, courses for high school students should meet relevant state and national education standards by subject and course level. Similarly, college-level courses and training courses must meet applicable faculty, discipline, and industry standards so that full credit is given to any student who completes one of these courses.

Promote broad-based development partnerships that ensure the widest possible adoption of courses by providers

The development process should include secondary school educators, college and university faculties, and, as appropriate, employers unions and industry associations with a stake in skills training programs. These stakeholders will have a say in the formal adoption of the courses that are developed and should be involved in every step of the development process. Grants awarded to public institutions of higher education in any given state should require an upfront commitment to all parties necessary to ensure the course will articulate and be adopted for credit at all public institutions of higher education in that state. Early and meaningful involvement of stakeholders can help lower resistance to adoption by ensuring that courses are developed to the right content standards and meet student, faculty, and other stakeholder needs and concerns.

Use a common design architecture that permits course sharing, customizing, and updating

Courses should be developed to a common standard that facilitates the sharing of courses among schools, colleges, and universities throughout the nation. Courses should be developed in ways that give users the ability to update or customize the course to different needs and standards and as content requirements change. Users of courses should be able to identify the proponent of the course or other entity responsible for periodically upgrad-

ing it so that the course does not become outdated. The Department of Education should promulgate one common design standard that promotes sharing of courses and require its use in the same way as the Department of Defense's Advanced Distributed Learning Initiative has adopted a common standard called the Shareable Content Object Reference Model for the military services to use when developing training courses so that they can be shared. The standard provides universal, internationally recognizable guidelines for development software content that promote sharing. Courses of general applicability developed to standards that are also easy to use, share, customize, and update have the highest likelihood of making a wide and lasting contribution to improving U.S. educational outcomes.

Develop both stand-alone and faculty-mediated courses

Online courses must correspond to the needs of different kinds of students dealing with a wide array of work-life and work-study situations. Online courses should be comprised of both stand-alone, self-paced courses that require little or no faculty or administrative involvement—such as a GED or contactor's licensing exam review course—and hybrid courses that are intended to be faculty led, student cohort organized, and delivered as part of a formal education and/or training program that leads to a degree or certification.

A Department of Education-sponsored meta-analysis recently concluded that hybrid courses generally have the highest student learning outcomes as compared to stand-alone or classroom-only courses. They are likely to constitute the largest share of the kinds of courses developed under this initiative because faculty members at colleges and universities are more likely to adopt online courses that preserve the important role of the teacher in transmitting complex knowledge and helping students learn. Nevertheless, further experimentation and research regarding what kinds of courses work best for which subjects and students should be one of the goals of this program.

Provide for rigorous assessment of learning outcomes in each course

All online courses developed under this initiative should include rigorous assessment tools that permit students, teachers, educational institutions, and policymakers to assess individual and group progress throughout the course and upon its completion.

Conclusion

High-quality online course are expensive to develop. Carnegie Mellon University's Open Learning Initiative reports development costs of $1 million to 1.5 million per course. Despite the absence of funding to support large-scale innovation and development of online courses, such courses have helped expand postsecondary offerings and opportunities for students across the nation.

The proposed investment of $500 million over 10 years in the Student Aid and Fiscal Responsibility Act of 2009 can dramatically further the value and impact of such online courses, particularly if the investments are strategically targeted in support of the president's call to increase the number of Americans completing college or earning credentials with value in the workplace.

This means that the investments must be targeted to serving those learners who, as their success rates improve, will represent significant gains in the percentages of Americans completing college or earning certificates and credentials. It also means that the courses developed through these investments must be widely adopted for use by accredited degree and certificate-granting institutions of higher education. The best way to ensure that the courses are adopted for use by such institutions is to engage the providers, their faculty, and other stakeholders in the development process from the beginning; to use a common course design architecture that can be customized and updated; and to develop courses to agreed-upon content standards, with assessment tools, and in a format that supports teacher mediated delivery of the courses.

Including these measures in the final legislation would help ensure that the benefits of investing in the development of high-quality online courses accrue to the widest array of students and workers possible; help those students improve their education, skills, and earning power; and help our economy grow and prosper. Indeed, by adding provisions that focus the act in the ways described, Congress can help lead our educational system into the 21st century, funding the kind of educational innovation needed to once again make the United States the best-educated nation in the world.