Applications of online learning[1]

Many lines of evidence sustain the fact that online learning might offer productivity benefits compared with traditional place-based schooling. Since postsecondary institutions have a broader and longer history with online learning than elementary and secondary schools, it sounds better to use the literature from higher education to illustrate concepts that may apply to emerging practices in elementary and secondary education. Findings from the studies of higher education should be applied with caution to secondary education, as student populations, learning contexts and financial models are quite different across these levels of schooling.

Literature review suggests twelve applications of online learning that are seen as possible pathways to improved productivity:

a. Broadening access in ways that dramatically reduce the cost of providing access to quality educational resources and experiences, particularly for students in remote locations or other situations where challenges such as low student enrollments make the traditional school model impractical;

b. Engaging students in active learning with instructional materials and access to a wealth of resources that can facilitate the adoption of research-based principles and best practices from the learning sciences, an application that might improve student outcomes without substantially increasing costs;

c. Individualizing and differentiating instruction based on student performance on diagnostic assessments and preferred pace of learning, thereby improving the efficiency with which students move through a learning progression;

d. Personalizing learning by building on student interests, which can result in increased student motivation, time on task and ultimately better learning outcomes;

e. Using of game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning and solve problems. It's the instructional method, and not just the delivery system, that provides the elements for learning in a game situation to attain a higher skill level. In other terms, the engagement of the learner in the game leads to learning.

f. Allowing students to collaborate with classmates and others around the world, an approach that enhances their skill development and learning

g. Increasing interactivity among faculty and students across areas of expertise. Such innovation is already making an impact that will drive discovery and creativity.

h. Making better use of teacher and student time by automating routine tasks and enabling teacher time to focus on high-value activities;

i. Increasing the rate of student learning by increasing motivation and helping students grasp concepts and demonstrate competency more efficiently;

j. Reducing school-based facilities costs by leveraging home and community spaces in addition to traditional school buildings;

[1] "http://www.ed.gov/technology" "Understanding the implications of online learning for educational productivity".

k. Reducing salary costs by transferring some educational activities to computers, by increasing teacher-student ratios or by otherwise redesigning processes that allow for more effective use of teacher time; and

l. Realizing opportunities for economies of scale through reuse of materials and their large-scale distribution.

To increase productivity it is crucial to remember that these twelve applications are not mutually exclusive, and multiple strategies can be adopted to change the status quo to impact both the benefit side and cost side. Educational stakeholders at every level need information regarding effective instructional strategies and methods for improving educational productivity. Studies must be designed rigorously to provide valid estimates of student learning. Regarding potential benefits, the promise of individualized and personalized instruction suggests an ability to tailor instruction to meet the needs of students in search for the appropriate jobs. The realization of productivity improvements in education will most likely require a transformation of conventional processes to leverage new capabilities supported by information and communications technologies. As rigorous evidence accumulates around effective practices that may require institutional change, systemic incentives may be needed to spur the adoption of efficient, effective paths to learning. More tailored studies are required for the educators and decision makers to approach critical questions such as when, how and under what conditions online learning can be deployed cost-effectively. Furthermore, online learning offerings should be made accessible to students with disabilities[2].

[2] Any requirement to use a technology, including an online learning program, that is inaccessible to individuals with disabilities is considered discrimination and is prohibited by the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973, unless those individuals are provided accommodations or modifications that permit them to receive all the educational benefits provided by the technology in an equally effective and equally integrated manner. The degree to which programs make such accommodations is not yet known. To address this need, the U.S. Department of Education recently funded the Center on Online Learning and Students with Disabilities, a five-year research effort to identify new methods for using technology to improve learning. Similarly, research regarding the degree to which current online learning environments meet the needs of English language learners and how technology might provide a cost-effective alternative to traditional strategies is just emerging.