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In Higher Education, a Focus on Technology

By STEVE LOHR

The education gap facing the nation's work force is evident in the numbers. Most new jobs will require more than a high school education, yet fewer than half of Americans under 30 have a postsecondary degree of any kind. Recent state budget cuts, education experts agree, promise to make closing that gap even more difficult.

The Bill and Melinda Gates Foundation, the William and Flora Hewlett Foundation, and four nonprofit education organizations are beginning an ambitious initiative to address that challenge by accelerating the development and use of online learning tools.

An initial $20 million round of money, from the Gates Foundation, will be for postsecondary online courses, particularly ones tailored for community colleges and low-income young people. Another round of grants, for high school programs, is scheduled for next year.

Just how effective technology can be in improving education — by making students more effective, more engaged learners — is a subject of debate. To date, education research shows that good teachers matter a lot, class size may be less important than once thought and nothing improves student performance as much as one-on-one human tutoring.

If technology is well designed, experts say, it can help tailor the learning experience to individual students, facilitate student-teacher collaboration, and assist teachers in monitoring student performance each day and in quickly fine-tuning lessons.

The potential benefits of technology are greater as students become older, more independent learners. Making that point, Mr. Gates said in an interview that for children from kindergarten to about fifth grade "the idea that you stick them in front of a computer is ludicrous."

But in higher education, there are several promising projects that have used online technology effectively.

And so the new initiative, Next Generation Learning Challenges, focuses on the college years. It

is looking for innovative tools that can be developed and shared across networks of colleges. The grants, for $250,000 to $750,000 each, are intended to scale up such efforts, so they become self-sustaining.

The money is for online courses and tools, and any software developed with it must be freely licensed.

The program's members say the timing seems right for such an effort, partly because the technology of online learning is advancing rapidly. And, they add, budget-constrained colleges have a greater economic incentive to try online tools, if they are going to make headway in preparing a greater number of students for an economy that increasingly requires workers with higher levels of skills.

"Innovation is your only hope," Bill Gates said. "And the only new game in town is technology."

Among the projects that have successfully used online technology is the Open Learning Initiative at Carnegie Mellon University, which has adopted hybrid models of digital and classroom teaching to accelerate learning. In one project, a college statistics course was taught in two different ways using comparable groups of students: a traditional class lasted 15 weeks, with four class meetings a week, whereas a hybrid one of online course material held two classroom sessions a week.

The hybrid class lasted half as long — seven-and-a-half weeks — as the traditional setting. Yet the students' test scores and retained learning, measured later in the year, were as high as or higher than those of the conventional lecture class, said Candace M. Thille, director of the initiative.

In short, the hybrid approach doubled the productivity of education in that program. The course materials, which have been modified for community colleges, have been introduced at 25 two-year colleges this fall.

The members of the Next Generation Learning Challenges point to such examples, as well as free online video lectures and coursework at projects like Massachusetts Institute of Technology's OpenCourseWare and AcademicEarth.org, as vehicles to "leverage teachers," not replace them.

The online tools, they say, can help open up educational pathways to skills, especially for low-income young adults. "Access is becoming more and more of an issue," said Victor V. Vuchic, an education expert at the Hewlett Foundation. "This goes right to the heart of that problem."

The Gates and Hewlett foundations worked closely with four other education nonprofits in

creating the initiative: Educause, the Council of Chief State School Officers, League for Innovation in the Community College and International Association for K-12 Online Learning.

“They want these innovative online programs to reside in the educational community, as they have to if they are going to scale up and spread,” said Diana G. Oblinger, president of Educause, which focuses on the use of technology in higher education.