

## A Brief Look at the Research

by Saul Rockman

*As good as or better than.* That's the short version of a review of the research on online learning and virtual schools.

While it is a relatively new line of research, there are many studies on the academic, attitudinal, and behavioral effects of online learning. Most common are descriptive studies of the accomplishments of participating students, often in comparison to students taking the same course in a traditional setting. Outcomes usually consist of subject-matter tests administered by the state, or other standardized assessments required of all students taking a course, such as Advanced Placement (AP) tests.

Few of these studies are designed to be as rigorous as federal policy prefers, but they do provide substantive information for further developing or fine-tuning virtual courses. They also offer a preponderance of relatively consistent findings about how students are doing: Students in virtual classrooms, they show, do as well as or better than students who receive the same course in a face-to-face classroom. Students also tend to like the virtual classes better than traditional instruction, and those who may not thrive in a traditional classroom seem to be engaged in doing the work in a virtual environment.

These findings are reassuring, but they don't put online programs in the category of a silver bullet. Like many other educational interventions, online programs and virtual schools are often seen as a total solution to wide-ranging deficits in U.S. education. Although online instruction does provide a useful element in successful learning, it is not the total solution for all students, nor is it a useful intervention for many. It may, however, provide the best possible outcomes—for some students, or for some students at some times. As in face-to-face settings, the more highly motivated students do well, and many of those who do not succeed in traditional schools find the wherewithal to succeed in online programs.

My firm, Rockman et al, found that middle school students taking an online, hybrid, first-year Spanish course perform as well as students in face-to-face courses. The West Virginia project sought to provide rigorous middle school programs equally to isolated rural schools and urban schools. On some assessed areas, one group's outcomes are significantly higher; in another, significantly lower—but the overall conclusion is that virtual Spanish was as good as traditional. The real policy outcome is that students in rural, isolated schools who would not otherwise have access to the course taught by a certified teacher can now receive it and do as well as those in traditional classes.

From my perspective, the most positive evidence of the value of virtual instruction comes from high school Spanish II teachers who note that the students who had taken the middle school virtual course were some of the best in the class. They not only had better study skills and greater facility with computers than older students who had taken the beginning Spanish course in high school, but they also were most enthusiastic about learning a foreign language.

In Florida, an independent study by Florida TaxWatch, a private research institute, found that students taking online courses earned higher grades than students in equivalent courses in traditional settings. They also noted that the more time the students spent on the online course, the higher the grade. Florida Virtual School students also outperformed traditional students on the state tests in math and reading.

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## Online Interaction

At the heart of technology-mediated teaching and learning are the interactions that happen within an online course. While the majority of learning materials are composed of static digital resources, instructions, and assessments, the learning experience is more enjoyable and effective when dynamic interpersonal interactions form a significant portion of the course. Just as in the classroom, online learning is enhanced when teachers are actively involved in the learning process. Frequent communication, feedback, and scheduled tutoring or skill checks benefit student learning and contribute to the structure and communication that most K–12 learners need in the absence of meeting face-to-face at established times.

Even within course activities, consistency and structure help students understand what is expected of them. For example, a uniform method for online discussions will help students plan their participation and allocate time to prepare for the discussion. Both students' and teacher's roles in online discussions should be defined and understood. Discussions that are designed with open-ended questions lead to higher-order thinking and deeper learning. Teacher responses that include specific feedback and extension questions tend to increase student participation by keeping the discussion going in new directions.

## Online Content Learning

In an online course, students spend significant time working independently. Courses designed to require more time applying the course content through writing and speaking correspond to higher achievement, as do simulations, manipulatives, and tutorials that offer student feedback. Getting the most out of online-learning activities depends on a student's skill in locating and evaluating information, among other information literacy and information and communications technology skills. Teachers and course designers should expect that some students would need opportunities to develop these skills before applying them in the content they are learning. (For more information about