Evaluation in Online Learning

Liz Pape, Matthew Wicks, Christopher Brown, and W. Patrick Dickson

Liz Pape is CEO of the Virtual High School Global Consortium. Matthew Wicks is President, Matthew Wicks & Associates, Inc. Chris Brown is Senior Vice President of Research, Pearson. Patrick Dickson is Professor of Educational Psychology & Educational Technology at Michigan State University.

The rise in the number of online programs, of various organizational types, sizes, and educational approaches, raises numerous questions for educators and policymakers around a central idea: How good are these programs? Specific questions about student achievement could include the following, however an online program evaluation could focus on issues beyond student outcomes and achievement, such as equity, access, and development of online teachers:

- What population(s) of students are being served?

- What level of student learning is being achieved?

- Whether student outcomes have improved or not, why is this so?

- How can student outcomes be further improved?

Program administrators can help answer these questions through a variety of research and evaluation efforts, and policymakers are increasingly expecting online programs to report on their results. However, there are a variety of program evaluation considerations that should be addressed at the start of implementing an evaluation.

Internal vs. external evaluation

Evaluation processes can either be internal (conducted by internal staff) or external (conducted by an outside individual or team). External evaluations tend to look at an entire program and provide the benefit of bringing in an outside perspective that may uncover potential weaknesses or add credibility to results. External evaluators also may receive more unfiltered feedback from a variety of stakeholders (parents, teachers, local school administrators) than the program administrators might receive. The main drawback to external evaluation is time and expense, both in hiring someone from outside the program and also in the need for the evaluator to become familiar with the program. Some programs combine internal evaluations that are done every semester with external evaluations that are done every year (or less often). The external evaluation can be used to help establish data gathering procedures for ongoing internal evaluations. Regardless of whether the evaluation is internal or external, it should be an ongoing part of a culture of continuous improvement.

What to evaluate

An evaluation should be closely tied to the stated mission of the online program, to address the question of how well the program is meeting its goals. It might also address issues identified during program implementation. If the goal of an online program is to give students more opportunities for recovering course credits in order to graduate, then two evaluation measures could be the number of credit recovery courses being offered, and the graduation rate for students in those courses. If the mission of the online program is

to increase 21st century learning opportunities for a district's students, possible evaluation criteria include 1) the number of new courses available to students; 2) the increase in student proficiency in use of Web 2.0 tools; and 3) the increase in teachers' use of Web 2.0 tools in classroom and online instruction. It is helpful to categorize the evaluation metrics into immediate, intermediate and longer-term outcomes and then to ensure that the evaluation measures all three types, with different expectations for pace of change. An immediate outcome might be students' increased use of an electronic library or instructors' increased use of background content resources, whereas a longer-term outcome might be an increased graduation rate. Experienced evaluators can provide a number of possible variables to consider in an evaluation.

Who should be involved

In order to ensure that evaluation makes a difference in practice, it is crucial to the success of any evaluation to ensure that all stakeholders are sufficiently consulted and that they buy in to the evaluation process. This provides better inputs, enhances the quality of the results, and in most cases increases the opportunities to use the results. For evaluations that are part of a continuous improvement approach, this is essential.

When to evaluate

One of the benefits of an on-going evaluation process is the ability to quickly gather the critical data which measure program success, in order to make needed changes on an on-going basis. Semester-based data (such as course completion rates, student drop rates, student achievement levels, technical and administrative support satisfaction rates) should be quickly calculated so that needed changes can be identified and implemented as soon as possible. Understanding how to effectively develop and use an evaluation program can not only help to answer questions about the effectiveness of an online program, but can also play a crucial role in improving a program.

The future of evaluation in online learning

The online environment offers an exceptional opportunity for enhancing student learning by using the rich data automatically gathered by learning management systems, and offers opportunities for continuous assessment and improvement. Students are in a sense "entering their own data" in real time, and this data is collected by the learning management system. Gathering such fine-grained information about students in traditional face-to-face classrooms is almost impossible and would certainly cost a fortune.

Data routinely gathered by the learning management system include the time of day, day of week, duration of students' logins, completion of assignments, scores on quizzes, and participation in discussion forums. These data can provide students, instructors, course designers, and program administrators a rich description of overall student activity in a course and detailed "observations" of individual students. Such real-time data can be immediately "actionable" in the sense of enabling an instructor to make data-informed decisions about how the course is doing overall and how individual students are progressing.

Research at the Michigan Virtual School has shown that even such simple measures as frequency of activity (number of clicks) were highly predictive of student success.[3] This research also showed the wide variation in patterns of student activity in the trajectories of individual students over time and the variability among online courses.

Until the advent of online courses, administrators and teachers did not have such rich, real-time data at their fingertips. Because online learning is still quite new, it is not surprising that educators are only beginning to understand how to make use of these data to provide fast feedback to students and mid-course corrections based on overall patterns of student performance. In addition, although the data are available, the current data displays are often poorly designed for use by busy teachers.

By focusing increased attention on understanding and using data on individuals and courses with a view to informing pedagogical decisions while the courses are in process, we may gain greater insight into what makes a course "good" for which individual students than can ever be inferred from evaluations based on end-of-course data alone. Most importantly, some changes can be incorporated immediately, while others are part of ongoing improvements to course design and teaching practices.

An International Perspective on K-12 Online Learning

Allison Powell

Allison Powell is Vice President, North American Council for Online Learning. This article is based on information from an international survey of online learning initiatives conducted by NACOL.

In the United States there is increasing acceptance of online learning in grades K-12, as more and more students and parents choose the benefits and convenience of online courses and schools. Many people, including policymakers and educators, don't realize the extent to which online learning is being implemented in countries across the world.

Research has been done on several virtual schools in North America; however, relatively little information has been made available in the U.S. about current K-12 online learning initiatives in other countries. Multi-billion dollar deals and national e-learning plans and initiatives are being developed to bring online learning to K-12 students all over the world. A few examples are highlighted below:

- In September 2007, the UK and China signed a deal to create e-learning content for 20 million Chinese students to access content beginning in the spring of 2008. With this deal, education is now seen as a top export for the UK, bringing in over £28bn for the economy, more than the car and financial services industries.[4]

- New Zealand, Hong Kong, and Singapore have developed national Information and Communication Technology (ICT) plans with sections on how to effectively integrate e-learning throughout their individual nation's K-12 education systems.

    - In Hong Kong's *IT in Education Strategy 2004* plan, the development of e-Learning in local primary and secondary schools in the next few years was discussed.[5] In Hong Kong, they believe that e-learning is not likely to take over

---

[3] Dickson, W. P. (2005). Toward a deeper understanding of student performance in virtual high school courses: Using quantitative analyses and data visualization to inform decision making. Report submitted to the Michigan Virtual University, July 21, 2005.

[4] UK and China Sign e-Learning Deal. September 24, 2007. http://news.bbc.co.uk/1/hi/education/7010282.stm

[5] http://www.emb.gov.hk/index.aspx?langno=1&nodeID=2497