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Supporting the Principal's Data-Informed Decisions

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Making Virtual Education a Reality

By Nancy Protheroe

Effective virtual education is more than simply a high-tech way for teachers to connect with students. Schools and districts across the country are using virtual education as a way to address a variety of issues and student needs. The trend is toward more courses being offered virtually or through a "blended" approach in which virtual aspects support face-to-face teaching. Currently, two states—Michigan and Alabama—have online learning requirements for student graduation (Watson, Gemin, & Ryan, 2008).

In addition to enrollment and availability, the quality of the experience that students have in a virtual classroom must be addressed. According to the Southern Regional Education Board (SREB) Educational Technology Cooperative (2006), "The rapid growth of online learning in the past 10 years has given middle grades and high school students greater access to academic courses than ever before. It also has focused attention on what constitutes a quality online course" (p. 1).

In support of this emphasis on the need for high-quality instruction, at least two states have added an online teaching requirement to their teacher certification programs (Cavanaugh, 2009).

The specifics of how virtual courses are offered depend on why a school is making the opportunity available and on the personnel and technical resources that a school has available. However, there are some common issues that must be addressed in the development of any virtual learning program. The research demonstrates the reasons why a school might decide to offer instruction virtually, the impact of a virtual approach on student learning, student and teacher characteristics related to effective virtual teaching and learning, and

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Just the Facts

- "The rapid growth of online learning in the past 10 years has given middle grades and high school students greater access to academic courses than ever before. It also has focused attention on what constitutes a quality online course" (SREB Educational Technology Cooperative, 2006, p. 1).
- "The innovative part . . . isn't just that it's online; it's in the flexibility that it provides for students" (Webb, 2009, p. 64).
- "Online teaching shares much with face-to-face teaching, but it also has a unique set of skills and requirements if educators are to teach well online" (National Education Association, 2006, p. 1).
- "In my over 10 years of experience with the design and delivery of…online courses, I've recently begun to realize that the real so-called 'killer application' of online education is blended learning" (Pape, 2006, p. 18).

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the factors that should be addressed during planning.

Why Offer Virtual Instruction?

There are many reasons a school might incorporate virtual instruction. Such programs can provide additional and specialized courses. For example, small or geographically isolated schools can expand their course offerings with AP classes or specialized courses, such as music appreciation or economics. The approach may also offer a solution for schools that don't have qualified teachers for classes they would like to offer. Online credit-recovery courses are an alternative for students who have been unsuccessful in their brick-and-mortar schools and are at risk of failing or dropping out. Virtual education can also support efforts to personalize instruction. For example, virtual programs can be used to provide more challenging instruction for gifted students, enabling students to proceed at their own pace (Vanderkam, 2004). Many of these projects, as well as others that simply make instruction available during nontraditional times, have the potential for dramatically increasing the academic options that are available to students. In Webb's (2009) view, "The innovative part [of virtual instruction]…isn't just that it's online; it's in the flexibility that it provides for students" (p. 64).

Some virtual programs have had documented success in getting students who had previously disengaged with traditional schooling back on track to graduation.

One Utah district implemented an online program to support home-schooled students and the district recovered $2,500 per student in state funding. Students use a district-provided curriculum as well as district-supplied books and other materials. Parents continue in the role of teacher, while district teachers monitor student progress and communicate with families weekly (Anderson & Horn, 2009, p. ii).

What Does It Look Like?

Although there are various reasons why schools might offer virtual instruction, there are also various ways to conduct online learning. Means, Toyama, Murphy, Bakia, and Jones (2009) suggested that there are two broad types of virtual instruction:

- Learning conducted totally online as a substitute or *alternative* to face-to-face learning
- Online learning components that are combined or *blended* (sometimes called "hybrid") with face-to-face instruction to provide learning *enhancement*. (p. 9)

Online instruction also may be synchronous, asynchronous, or a combination of both. Synchronous classes occur in real time: the teacher and students are logged on at the same time. In an asynchronous class, students log on at their convenience, although they typically complete assignments according to specified deadlines. Although the asynchronous format offers maximum scheduling flexibility for students, it also limits opportunities for instantaneous teacher feedback and discussion. In recognition of this, Clark County (NV) School District's Virtual High School uses a combination of the two approaches, with some work available any time, and an hour required each week for direct (synchronous) teacher and student interaction (Watson and Ryan, 2006).

Student Achievement in the Virtual Setting

A few years ago, Smith, Clark, and Blomeyer (2005) characterized evidence concerning the effectiveness of online learning programs as "emerging," with simple summaries of studies giving way to "more systematic meta-analytic methods" (p. 14). Cavanaugh, Gillan, Kromrey, Hess, and Blomeyer (2004) conducted a meta-analysis of 14 Web-delivered K–12 classes conducted between 1999 and 2004. They found no significant difference in performance between students who participated in online programs and those who were taught in face-to-face classrooms.

Lessons Learned from Successful Online Credit Recovery Programs

- Motivating students who have failed in the traditional classroom setting is a key to success for credit recovery programs. The flexible and self-paced nature of online courses can motivate; these attributes can also remove the social stigma of credit recovery. Online courses may be more engaging to some students than traditional face-to-face classes. In addition, programs that use online courses can address mobility issues of students who move regularly from one school in the district to another.
- Online learning is particularly well suited for students recovering credit because it allows for individualized instruction, both by the teacher and through the use of course management technology. Online curriculum must be rigorous to ensure that students are learning the material, and not simply moving through the course. Diagnostic testing that allows students to demonstrate mastery of the elements of a subject that they learned in their previous attempt to pass the course, and to move on to the parts of the course that they need to focus on, keeps students engaged.
- The self-paced aspect of online courses is particularly valuable to at-risk students, who may associate education with difficulties and stress, compounded by learning deadlines imposed by arbitrary calendars or school hours.
- Providing credit for work or community service allows students to be engaged in a valuable activity outside of school and to have this experience count towards graduation. It also motivates students to complete the program.
- Most online programs serving credit recovery and at-risk students—but not all—have a significant face-to-face component. The blended approach is important because it provides expanded student support and face-to-face contact. The online component—whether fully online or blended—provides 21st century skills to a group of students who often have less than average exposure to computers and technology.
- Programs that keep students from dropping out or attract students back into the school system may pay for themselves—or at least defray costs—by capturing the state public education dollars tied to those students. Online programs are particularly scalable and able to expand more easily than programs based entirely on brick-and-mortar classrooms.
- Success stories and anecdotes regarding the benefits and value of online learning for both at-risk students and the schools serving them abound. The need exists for federal funding of quantitative research in this area. (Watson & Gemin, 2008, pp. 14–15).

In a more recent meta-analysis of scientifically rigorous studies of online learning conducted by the U.S. Department of Education, researchers "found that, on average, students in online learning conditions performed better than those receiving face-to-face instruction" (Means et al., 2009, p. ix), with effects especially strong for blended learning as contrasted with face-to-face instruction. However, the researchers also found it significant that when comparing face-to-face and blended instruction, the blended learning approach typically included more instructional time as well as additional instructional elements. Means et al. (2009) cautioned that few of the studies focused on K–12 environments and that "an unexpected finding was the small number of rigorous published studies contrasting online and face-to-face learning conditions for K–12 students" (p. ix).

In reviewing the findings of the Department of Education study, Cavanaugh (2009) suggested that findings from some less rigorous studies not analyzed by the Department should not be ignored. For example, AP passing rates at some virtual schools exceeded state and national averages. In addition, some virtual programs have had documented success in getting students who had previously disengaged with traditional schooling back on track to graduation.

Researchers suggested that work must be done to "study more closely the *factors* that affect student

Should your school develop new virtual courses internally or purchase/lease them?

- **Local development**

  Advantages: Promotes involvement by teaching staff, provides a long-term solution because costs are not a factor on a continuing basis, allows content to be better aligned to standards, encourages integration of technology.

  Disadvantages: Requires technology (hardware/software/expertise) to host the course, requires staff time, may need training for staff members who are developing the content, may generate legal issues involving copyright and content licensing.

- **Course purchase or rental**

  Advantages: Offers proven course content if information available on use by other schools or districts, upgrades may be available as part of agreement, is available immediately, typically includes training and other related services.

  Disadvantages: Typically has higher upfront or out-of-pocket costs, may be difficult to change content, may not align with standards (Bodensteiner and Pingree, 2002).

learning in virtual schooling environments" (Cavanaugh, Gillian, et al., 2004, p. 5). In their meta-analysis, Smith et al. (2005) found that studies "indicate that more communication, more feedback, and more student-teacher interaction have an apparently positive affect on student performance" (p. 55).

Are All Students Candidates for Virtual Instruction?

Kleiman, Carey, Bonifaz, Haistead, and O'Dwyer (2005) reported that students who are likely to be successful in online courses demonstrate "the ability to learn independently, effective written communication skills, self-motivation and discipline, and efficient time management skills" (p. 6). The Illinois Online Network (n.d.) provided guidelines for what makes a successful online student:

> In the Virtual Classroom, nearly all communication is written, so it is critical that students feel comfortable in expressing themselves in writing . . . [Students must] be willing to "speak up" if problems arise. Many of the non-verbal communication mechanisms that instructors use in determining whether students are having problems (confusion, frustration, boredom, absence, etc.) are not possible in the online paradigm. If a student is experiencing difficulty on any level (either with the technology or with the course content), he or she must communicate this immediately. Otherwise the instructor will never know what is wrong [online].

Educators can support students who are engaged in online studies in two ways. First, they can help students assess their own readiness for taking an online course. Second, they can counsel students who seem ill-suited to this mode of instruction about potential problems and provide special assistance, either through the way courses are structured or by making skill-building opportunities available.

Smith et al. (2005) suggested that schools should be proactive in assessing students' likelihood of success with virtual courses. For example, the Virtual High School (n.d.) provides an online survey that asks students to do a self-assessment on reading ability and the ability to work independently. Another approach is to develop an orientation to "acquaint students with the online learning environment" (Cavanaugh, 2009, p. 9). Some schools provide online tutorials or opportunities for practice on such topics as working in teams in the virtual classroom.

The issue of student readiness may be particularly important for schools that are considering a virtual approach for students who have previously been unsuccessful in an academic setting. According to Cavanaugh (2009): "struggling students are often relative novices in self-monitoring. They require

scaffolding and time to develop independence and expertise" (p. 9). In addition, the text-heavy aspect of online instruction may pose additional difficulties for many of these students.

What Makes an Effective Virtual Classroom Teacher?

As the number of virtual education classes increases, it becomes increasingly important that each of these is taught by an effective teacher. According to the National Education Association (2006), "Online teaching shares much with face-to-face teaching, but it also has a unique set of skills and requirements if educators are to teach well online" (p. 1).

An increasingly strong knowledge base about virtual teaching and learning highlights the need for some specific skills, and "research shows that a teacher's skill in face-to-face teaching does not necessarily transfer to an online classroom" (Glowa, 2009, p. 2).

For example, in an online environment, teachers are unable to "read" students' facial expressions and so must be especially careful to assess student understanding on an ongoing basis (Fulton, 2002). Virtual teachers may find they need to provide even more structure than they do in a traditional classroom. Teachers also must give prompt and regular feedback to both student work and technical questions (Cavanaugh, Hughes, & Blomeyer, 2006; Zucker & Kozma, 2003).

Virtual teachers may find they need to provide even more structure than they do in a traditional classroom.

Some observers of virtual education feel that in addition to strengthening the skills they already have, virtual teachers must "acquire a new bag of tricks that work in cyberspace" (Pape & Adams 2002, p. 19). Bischoff (2000) discussed the need for virtual teachers to focus their efforts to make themselves "visible." A guide by the National Education Association (2006) described the need for virtual teachers to develop a "voice" because virtual students do not have the advantage of seeing facial expressions and body language.

The Southern Regional Education Board (2006) highlighted the teacher characteristics that are especially important in the virtual learning environment:

> Effective online teachers must possess the ability to prepare quality written communications. Appropriate and effective writing not only conveys information—it encourages and supports students. Words and body language that traditional classroom teachers use must be translated to the online environment for online teachers to be successful. (p. 2)

Through their personal interest and abilities, some teachers may be able to move naturally into the realm of virtual teaching; others will need time and training to hone their skills. "In the 10 years since Web-based courses were first made available to students, the understanding of what is required to be a successful online teacher has increased significantly" (Southern Regional Education Board, 2006, p. 1).

Pape and Adams (2002) maintained that "the number one mistake a system can make is to fail to recognize that teachers need to be trained to translate their face-to-face courses into effective online learning opportunities" (p. 19).

Planning for Virtual Education

One superintendent suggested that planning for virtual education should begin with creating a vision of how virtual education could complement the more traditional education program (Habron as cited in Solomon, 2005). For example, Pape (2006) credited blended learning—which uses online experiences and resources to strengthen face-to-face instruction—with complementing the more traditional approach and said, "In my over 10 years of experience with the design and delivery of . . . online courses, I've recently begun to realize that the real so-called 'killer application' of online education is blended learning" (p. 18). Additionally, it is important to ensure

that "instructional needs, not technology, [are] the driving force when considering implementing online courses" (Davidson, 2005, p. 92).

Pape (2006) suggested that schools and individual teachers begin by using Web-enhanced instruction, with most instruction occurring in the classroom but supported by the online posting of the syllabus and Web sites as supplements to textbooks and other more traditional resources. A next step toward offering virtual classes might be what Pape called the hybrid classroom. Using this model, students might attend a regular class four days a week that has instruction supplemented by online requirements and opportunities for virtual communication and interaction.

Another important aspect of online instruction is teacher-student and student-student communication. For example, Clark County's Virtual High School requires that teachers respond to student questions and other communications within 24 hours during the school week (Watson and Ryan, 2006). Requiring online teachers to hold "regular office hours," especially if the course does not include any regular class sessions, is another way to provide the necessary support for students.

Planning for virtual education also needs to account for the details of everyday school life. For example, one high school decided to hold its online classes during the last period of the school day. That way, "if [students are] in the middle of something, they can keep going," explained the school's curriculum director (Trotter, 2001). Further, Webb (2009) suggested that school leaders who are interested in moving toward implementation of online opportunities in their schools "may want to begin a discussion group with fellow administrators to work through the implications" (p. 66).

Virtual education offers many opportunities to enhance learning. One of the primary advantages is flexibility. Virtual education can be tailored to meet the needs of individual students, classes, and schools. Through online courses and blended learning, virtual education can address and support the diverse academic needs of a wide range of students and help personalize the school environment. PRR

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