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Education Policy Brief

Promises and Pitfalls of Virtual Education in the United States and Indiana

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UPCOMING POLICY BRIEFS . .

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INTRODUCTION

The Internet has unquestionably become a powerful force in transforming organizations in both the private and public sectors, including public education. Some educational reformers now view virtual schools, in which the majority of course content is delivered online, as a viable alternative and innovative means of educating K-12 students. As of September 2007, 42 states, including Indiana, had some form of public online learning program, and many of the remaining states had plans for online learning in development.[1]

The number of students enrolled in online classes is expanding rapidly. For instance, during the 2000-01 school year, Louisiana Virtual School (LVS) enrolled 130 students from 20 schools in 12 different courses. Seven years later, LVS enrolled more than 5,000 students from 240 schools in 52 different courses.[2] The growth seen at LVS is indicative of the growth in virtual education seen across the country. A study conducted by the Sloan Consortium (2007) estimated that between 600,000 and 700,000 public school students were enrolled in a fully-online or blended class during the 2005-06 school year,[3] and the Peak Group estimates one million online enrollments in 2007.[4] These numbers have risen over the last several years and will likely continue to increase with various initiatives underway across the country, such as the Michigan Merit Curriculum, which requires all Michigan students to have an online learning experience as a prerequisite for high school graduation.[5]

The aim of virtual education is to provide educational programs and curricular opportunities that may not be available to students in their own schools and classrooms. Particularly, advocates believe virtual schools have the potential to meet certain needs of specific groups of students that a traditional setting might be unable to, such as filling curriculum gaps, providing AP courses and flexible scheduling, providing challenging coursework for gifted students, and allowing students to make up missed credits. However, virtual education remains a controversial subject with many obstacles slowing its development and success. Finding acceptable accountability measures for virtual programs that are often different from the traditional measures of physical classrooms has created questions at all levels—from the student to the state. The variety of benefits and obstacles, both present and future, compounded by increasing program and student enrollment numbers, has thrust virtual education to the foreground of the educational debate.

This policy brief will examine the main aspects of virtual education to provide a summary of the current status of virtual education in the United States. Although there are many issues that surround virtual education, this policy brief will focus on the primary issues of funding, program and teacher quality, and administrative oversight and accountability. Finally, policy recommendations are offered for education leaders and policymakers to consider as a means to moving virtual education forward in the state of Indiana.

Definitions of Supplemental and Full-Time Virtual Education

There are two types of public virtual education programs: supplemental programs and full-time schools.[6] However, the dis-

tinction between the two categories is beginning to blur, as some full-time schools are now offering supplemental courses, and vice versa. One such school is the Missouri Virtual Instruction Program, a state-led virtual program that offers courses at all grade levels, on both a full-time and a supplemental basis. According to a study by the North American Council for Online Learning (2007), approximately one third of the respondents who identified their program as supplemental reported that full-time students were also enrolled.[7] Even within the two categories, variation exists with respect to governance models, types of students, geographic extent, course offerings, etc.

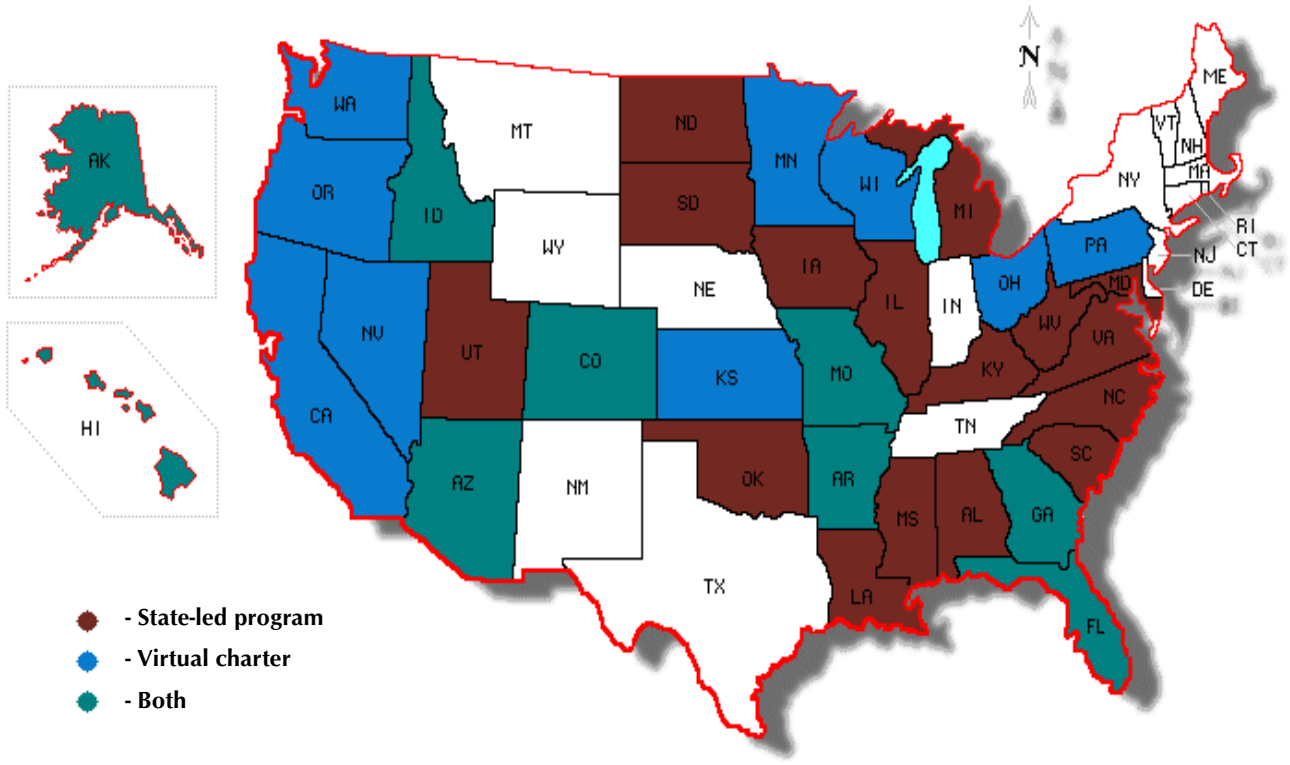
Supplemental

The aim of supplemental, or part-time, virtual programs is to give students the opportunity to take online courses in addition to the classroom curriculum offered by the students' schools. Supplemental programs typically do not grant credit or award diplomas, responsibilities which remain with the local school. Likewise, the local school is responsible for oversight and assessment of student progress and achievement, as well as provisions of special education services. Although some supplemental programs offer courses to elementary and middle school students, the majority serve only high school students. Presently, supplemental virtual programs are more numerous than full-time virtual schools, serving more students than their full-time counterpart.

The majority of supplemental programs are run at either the district or state level. A recent study by Education Week (2008) found that a total of 25 states have established and/or financed state-led virtual programs (see Figure 1).[8] State-led programs are created and administered by the state, usually the state education agency (SEA), and may be funded through various initiatives such as a state grant or appropriation. These programs often serve a vast number of students. Florida Virtual School, for instance, served more than 52,000 students in over 90 courses during the 2006-07 school year.[9] Conversely, district-led supplemental virtual programs are created and administered by a single district or jointly by multiple districts. These programs may serve only the student population within the boundaries of the district(s) or may enroll students across multiple districts within or even outside the state. Other supplemental virtual programs, which are not state- or district-led, may be run by private education service providers or universities.

Indiana has multiple locally-initiated supplemental virtual programs, including the Indiana Online Academy, Indiana Virtual Academy, and Indiana University High School. Presently, there are no laws or regulations specifically governing supplemen-

Figure 1. States that have established state-led and virtual charter programs.



Sources: Technology Counts 2008 STEM, *Education Week* and Editorial Projects in Education Research Center; Watson, J., & Ryan, J. (2007). *Keeping pace with K-12 online learning: A review of state-level policy and practice.* Retrieved January 24, 2008, from http://www.nacol.org/docs/KeepingPace07-color.pdf

tal virtual programs of public schools in Indiana. The Indiana Online Academy (IOA) is a virtual program run by the Central Indiana Education Service Center in Indianapolis. The program is partnered with over 90 schools across Indiana and enrolled 162 high school students in the fall of 2007.[10] Each of the approximately 50 different high school courses has a flexible start date, where a student can choose from three or four available date options to begin the course.[11] IOA also has a prospering summer school program which served 710 students in 46 different courses in summer 2007.[12]

The Indiana Virtual Academy (IndVA), a supplemental virtual program coordinated by four local districts in southeast Indiana, offers courses at both the high school and middle school level. IndVA is open to all schools and students in Indiana and has served students from 70 of the 92 counties in Indiana. Since spring 2003, the program has had 1,915 students registered for fall and spring semesters.[13] Like IOA, the summer program at IndVA has seen tremendous growth. In summer 2003, the program enrolled 60 students; the enrollment has been steadily increasing—to 1,296 students in summer 2007, and more growth is anticipated for summer 2008.[14]

The Indiana University High School (IUHS), administered by Indiana University, is part of a larger combined distance learning program at the university and high school levels. IUHS is accredited by the North Central Association Commission on Accreditation and School Improvement and offers a high school diploma program in which students can earn their diploma through a combination of online and correspondence courses. Additionally, students can take courses as independent study and transfer the credits to their local high schools. Nearly half of the over 100 courses offered by IUHS are available online. IUHS receives more than 4,000 course registrations annually (4,368 course registrations in Fiscal Year 2006-07) and has witnessed a growing trend of students taking more online courses as opposed to traditional correspondence courses. Presently, more than half of IUHS students are taking online courses, up from 36% in Fiscal Year 2004-05.[15] Enrollment at IUHS is not limited to Indiana, but is extended to students across the country.

All courses offered by each of these three programs are taught by Indiana certified teachers and meet or exceed Indiana state standards for each subject area. Students generally pay a course fee (typically under $300 per credit) and may be required to get approval from their high school guidance counselor to attend. All three programs provide asynchronous online courses, allowing students to work at their own pace. Time restrictions for course completions do apply, nevertheless. At IUHS, courses typically take 12-18 weeks to complete, but students are given one year from the date of registration to complete the course.[16] On the other hand, IOA requires courses to be completed in 16 weeks, and IndVA courses are to be completed in 15 weeks.[17]

Full-time

Full-time virtual schools provide the majority or the entirety of coursework to students via the Internet. These programs are most commonly run as public charter schools created and administered by a public education institution, such as a school district or a university, in combination with a private education service provider. This service arrangement provides a full spectrum of schooling services including curriculum, technology, and infrastructure that a single district may not be able to provide independently for the same cost. Full-time virtual schools, which may serve all grade levels, are responsible for every aspect of a student's education, including oversight, administration of state assessment exams, and provision of special education services. Certified teachers monitor the progress of each student and communicate with the student and/or parent daily or several times a week. Additionally, most programs provide the necessary technology, such as a computer and software, and course materials, as part of the program offering—unlike supplemental programs, which often charge both material and tuition fees, either to the student or the student's school.

Currently, 18 states have full-time virtual schools[18] (see Figure 1) and many states have attempted to create or revise charter laws to include virtual charter schools. As of January 2007, there were 173 virtual charter schools serving 92,235 students.[19] Presently there are no full-time virtual schools in Indiana. In April 2007, two virtual charter schools, the Indiana Virtual Charter School and the Indiana Connections Academy, were legally approved through Ball State University. The funding for these two cyber charter schools, which would have come through the charter school funding system already established by the state, was rejected in 2007 by the Indiana General Assembly during budget deliberations. Cost estimates projected first year funding levels at $11-$16 million for an enrollment of 2,200 students and future expenses at as much as $50 million per year for 10,000 students.[20] As a part of HEA1001-2007, the state budget bill, the legislature placed a two-year moratorium on funding for virtual charter schools, allowing the state to further explore the virtual schooling issue.[21] A virtual charter is defined in HEA1001 as "any entity that provides for the delivery of more than fifty percent (50%) of instruction to students through virtual distance learning, online technologies, or computer-based instruction."[22]

As of January 2007, there were 173 virtual charter schools (in 18 states) serving 92,235 students

Although the state legislature placed a moratorium on funding for full-time virtual charter schools in Indiana, a new breed of charter school has received conditional approval through Ball State University and is set to open its doors in August 2008. Working in conjunction with Ball State and K12 Inc., who will provide the curriculum, technology, and school services, the Hoosier Academy will provide students with a blended curriculum consisting of courses which use a combination of online work at home and traditional classroom work at a physical learning facility. This blended instructional approach ensures that Hoosier Academy delivers less than 50% of its instruction online and therefore is eligible for public funding under charter school law.[23]

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Policy Perspective

EXPANDING EDUCATIONAL OPPORTUNITY AND INNOVATION THROUGH ONLINE LEARNING

Susan Patrick

Growth

Online learning is growing at 30% annually in K-12 education and shows no signs of slowing. More than half of all school districts in the United States offer online courses, 26 states have state virtual schools providing courses for schools, and 18 states allow full-time online programs to serve K-12 students.

Online learning is prolific in higher education, as well, with one in five college undergraduate and graduate students taking an online course. Additionally, 30-50% of workforce training is done using e-learning. It follows that students who have access and experience to rigorous coursework in K-12 education through online learning will be better prepared for success in college and lifelong learning.

The primary reason that schools offer online education is to expand access to educational offerings and courses that are otherwise unavailable. Online education courses help meet the individual needs of students - both at-risk students and gifted students that need acceleration, customized learning experiences, or more individualized instruction and support.

Online learning provides high-quality courses for students, offered in engaging formats. Highly qualified, licensed instructors deliver the online instruction and track student progress. These program features expand educational opportunities for students regardless of geography, family income level or background. Another value added by online learning is the more rational use of time, both for student and instructor, to provide one-on-one instructional support for more rigorous and interactive instruction.

The use of data to inform instruction, strong instructional design of the courses, and new formative assessment models provide performance-based online learning environments with tools to personalize, customize, and individualize instruction in ways never before possible in a traditional classroom setting.

Unfortunately, educational policies and professional development do not always keep up with innovations occurring in the field. Online learning provides a number of challenges for existing educational policies in funding, teacher training and licensing.

Funding Models Not Ready for Online Learning

School funding in general, and funding for virtual schools in particular, varies greatly from state to state. In states such as California, receiving funding based on attendance for online courses is a major factor preventing districts and schools from offering courses to students. Making sure that every student has the opportunity to enroll in an online course or program, if it is academically appropriate for the student, is needed. States need to update laws to allow for students to enroll in one or more online courses, or take a full-time program, if desired. In some states, this will require legislative and policy changes to ensure equal access to high-quality online learning for every student. Florida passed a law expressly mandating that every student has access to online courses, as long as they are academically appropriate - meaning no student can be denied the opportunity to take an online course. Following, Florida's funding model funds every course by individual student enrollment and by performance, i.e., successful completion of the online course based on competence.

Professional Development

Innovations such as online teaching will expand professional opportunities for K-12 teachers that include part-time positions, adjunct faculty positions and telecommuting opportunities that have never existed before for licensed teachers. This is consistent with the overall expansion of increased part-time, flexible and telecommuting job options in the 21st century workforce. New opportunities for highly qualified teachers to teach at a distance are important, given the teacher shortages in many areas of the United States, especially in subject areas such as math and science.

Teacher preparation programs in other countries, such as Singapore and Mexico, include preparation requirements for training online teachers, technology use, and the mastery of digital content and resource use in a new pedagogical approach effectively. Likewise, teacher preparation programs in the United States should offer similar training to pre-service teachers as part of preparing teachers for 21st century learning.

Conclusion

New instructional models, redesigned courses and content, new funding models and policies are all part of the formula of changing the way education is delivered in a digital age. At the same time, education policies that restrict access to students enrolling in online courses are often based on policies that were set long ago - and usually did not foresee the age of virtual education as a way to expand access, accelerate learning and bridge gaps and disparities that exist across K-12 education. With quality and increased access as the drivers of new online delivery models, schools can begin to ensure that every student, regardless of their geography, income level or background, has access to the very best education the 21st century has to offer.

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Susan Patrick is President & CEO of the North American Council for Online Learning

Policy Perspective

VIRTUAL EDUCATION AND THE FUTURE

Ron Brumbarger

Leading an Internet development firm, I've seen firsthand how technology is changing the way we all live, work, and learn. Today, more than 25 million Americans telecommute every day, working from home via the Internet; 77% of corporations use online personnel training; and more than 2.5 million U.S. college students are taking classes online.

Technology is rapidly changing K-12 education as well. Nationally, 42 states offer some type of full- or part-time virtual learning programs accounting for roughly one million enrollments, over triple the number since 2002. In 18 of these states, nearly 100,000 students attend full-time in 173 virtual public charter schools. Recently, Michigan became the first state in the nation to require students to participate in an online learning experience before they graduated.

Public education has embraced virtual learning to better engage students as well as more readily meet their various learning styles. The tremendous diversity of programs and promising academic results shows it. Full-time, supplemental, and even "blended" programs provide 24/7, customized learning opportunities to all stripes of students drawn by almost any circumstance imaginable. Many virtual programs also demonstrate strong academic success and rank among the top performing schools in their states. Particularly noteworthy are the gains virtual schools make with special needs students and those entering below grade level, oftentimes a significant plurality of enrollees.

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Inexplicably, Indiana has chosen to swim against this wave of national progress and success. In 2007, the Indiana General Assembly voted to prohibit funding for virtual charter schools and other innovative education models relying in large part on technology. In doing so, they not only closed two virtual charter schools and along with them the dreams of hundreds of Indiana families seeking better educational options, but put at risk Indiana's and our children's future in this global economy.

What was this virtual school option families sought? The Indiana Virtual Charter School (INVCS) was planned as a full-time virtual school when approved by Ball State University. Families received a computer and Internet connection at no cost. Other materials, like textbooks, workbooks, materials for science, art, music and other hands-on projects—everything necessary for the school year—were to be shipped to the student, also at no cost to the family.

Armed with these tools, students were to access daily lessons online, guided by a parent or other responsible adult. INVCS' plan was to use an innovative Web-based curriculum created by K12 Inc., the nation's leading provider of online educational programs. The program met Indiana Academic Standards, and the school and students had to meet the same requirements as for other public schools, including participating in ISTEP+.

INVCS offered state certified teachers to support students as well as the parents how provided daily supervision and involvement. Teachers assign lessons, monitor progress, and regularly communicate with students and families via phone, E-mail, field trips and face-to-face meetings. Far from turning education into a faceless, remote-controlled enterprise as some opponents charged, INVCS' aim was to create a more customized experience to allow students to learn at their own pace, with support at every step.

Parents and students responded to the program. Interest was strong as more than 12,000 families across the state sought more information and over 1,500 students enrolled in just a few weeks. Special-needs and gifted students, those with physical limitations and medical challenges that limited their attendance at a neighborhood school, were among the many simply seeking a more focused, personalized way to learn.

Families came from all over Indiana. A Brownsburg mother enrolled her daughter having a difficult time in high school and all its "distractions." Another mom from Indianapolis wished to pull her son from a failing school, as did a father in South Bend. A family in Evansville fighting for a quality option for their son who had suffered a serious burn injury that would need years to heal was as relieved to find our virtual school as the mom in Fort Wayne whose son was allergic to lead pencils. They, like hundreds of other families, perhaps chose a virtual school for different reasons, but they all shared the conviction that their child would be served better by that choice.

The opportunity for a virtual school may have passed these families by, but Indiana has the chance to ensure more students don't miss out. Before it adjourned in March, the General Assembly created a study committee on K-12 virtual learning. The committee is charged to look at virtual learning in other states, the services being provided, how it operates, and to make recommendations for its utilization here at home.

For Indiana and our young people, it is a second chance. For their sake and our future, let's hope we get it right. For future Hoosiers to thrive, we must, without delay, embrace fresh and innovative educational models such as virtual schools.

Ron Brumbarger is the President and CEO of BitWise Solutions, Inc.

Policy Perspective

INDIANA'S COMING OF VIRTUAL AGE

Bruce Colston

While completing my teacher certification at Indiana University years ago, I read *Deschooling Society* by Ivan Illich. I was intrigued by Illich's notion that one day, people would be able to access learning from home using technology.

Today, virtual education has made Illich's notion much more of a reality. While not a replacement for public education, virtual education provides educational options for families and students.

What's happening in Indiana?

Hoosier enrollments in virtual education are growing, and the most dramatic increases have come during the past two years. Since 1999, Indiana's providers have served more than 30,000 students. This figure does not include the many students who take virtual courses through their local high schools or from out-of-state providers. A major concern with this rapid expansion is the lack of quality control. As one educator in California said, "It's the Wild West out there."

This issue prompted California to create its own accrediting process for virtual providers who want to offer courses in California. Administered by the University of California, the process requires all providers to be accredited and each course to be reviewed to ensure it meets University of California admission standards. The state will eventually publish a list of approved providers and courses. California's efforts to establish a quality control process underscore an important national trend-one that Indiana has begun to address in at least two ways.

First, the Indiana General Assembly recently passed a law that included the establishment of a committee that will look into the availability of virtual education in Indiana, how virtual education services are provided by other states, the development of content and accreditation standards, and funding and pricing. The committee is expected to complete its work during the summer and fall of 2008.

Second, Indiana's virtual education providers (the Indiana Academy for Science, Mathematics, and Humanities; the Indiana Online Academy; Indiana University High School; the Indiana Virtual Academy; and Ivy Tech Community College) have established the Indiana Virtual Learning Consortium (IVLC), whose mission is to promote the growth of high-quality virtual educational opportunities for Indiana students and schools.

IVLC members are committed to working collaboratively with each other and with various educational constituencies around the state. Members have already met with the superintendent of public instruction and the Indiana Department of Education (DOE) to begin developing virtual education standards for Indiana. For example, IVLC members believe that all courses offered in Indiana should be taught by Indiana certified teachers and that they should conform to Indiana's academic standards.

What is Indiana University Virtual High School?

Established in 1999, the virtual Indiana University High School (IUHS) is administered by the IU School of Continuing Studies. It offers more than 100 high school courses; a general education, college prep, and Core 40 with Academic Honors; Advanced Placement (AP) courses; and undergraduate dual-credit courses. Courses are based upon Indiana DOE academic standards and are developed and taught by certified teachers.

Approximately 1,700 students are enrolled in the IUHS diploma program, and approximately 4,000 others are taking individual courses. Students from 304 Indiana high schools have registered for IUHS courses. Also, there are students representing 47 states and 13 other countries.

There is no typical IUHS student. IUHS attracts students who are seeking a flexible, creative, accredited program that fits their life circumstances. The rich diversity of students at IUHS demonstrates the significant need that virtual education meets for students, families, and schools.

What are some challenges?

IUHS has challenges ahead as it continues to grow. It has instituted new policies to try to improve current completion rates (about 50 percent). For example, students receive electronic notices, as well as phone calls, as coursework reminders. Instructors intervene early on to identify struggling students, and an experimental exam retake policy is helping students overcome a bad start in a course.

IUHS is also attempting to get all courses into an online format that enables students to submit their lessons via the Internet (rather than waiting on postal mail). Research shows that IUHS students in online courses have a better completion rate.

The Future. . . ?

As Indiana moves further into the virtual age, there is likely to be increased:

- demand for virtual learning experiences
- state scrutiny and concern for quality control
- funding requests for virtual education, particularly in school districts with limited resources
- demand for online dual-credit, upper-level, and AP courses to meet new state curriculum requirements and early college initiatives
- competition among virtual providers
- higher education involvement in providing virtual courses

The next few years will be critical as Indiana tackles the emerging issues of standards, accreditation, access, and funding. How the state addresses these issues will go a long way in determining the future of virtual education in Indiana.

Bruce Colston, Ed.D., is Assistant Dean/Director of IU High School Programs, Indiana University School of Continuing Studies

Policy Perspective

KEY CONSIDERATIONS FOR MOVING FORWARD WITH VIRTUAL LEARNING

Tom Pagan

Relentless pressure on Indiana high schools to graduate students within four years requires a variety of measures to assist students obtain the necessary credits to graduate. One such measure is the use of online courses to help students recover lost credits. Indiana schools also use online courses to provide credits for physics, chemistry, foreign language, and Advanced Placement courses especially in rural areas where there is a shortage of qualified teachers in these subject areas. Since it is the responsibility of local schools to award credits, many high schools have concerns about program quality, teacher qualifications and training, and student achievement of virtual education programs.

The lack of state laws or regulations governing virtual education programs in Indiana makes it difficult for schools to decide which program best meets the needs of their students. Cost is much too often the deciding factor when it comes to which virtual program a school uses. As a result, low cost virtual education programs from outside Indiana are more prevalently used in Indiana high schools than Indiana virtual school programs. Low cost virtual education programs often include inadequate or incomplete curriculum, little if any student/teacher interaction or no teacher assigned, and easy credits for students. Many of these programs are no more than computer aided instructional programs with multiple choice questions that guide the student through the course.

For virtual education to provide a meaningful learning experience for students that will supply the necessary foundation knowledge and skills required by higher level courses, virtual education programs must meet Indiana academic standards for each course, include a high level of student/teacher interaction, taught by highly qualified Indiana certified teachers, and require students to successfully complete state approved end-of-course exams. Requirements for high school credits earned for virtual education courses should be no different than course credits earned through traditional school programs.

Training policies of virtual education providers for their online teachers should also be questioned by schools. Teaching online definitely requires a unique set of skills in addition to those required in a traditional classroom. Engaging students online takes special talents and skills that are normally not part of traditional teacher induction programs. Virtual education programs that have embedded professional development for online teachers outperform those with weak or non-existent training programs in terms of student completion and achievement. State policies are needed that require a certain level of training by online teachers before and throughout their online teaching experience. A requirement of four to six weeks of training for online novice teachers and one week per year for experienced online teachers is a consideration.

Another element for schools to investigate in choosing a high quality virtual education experience for their students is the level of monitoring that is done by the provider regarding teacher/student interaction and student engagement. Teachers and students that are held accountable for their interaction time correlates with higher course completion rates and higher approval rates by students. End of course evaluations required by the Indiana Online Academy program consistently reveals that students report they interacted more with their online teacher than their regular classroom teachers.

State funding for virtual education in Indiana is non-existent. Indiana virtual education programs survive on the student fees charged for each course. Students pay the fee in some cases and school districts in others depending on whether the course is offered through the regular school program or not, or if a student is homeschooled. Some states provide a fixed appropriation per year to fund their state virtual education program that is divided on a per diem basis per course. In such states, students are often put on waiting lists to take courses when the state funding for the year has been exhausted. Other states allow funding to follow the child by providing one sixth of the state's per-pupil funding to the state virtual education program for each student enrolled in a virtual course or in Florida's case for each student who successfully completes a virtual education course. The legality of why public school students pay for some required course credits because they are online while other courses are provided by the state is being questioned by parents. It is time that Indiana establishes clear funding mechanisms for its existing virtual education programs while ensuring that they meet well defined policies designed to yield challenging courses while accounting for the variability of students enrolled.

Tom Pagan is the Executive Director of the Central Indiana Educational Service Center

(continued from page 3)

The Hoosier Academy is open to all Indiana students in grades K-10; however, a student must be able to attend classes twice a week at one of the two physical locations in Indianapolis or Muncie. Tuition for the school is free, and the school will also provide the entire curriculum, a computer and printer, and Internet access free to the student.[24]

Promises and Pitfalls

While virtual education may have the potential to offer solutions to several challenges facing public education, it is not without its controversies. Although full-time virtual schools experience many of the same controversies as supplemental virtual programs, full-time virtual schools frequently experience these issues to a much greater extent. Furthermore, full-time virtual schools experience additional challenges that do not regularly confront supplemental virtual programs, such as issues regarding the socialization of students and the role of parents in supporting instruction. Full-time virtual schools, especially virtual charter schools, are also not as widely supported by public school districts as supplemental virtual programs. In fact, a 2007 public opinion survey conducted by the Center for Evaluation & Education Policy regarding public education in Indiana indicated 75% of respondents expressed opposition to the establishment of a virtual charter school.[25] The additional problems which full-time programs face are important; however, the remaining pages in this policy brief will focus on the main obstacles facing both types of virtual programs, specifically funding, program and teacher quality, and program oversight.

Financial

Schools and school districts are continually trying to improve financial efficiency. One of the attractions of virtual education is the possibility of providing increased educational opportunities for students and staff at the same or lower cost as traditional public education. Many educators and policymakers believe that virtual schools, both supplemental and full-time, cost less than their traditional counterparts. On the other hand, many virtual school advocates and administrators argue that the costs of operating a virtual school are not lower, but simply different from those of a traditional school. Although virtual programs generally do not have the operational costs of brick-and-mortar programs such as building and transportation, these programs have much higher technology and curriculum costs. Additionally, the start-up costs of a virtual school can be high.

Since program costs may differ, district geographic borders may be broken, and time can vary, the funding models used to determine traditional public education funding may not be viable for many virtual programs.

One study conducted by Anderson et al. (2006) concluded that operating costs are generally the same for virtual schools and traditional schools.[26] In regard to full-time virtual programs, the researchers estimated that the cost ranges from $7,200 to $8,300 per full-time equivalent (FTE) student. Similarly, they estimated the cost for serving students at approximately $7,500 per FTE for a growing state-led, supplemental virtual program. The researchers indicated that full-time virtual schools can be more expensive than supplemental virtual programs because full-time schools are responsible for the special needs students and for adhering to state and federal accountability requirements.[27] The researchers also noted that the study did not examine the costs for capital or transportation, which are greater for traditional schools. If such factors were taken into consideration, the researchers felt that the benefit/cost ratio of virtual schools would increase and the per-pupil costs would decrease as compared to traditional public schools.[28]

A 2007 audit of Kansas virtual schools found that the 2005-06 operating costs of virtual schools ranged between $300 and $5,000 less per student than traditional schools in the state.[29] These estimates suggest that operating costs of virtual schools fluctuate from program to program, but are generally lower or equal to the costs of traditional education. The cost of virtual education may be dependent upon a variety of details that can vary by state, district, and school, as well as by student, program type, and so on. Since every program is different, accurately determining the precise cost of a given program may require a thorough analysis of the specific situation in which the program is set.

Equally controversial to the cost of virtual education is the method by which these programs are funded. Proper funding models are crucial to the development and maintenance of virtual schools. In fact, the Southern Regional Education Board (2007) reported that the "lack of sound funding policies appears to be the single greatest obstacle to growth" of state virtual education programs.[30] Many virtual schools, such as the supplemental online programs in Indiana and the Illinois Virtual High School, do not receive enough or any funding through state grants or appropriations and, therefore, have to fund their programs through course fees relegated to students or the local school district. In some of these cases, an issue has arisen concerning the ethicacy and legality of students paying for public education. Concerns have been raised (Anderson et al., 2006, for example) that such a practice may lead to inequalities in accessibility for underprivileged students and families to public online educational opportunities. Many other virtual schools are funded through the same models as their traditional counterparts. Traditional per-pupil funding formulas typically base finances on seat-time, average daily attendance, or other time-based approaches. In most virtual programs, however, time is variable. Course enrollment dates may be fluid, and pacing may be changeable, allowing for extended or accelerated learning time. Since program costs may differ, district geographic borders may be broken, and time can vary, the funding models used to determine traditional public education funding may not be viable for many virtual programs.

The equity of treating virtual education funding in the same manner as traditional public education funding is complicated. One solution to the funding dilemma for virtual charter schools, suggested by Huerta et al. (2006), would be to create a sliding scale whereby funding is determined by how much a virtual school spends on faculty, curriculum, and instruction.[31] Another solution, a performance-based funding model, has been developed for the Florida Virtual School (FLVS), in which FLVS receives money for every student that successfully completes a course. The state of Florida funds six credits per high school student per year. Each time a student successfully completes a one-credit course, FLVS receives one sixth of FLVS's per-pupil funding.[32] FLVS does not provide specialized academic services and therefore does not receive funding for these services. Additionally, FLVS does not receive funding for "brick and mortar" driven supports, such as school construction, transportation, and breakfast and lunch programs.[33] According to Bill Tucker, this type of performance-based funding model creates "an entrepreneurial climate that is unique among public schools. Since there are no barriers to enrollment and funding is not capped at a pre-set amount, FLVS can increase its revenue by enrolling additional students and ensuring that those students successfully complete courses."[34] Although no single funding solution works consistently for all states and programs, the FLVS model could be adapted and modified to fit a number of different virtual programs across the country. In fact, Anderson et al. (2006) feel that moving from time-based to quality-based funding models may have 'significant implications' for both virtual and traditional schools.[35]

Program Quality

The instances in which the effectiveness of virtual and school building classrooms has been directly compared have lead to mixed results, due in large part to a lack of compatibility in students across the two institutions. In Wisconsin, for example, the students of one virtual school, iQ Academy Wisconsin, have scored higher than the average of the state and local school districts on both the Wisconsin Knowledge & Concepts Exam and the ACT test in recent years.[36] Promising results have also been documented at FLVS by the Florida TaxWatch, a private research institute. FLVS students consistently earned higher grades in their online courses than students enrolled in the same courses in the traditional setting, despite the fact that FLVS courses were generally rated equal to or more difficult than traditional courses. FLVS students also consistently outscored their peers statewide on the Florida Comprehensive Assessment Test.[37] On the other hand, a 2007 Kansas audit found that students in virtual schools averaged lower scores on the state assessment exam than their peers in traditional schools.[38] The audit acknowledged, however, that given the very small size of most of the virtual schools, the data was limited and student populations may not be comparable between the two categories.[39] Likewise, a 2006 Colorado audit found that the students enrolled in the full-time virtual schools across the state were lagging academically as compared to their peers in traditional schools, having higher repeater, attrition, and dropout rates, which virtual school advocates attributed to a higher-than-average concentration of at-risk students who sought an alternative education in the virtual schools.[40]

The key points of emphasis for future research should be to figure out which programs are successful, why they are successful, and how that success can be duplicated.

These results suggest that K-12 virtual schools are neither uniformly successful nor consistently ineffective. This matches the results of a study by Cavanaugh et al. (2004), who found that some applications of web-based distance education appeared to be much better than classroom instruction, yet others appeared to be much worse.[41] The researchers concluded that distance education is "as effective as classroom instructions."[42] The key points of emphasis for future research should be to figure out which programs are successful, why they are successful, and how that success can be duplicated.

It is important to keep in mind that the purpose of many virtual programs is to accommodate students which traditional education has difficulty serving. Therefore, the student population of a given supplemental or full-time virtual program may be different than that of the local public school. Some programs may target gifted students who are looking for access to AP or more challenging courses, while others may target those who have struggled in the traditional setting. In these cases, comparative results, such as graduation rates and statewide examination scores, may not be accurate indicators of program success. Such a scenario occurred at IOA in fall 2006. The school piloted a program in which a local school district used IOA as an alternative to expulsion. Students were provided with a computer and Internet access in order that they might be able to continue their coursework at home. The piloted program was unsuccessful, as many students did not take advantage of the opportunity. As a result, the overall course completion rate for IOA, which had been increasing steadily, plummeted to 38% in fall 2006.[43] In situations such as this, where schools are targeting gifted or struggling students, quantitative data such as test scores and completion rates must be analyzed qualitatively in order for them to be a true reflection of the program. Alternate or additional measures of accountability, such as using pre and post test data, may also be needed in order to measure student and program success accurately.

The ability to accurately measure and analyze the innovative practices found in the virtual education realm is absolutely critical in discerning the successes from the failures and in helping determine and promote best practices in online learning. Unfortunately, there is a considerable dearth of scientifically rigorous research being conducted on virtual education programs, and state and local policies governing and monitoring virtual programs have not kept up with the innovation. These are causes for concern among some educators and are issues which must continually be addressed.

Teacher Quality and Certification

Teacher quality and training is another point of contention in the virtual education debate. Advocates convey that the potential for providing students with highly qualified teachers in all subjects is one of the many driving forces of online education, especially in

rural areas. Yet, there is recognition that teaching online requires a unique set of skills in addition to those required in a traditional classroom. Teachers of virtual courses must utilize the technology and adapt their teaching styles through the use of diverse technological tools and communication strategies in order to effectively engage the student on an individual basis. Dennen and Bonk (2008) point out that "...even when tools exist for engaging and motivating students, instructors lack training in how to effectively use them. Instructors not only need to know the types of online and collaborative tools for engaging students, but also how to embed effective pedagogy when the technologies are weak."[44] Rice and Dawley (2007) found that the biggest challenge reported by teachers was adapting to the quickly changing landscape of virtual education.[45] Less than half of the states have policy requirements for professional development in teaching online, other than what is required of teachers in the traditional classroom setting (see Figure 2).[46] Many virtual programs have initiated extensive professional development and training in teaching online, but the quality and extent of training varies among virtual schools.

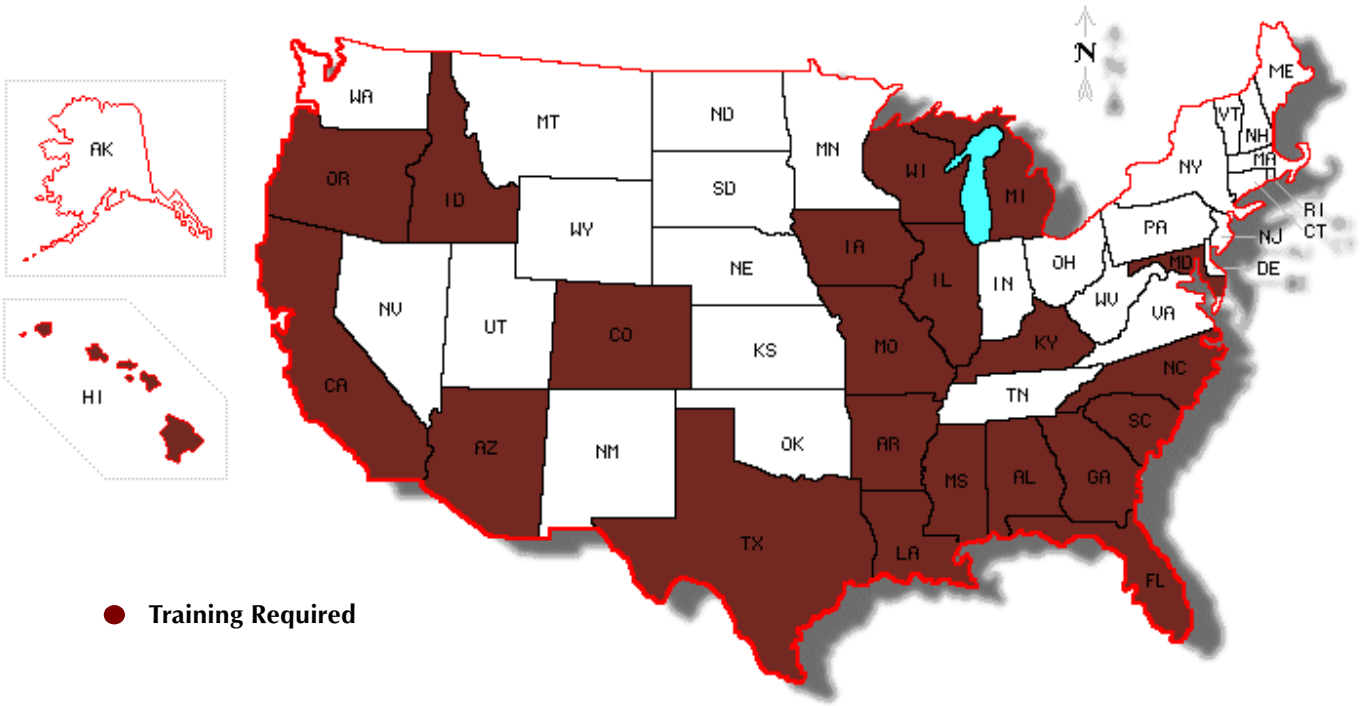
Teacher certification has also become an issue with the rise of virtual schools. Teacher employment, like student enrollment, may not be limited by district and state boundaries for many virtual programs. The possibility exists for a teacher to live in one state, but teach in a program administered in another state. When the state in which the program resides is different than the state in which a teacher resides, the question arises: in which state does the teacher need to be certified? For example, should a teacher who lives in Wisconsin, but teaches in a virtual school in Indiana, be certified in Wisconsin, Indiana, or both states? "Although some states have reciprocal provisions to recognize teacher certifications," Watson and Ryan (2007) point out, "in other states the procedures to recognize certifications across states can be cumbersome."[47]

Some states have begun to adjust policy concerning teacher certification and other requirements. For example, in 2007 North Dakota passed legislation that recognizes that online teachers may be out of state and requires those teachers only to meet or exceed the certification requirements of the state in which the program resides.[48] Numerous publications in recent years have also addressed the issue of teacher training and professional development in virtual education. One such report by Davis and Rose (2007) examined types of professional development essential for creating successful virtual education programs.[49] Their report provides several suggestions for professional development, including recruiting and developing faculty to provide virtual, school-related professional development, and differentiating professional development according to need, role, culture, and context. They also suggest that universities and other preservice professional development programs include online learning in their teacher training programs.

Program Oversight

Presently, many states like Indiana do not have explicit virtual education policies.

Figure 2. States Requiring Teachers to Have Training for Online Teaching



Source: Education Commission of the States. (updated Dec. 17,2007) Virtual High School Database. Retrieved February 20, 2008, from http://www.ecs.org/html/educationissues/HighSchool/highschooldb1_intro.asp?topic=vhs

Since virtual education is a relatively recent concept in education, effective or appropriate governmental regulatory oversight has not always been adequately developed or enforced. For example, a 2006 audit of Colorado's largest virtual schools found that although oversight measures were present, the enforcement of such measures was lacking. The audit reported that at least five schools did not comply with state mandates to employ licensed teachers, and there was a need for more student documentation and oversight of student safety and security.[50] The lack of oversight measures and specific laws governing the unique facets of virtual education may lead to an inability to determine program quality and student achievement, as well as administrative ambiguities and legal issues. Such is the case in Wisconsin, where legal battles nearly shut down virtual schools on the grounds that they violated state laws on teacher licensing, open enrollment, and charter schools.[51] A recent bill signed by governor Jim Doyle, however, allows the schools to stay open and provides for specific regulations on a number of issues, including student enrollment, teacher requirements, and an audit to monitor program quality and student achievement.[52] The potential for litigation in Indiana must be a concern given the void of clear rules and laws and the possibility of litigation halting the progress of virtual education in the state.

In response to concerns about program quality and oversight, states are beginning to revamp virtual education policies. After the Colorado audit report found insufficient oversight of the state's virtual schools, legislation was passed by the state's Senate to create a new division within the state department of education to oversee virtual education.[53] This division is responsible for creating quality standards for online learning as well as ensuring that these standards are being met, not only by the programs but by the school districts that sponsor and oversee them. Likewise, virtual schools in southern states are required to provide annual reports to the state board of education or the legislature on topics including the alignment of course content with state academic standards, the methods used to monitor student and teacher performance, course approvals by state content specialists, teacher evaluations, and survey results.[54]

Subsequent to placing a moratorium on virtual charters in 2007, the Indiana legislature passed House Bill 1246 during the 2008 session, which creates an Interim Study Committee on K-12 Virtual Learning that will convene during the summer of 2008.[55] This committee is to examine a number of virtual education issues in Indiana, including: 1) the availability of virtual learning for K-12 students in Indiana; 2) how virtual learning services are provided by other states; 3) the standards of quality and alignment with Indiana's content standards recommended for virtual learning; 4) accreditation standards and pricing for virtual learning programs; and 5) funding for students enrolled in virtual learning programs outside their home school corporation.[56]

The potential for litigation in Indiana must be a concern given the void of clear rules and laws and the possibility of litigation halting the progress of virtual education in the state.

Across the nation, new virtual education resources and tools are beginning to be developed with the goal of attaining and sustaining optimal oversight and quality. FLVS, for example, has launched Virtual School Administrator (VSA), a performance management system which records and monitors every aspect of operating a virtual school. VSA enables administrators to monitor teacher and student performance and observe the effectiveness of the various teaching techniques and instructional practices in order that they may not only evaluate best practices but also replicate them. Additionally, there is an online enrollment management feature that streamlines enrollment and billing processes, and generates enrollment information for official documents. VSA can generate over 40 customizable data reports to help administrators meet requirements by state and local officials and help teachers track instructional activities and student progress. The system can generate progress reports for parents to monitor their students' classroom performance. Parents can also view the course activity of their students, including messages from teachers and missed assignments. Significantly, all of this information can be gathered and accessed at near real-time.[57]

A different type of virtual resource has recently been undertaken in Indiana, on account of the lack of quality control of virtual education. Five distance or virtual education providers in the state of Indiana—the Indiana Academy for Science, Mathematics, and Humanities; Indiana Online Academy; Indiana University High School; Indiana Virtual Academy; and Ivy Tech Community College—have come together in an association called the Indiana Virtual Learning Consortium (IVLC).[58] The members of the consortium support the position that Indiana needs to have rigorous standards for virtual education based on research and best practices, standards which all virtual education providers in Indiana should follow. The IVLC has suggested a series of high standards for virtual education in the areas of course design, assessment, and professional responsibilities and qualifications, including the use of Indiana-certified teachers for all virtual education courses taught in the state. By following such standards and maintaining open communication and collaboration with school districts, schools, and students, the members of the consortium hope to accomplish the goal of promoting "the growth of high-quality virtual educational opportunities for Indiana students and schools."[59]

CONCLUSIONS AND RECOMMENDATIONS

If virtual education is to be successful, policymakers and educators must carefully examine and provide appropriate oversight of virtual schooling, especially quality assurance and academic achievement, through clearly defined laws and accountability measures. As the Interim Study Committee on K-12 Virtual Learning convenes to analyze virtual schools, the following conclusions and recommendations should be considered.

Conclusion

Virtual education is rapidly growing in many areas of the country, as educators, policymakers, and education reformers look for new and better ways to increase educational outcomes for all students, especially underserved or under-achieving students.

Recommendation

It is important to recognize that although virtual education is gaining in popularity, this learning mechanism may not be appropriate in all circumstances. State policy should ensure that virtual and traditional education options complement each other in the evolving education and workforce landscapes of the 21st century. Legislation based specifically on traditional, brick and mortar schools, should be revised in order to include virtual schools and not hinder additional technological innovations in education. One such revision that might be considered is seat-time minimum requirements for accredited Indiana schools. Indiana currently requires a minimum of 180 instructional days and six hours per day of instruction for grades 7-12 (5 hours for grades 1-6.) Time-based requirements may not be practical measurements for virtual schools, in which enrollment dates and course pacing are fluid. Other ways to ensure student competency which are not based on seat-time approaches might be explored in order to account for new possibilities and methods found in virtual schools and other recent technological innovations in education.

Conclusion

Virtual education has the potential to provide increased educational opportunities for students and staff at the same cost (or even less) as traditional education. However, funding virtual schools is a complex matter. There is no single funding schema or model which is universally applicable to all states. Each school has its own set of variables that can fluctuate by state and district, such as target student population or program type, leading to wide-ranging financial outcomes. Current education funding models, such as those based on seat-times, may not be viable for many virtual programs.

Recommendation

Since every school is unique in size and scope, it is important to consider all financial variables when considering funding. Providing a statewide funding system for virtual schools may prove difficult. The system must be both fair and flexible in order to handle the variation and keep up with innovation, and educators and policymakers need to establish clear funding mechanisms to avoid legal barriers.

The sliding scale of funding suggested by Huerta et al. (2006), in which program funding is based on expenditures of faculty, curriculum, and other educational services, may be one avenue to determine appropriate funding rates. Funding models, such as the one used by Florida for FLVS, where funding is distributed by course or credit to the various providers of the students' education, appear promising and could be modified accordingly. Such a system might work well in Indiana, where the majority of online courses are provided by supplemental online programs. Currently, these programs are funded by course fees often relegated to the students and parents. A system which distributes funds by course or credit would be able to maintain appropriate, proportional levels of funding to the local schools which still provide the majority of courses and school services; however, it would allow all public school students the opportunity to enroll in desired online courses (if appropriate to educational needs) without having to pay, ensuring that all forms of public education are free and equally available to all students.

Conclusion

Accountability for program quality and student success is an important aspect of K-12 public education, and it is essential that there exist accurate data measuring the success of virtual education programs. However, data to evaluate virtual programs as compared to one another and to traditional education are limited, and research has produced mixed results.

Recommendation

Objective scientific studies should continue to study virtual education programs and create accurate accountability measures in order to better monitor and evaluate the schools and programs. Many virtual programs target students who have struggled in the traditional school setting. Course completion rates and student scores on state or national assessment exams may be less than the state average in such programs. These indices, therefore, may not be a sign of program failure. In cases like this, other methods to quantify and qualify student and program success must be used, such as improvement models using pre and post assessment data.

To ensure quality effectiveness of virtual schooling, Greenway and Vanourek (2006) suggest examination of "which types of virtual schools work, under what conditions, with which students, with which teachers, and with what training."[60] To aid in doing this, virtual evaluation management tools that create transparency, such as FLVS' Virtual System Administrator, should be installed and integrated into virtual programs. This will assist policymakers and education leaders to distinguish between strong and weak programs and help identify and replicate best practices.

(Conclusions and Recommendations continued on next page)

(continued from page 12)

Conclusion

The virtual classroom is a very different environment from the traditional classroom; teaching in virtual school settings takes different skills and strategies than teaching in traditional school settings. Although many schools and districts do provide professional development for technology use, many schools offer no additional training, outside of what is required to teach in a traditional setting, that is specific to online learning.

Recommendation

Online teaching and learning should form a portion of all preservice teacher training programs at colleges and universities. Additionally, schools and districts should provide professional development specifically designed for teaching virtual courses, as well as offer continual training and support throughout the years. Furthermore, state policy on teaching certification and other regulations must be explicit regarding virtual education, taking into consideration the new demands which arise with virtual schools.

Conclusion

Providing high-quality, personalized programs of study for students of all backgrounds, needs, and interests is the goal of all schools and, particularly, is the purpose for virtual schools. Unchallenging and poorly designed courses not only waste school time and money but also hinder students' learning and productivity.

Recommendation

Measures should be taken to ensure online programs provide highly developed and well designed courses which meet state academic standards and guidelines. Additionally, virtual programs need to account for the variability of the students who enroll in their courses. This means not only tailoring courses to the needs of diverse students, but also providing proper program structure and support. Effective learning strategies in the traditional setting may not be suitable in the online setting. Programs should prepare students for the virtual classroom and provide them with the tools needed for online learning. Roblyer (2006) suggests that programs provide checklists, self-tests, and no-credit orientation programs to give students a sample of what online learning entails. She also suggests that programs employ "interactive, flexible course designs," which allow students to work together in project-based teams, involving the use of apparatus and learning tools other than the computer.[61]

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Web Resources

Education Commission of the States

Virtual High School Database:
http://www.ecs.org/html/educationissues/HighSchool/highschooldb1_intro.asp?topic=vhs

Indiana Virtual Education

Indiana Virtual Academy:
www.indva.org
Indiana Online Academy:
www.indianaonlineacademy.org
Indiana University High School:
www.scs.indiana.edu
Indiana Virtual Learning Consortium:
http://www.bsu.edu/academy/ivlc/index.htm

Learning Point Associates

A Synthesis of New Research on K-12 Online Learning:
http://www.ncrel.org/tech/synthesis/index.html

National Education Association

Guide to Teaching On-line Courses:
http://www.nea.org/technology/onlineteachguide.html

National Forum on Education Statistics

Forum Guide to Elementary/Secondary Virtual Education:
http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006803

North American Council for Online Learning

A National Primer on K-12 Online Learning:
http://www.nacol.org/docs/national_report.pdf\
Research Committee Issues Brief:
Professional Development for Virtual Schooling
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Southern Regional Education Board

Standards for Quality Online Teaching:
http://www.sreb.org/programs/EdTech/pubs/PDF/StandardsQualityOnlineTeaching.asp
Standards for Quality Online Courses:
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Cost Guidelines for State Virtual Schools:
http://www.sreb.org/programs/EdTech/pubs/PDF/CostGuidelinesSVS.asp

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