The Potential of "Virtual High Schools" for Adult Secondary Education Students

Final Report

May 2000

Submitted by
Research Triangle Institute

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Division of Adult Education and Literacy
Office of Vocational and Adult Education
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Prime Contract No. ED-99-CO-0160
Subcontract No. OVAE 99-2

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Summary

Study Purposes and Methods

Of the 44 million U.S. adults who lack a high school diploma, more than half have completed at least eight years of schooling. These individuals are eligible to participate in Adult Secondary Education (ASE) courses, which lead to an Adult High School (AHS) diploma or preparation for the General Educational Development (GED) exam. The majority, however, do not participate: between July 1, 1995, and June 20, 1996, fewer than one million adults enrolled in ASE classes throughout the nation.

A variety of barriers, including the following, may prevent eligible individuals from receiving ASE services:

- ***Conflicting family and work responsibilities*** that prevent many individuals from participating in traditional classroom-based programs;
- ***Long waiting lists*** for ASE services in some parts of the country; and
- ***Limited availability of instructional services***, especially in rural areas.

To address these obstacles, many experts are exploring the potential of distance education for delivery of ASE services.

One newly developed model for delivering instructional services over the Internet, the "virtual high school," may have the potential to significantly expand access to ASE instruction. Sponsored by a variety of organizations (including state education agencies, local school districts, universities, and private schools), virtual high schools provide students with online access to a secondary school curriculum. Although most were initially designed for "traditional" secondary students, these models may hold promise for adult learners as well.

Under contract with the U.S. Department of Education, Research Triangle Institute (RTI) conducted a quick-turnaround review of existing virtual high schools in order to explore their utility as a model for delivering ASE services to adult learners. Activities we completed included:

- Development of profiles of virtual high schools through review of available documentation and executive interviews with school officials;

- Preparation of a synthesis of virtual high school characteristics;
- Development of specifications for a "model" virtual high school that would meet the unique needs of adult learners seeking ASE services.

RTI researchers selected schools for this study based on an initial Internet search and a review of literature on online schooling. The schools selected represent a wide variety of virtual school types, including both public and private programs. Some schools in the sample target an elite audience able to afford several thousand dollars per year in tuition payments, while other programs are available at no charge or for a nominal fee. A number of schools selected offer a complete high school curriculum for studies toward a diploma; others offer only supplementary credits for transfer to a student's local high school. Numerous other differences existed among schools, including: the number of staff involved with the program; technical support available to students; assessment methods used; the type of resources supporting the program; instructional formats; and support services available to students. The 17 schools studied represent a broad spectrum of online programs and make up a significant percentage of the online high schools currently in operation in the U.S.

This study examines the current status of virtual high schools in the U.S. based on information gathered from two main sources. First, researchers conducted initial searches of online schools' web sites to gather as much relevant background information on the programs as possible. Second, researchers completed executive interviews with administrators from the schools over the telephone — in most cases, the respondent is the school's principal or director, although those individuals sometimes referred the interviewer to another qualified respondent.

The second section of the report contains our suggested design for a "model school," which incorporates some of the best features of all the programs examined during the study. Few schools profiled in this report serve or target the adult learner population. However, when designing the model school, researchers sought to build on the promising practices they observed in all the online programs studied with a focus on meeting the specific needs of adult learners.

The third section of the report comprises profiles of 17 virtual high schools in the U.S., including a variety of public and private programs, as well as the Department of Defense's online distance learning school for high school-age youth. The profiles contain basic background information on the schools, such as enrollment figures, tuition rates, and hardware and software requirements, as well as broader coverage of topics like the school's target population, curriculum and instruction, and methods of assessing student work.

The remainder of this introductory section provides an overview of the school profiles that constitute the bulk of this report. The overview is organized in the same manner as the profiles themselves, in order to facilitate comparisons with individual profiles. Exhibit 1 lists the schools include in the study.

Exhibit 1. Schools Profiled in the Study

SCHOOL NAME	AFFILIATION	LOCATION
BYU Independent Study	Brigham Young University	Provo, UT
Choice 2000 On-Line Charter School	Perris Union High School District	Perris, CA
Christa McAuliffe Academy	None	Yakima, WA
CLASS Project	University of Nebraska, Lincoln Department of Distance Education, Division of Continuing Studies, Independent Study High School	Lincoln, NE
Compuhigh	Clonlara School (Ann Arbor, MI)	Fairmont, WV
CyberSchool	Oregon Public Education Network and Eugene Public School District 4J	Eugene, OR
DoDEA Electronic School	Department of Defense Education Activity, Distance Learning Center	Mainz Kastel, Germany
Electronic High School	Utah State Office of Education	Salt Lake City, UT
E-School	Hawaii Department of Education	Honolulu, HI
The Florida High School	Alachua and Orange County Public Schools	Orlando, FL
J.H. Groves Diploma-At-A-Distance	James H. Groves Center	Dover, DE
Keystone eSchool	Keystone National High School	Bloomsburg, PA
Milwaukee Area Technical College, Adult High School	Milwaukee Area Technical College	Milwaukee, WI
Mindquest	South Hennepin Adult Programs in Education	Bloomington, MN
Monte Vista's On-Line Academy	Byron Syring DELTA Center and Monte Vista School District	Monte Vista, CO
University of Missouri, Columbia High School	University of Missouri, Columbia, Center for Distance and Independent Study	Columbia, MO
Virtual High School	Concord Consortium and Hudson Public Schools	Concord, MA

Overview

Parent organization: A few online programs are affiliated with brick and mortar private schools; several are public schools run through state departments of education; several are independent private schools; and some are associated with community colleges or universities.

Entity offering high school diploma: Roughly half of our sample of virtual high schools offer diplomas, while the rest offer supplemental credits for transfer to students' local high schools.

Accrediting agency/agencies: Regional Association of Schools and Colleges branches (e.g., Northwest Association of Schools and Colleges); state departments of education; National Coalition of Alternative Community Schools; Commission on International and Transregional Accreditation; Accreditation Commission for International Internet Education; Department of Defense; Accrediting Commission of the Distance Education and Training Council

Current enrollment: Ranges from fewer than 100 students to several thousand; most programs serve 1,000 students or fewer.

Tuition: Many schools are tuition free or charge only a nominal fee, but some private schools cost up to several thousand dollars per year for students taking a full course load. Most schools charge by the course, rather than by the semester or year.

Target Population

The online schools examined in this study serve students with a broad range of backgrounds. Those who are enrolled in classes at virtual high schools commonly fall into the following categories:

- ***Home-schooled students*** seeking to increase their curriculum options. Online courses often allow parents to offer their children courses that they could not teach on their own, such as higher level mathematics and science.
- ***Bright youth*** who want more intellectual stimulation from school. These students often respond to the unique challenges and formats available in the virtual setting.
- ***Students either making up credits for classes they failed or attempting to accelerate completion*** of high school. Students may require one class in order to graduate on time, or may want a convenient way to earn credits toward early graduation.
- ***Students enrolled in public or private schools*** and interested in taking courses that are not available at their local schools. This situation is especially common in rural

schools, which often have a difficult time hiring teachers for subjects like upper division mathematics, science, and Advanced Placement classes.

- ***Students who are medically unable*** to attend regular schools.
- ***Students whose schedules do not allow attendance*** at traditional, classroom-based schools. This group includes students who support themselves or their families by working, as well as students who travel extensively or are otherwise geographically separated from school.
- ***Students who want or need an alternative*** to traditional education, including high school dropouts and youth with behavioral problems. Some students in this category — and their parents — are simply unhappy with the quality of schools in their communities.

Most virtual schools have very few admissions restrictions, although a few publicly funded programs are only open to residents of the state in which they are located. The vast majority of schools seek students who possess high school-level reading and writing abilities, since online schools typically base their instruction largely on written communication. While most online schools do not have minimum or maximum age requirements for prospective enrollees, applicants are typically high school-age youth. A few programs focus on serving the needs of adults, and several other schools occasionally have adults enroll, but most online programs have not reached out to adult learners.

Few schools require incoming students to possess specific computer skills. They do advise that a student's transition to online learning will be easier if he or she is familiar with basic computer operations. A couple of schools have specific computer prerequisites in which students must demonstrate competence, and some schools require new students to sign up for a computer training class.

Curriculum and Instruction

The online schools in this study are split almost evenly between schools that grant diplomas and others that offer only supplemental credits for transfer to a student's local school. In general, the schools that grant diplomas offer a broader assortment of courses than those that offer only supplemental credits. Some schools offer just a handful of internally developed courses, while others make use of resources like NovaNET and offer hundreds of choices. A typical school offers between one and three dozen courses, most of which are designed internally by school staff.

Virtual courses make use of both online and offline formats, as instructors provide students with a wide variety of course materials. Course material delivery methods vary greatly among schools and among courses within each school, and include: the Internet, e-mail, chat

rooms, online bulletin boards, audio and video streaming technology, CD-ROM disks, and text books. Most instruction is available asynchronously, although some class activities may take place in a synchronous (i.e., real-time) setting where learners must meet at a specified time.

Instructors typically provide their students with academic support in one or more of the following manners: e-mail exchanges, online chats, phone conversations, and online bulletin boards. Some teachers make use of standard mail or faxes, but these methods are less common. In situations where they live in close proximity to one another, which is not common in the virtual school environment, teachers and their pupils may agree to meet in person on occasion. A number of programs encourage or require their teachers to respond to student requests for help promptly, sometimes guaranteeing students a reply within 24 hours.

Teachers frequently provide individualized feedback on student assignments, although a few programs rely heavily on automated grading. When teachers hand-grade assignments, they may embed written comments into electronic copies of students' work. Teachers also make use of the tools mentioned previously to provide students with feedback. In addition to teachers' commenting on individual assignments, many schools provide periodic progress reports to students and their families.

While online programs tend to provide a significant level of academic support and feedback for students, they do not generally offer services for helping students manage their personal problems. Only a small number of programs employ guidance counselors or others trained in the discipline. Schools that offer a full, diploma-granting curriculum are more likely to offer guidance counseling services than do programs that offer supplemental credits for transfer to local high schools. Many schools without specialized guidance counseling staff report that teachers are always available to students and may help them deal with personal problems on an informal basis. Several programs have "counseling" web pages, although most simply contain resources on job searches and college applications. One program goes much further, making personal guidance counseling and referral services available online.

Intake and Orientation

Administrators overwhelmingly agreed that word-of-mouth referral is the most common source of enrollees in their respective programs. Other ways students find out about online programs include Internet searches, referral from affiliated schools' and local schools' guidance counselors, and (less frequently) direct advertising.

Some programs have an open enrollment policy, which means students may enroll in courses throughout the year, while others adhere to a regular school calendar and only enroll

students during specified periods. As a general rule, admissions requirements at the online schools in this study range from lenient to nonexistent. Many schools attempt to informally screen out unqualified applicants through means such as self-administered check lists for identifying appropriate students, but the final enrollment decision is typically left up to individual students.

Nearly all schools offer some form of orientation for incoming students. The type of orientation schools provide ranges from referring students to electronic manuals on school policies and procedures to in-person training on a variety of relevant topics. A couple of schools even pair up new students with students already enrolled in the program for peer support. Some schools mandate that students attend on-site or online orientation sessions, while others provide only minimal orientation unless students specifically request extra help.

Assessment

The online programs we examined tend to assess student work based on essay assignments, presentations, and research papers and projects, rather than on multiple choice tests and other such "objective" exams. One reason is that teachers have an easier time guarding against cheating on the more involved assignments; for example, teachers can generally tell when students are plagiarizing writing assignments. Schools that do rely on "objective" exams often require that test taking be monitored by an appropriate proctor, such as a local teacher or librarian. The assessments that teachers use vary widely among schools and among individual classes within each school.

The vast majority of programs assigned students letter grades, as in most high schools across the U.S. Some online schools focus instead on portfolio-based assessments, and grant pass/fail grades. Several schools allow or require students to redo work that many schools would consider acceptable; students revise assignments until they are more than merely adequate. A small number of programs grant course credit for life experiences, such as time spent in the work force or military service.

Staffing and Staff Development

Some schools in the group studied have staffs of well over 20 people who work in an array of specialized areas, such as teaching, accounting, counseling, designing curricula, providing clerical support, and computer programming. Other schools are staffed only with a skeleton crew of administrators and teachers, many of whom work part time. In these programs, staff members are usually called upon to perform tasks across various disciplines — a jack-of-

all-trades approach. Many online schools take advantage of their organizational location within larger distance learning programs and coordinate the sharing of staff resources.

Almost all of the programs require that their instructors be certified teachers. Some schools require certification in the school's home state, while others will accept certification from the state where the teacher is located. A few schools also hold mandatory training programs focusing on online instruction, which newly hired teachers must attend before they are allowed to enroll students in their classes.

Schools generally offer or require further staff development programs for all of their teachers, although the frequency and content of these training sessions vary widely. Some schools hold monthly meetings and staff development sessions, but many others schedule training more sporadically. Some staff development programs are formal, and may be conducted by outside experts, while others may consist of an informal event such as a staff dinner. Topics commonly covered in schools' staff development programs include curriculum design and development, effective use of technology, online teaching methods, and school policies and procedures. Schools provide staff development programs through a number of methods, including over the Internet, at the school, in a central location convenient to staff members, and via conference calls.

Resources (Financial and Other)

Programs that participated in this study receive support from a variety of sources, including: federal grant funding; money and facilities provided by state departments of education; local school district expenditures; start-up funding from affiliated brick and mortar private schools; tuition payments; in-kind contributions from participating schools; and partnerships with private businesses that donate equipment and money.

Hardware/Software Requirements

Hardware and software requirements varied greatly among schools examined in this study. All programs require their students to have access to a computer with an Internet browser and e-mail account. Most schools require computers with at least 16 MB of RAM, a 486 MHz processor, and some available hard drive space. Other common requirements include a Pentium processor, CD-ROM drive, word processing software, printer, and Windows 95. Some programs required that computers have a sound card and speakers, and/or video viewing capability.

All online learning systems work best — i.e., quicker and with fewer glitches — with newer, more advanced computers and up-to-date software. Likewise, high-speed Internet access, such as that available through connecting to a local area network, is more efficient. Most schools' online programs are compatible with both Macintoshes and PCs. Several schools offer free or low-cost loaner computers to students who do not have access to a computer.

The level of technical support available to students varies from unavailable to readily accessible over the phone and via e-mail. Some schools employ computer experts, while others depend on their teachers to provide technical support. Many programs that offer primarily supplemental credits arranged through students' local high schools depend on these schools' staff to provide technical support.

Outcomes

Few schools were able to provide detailed outcome data. Much of the outcome evidence that schools did present was anecdotal or limited in detail. Many programs either did not collect any form of outcome data or had not had an opportunity to analyze the raw data that they had collected. Several respondents cited barriers to effective data collection, such as the transient nature of many online learners. Students might enroll in a course and then disappear for weeks or months at a time before completing their first assignment. A few programs, however, had collected and evaluated outcome data in such areas as course completion rate. One or two programs had conducted more extensive assessments that contained both statistical analysis and subjective evaluations of program quality.

Those programs that were able to provide course completion data varied widely in the percentage of students finishing classes. Course completion rates ranged from just over 50 percent to nearly 100 percent, but were more typically near the middle of this range (around 75 percent). Numerous administrators stated that the primary variable affecting course completion rate was how well informed program enrollees were about what to expect from their virtual classes. Many students who fail to complete online courses are ill-informed about how online learning works. Students in this situation often expect that virtual classes will be significantly easier than classroom-based ones, or do not understand the courses' hardware, software, and computer skills requirements.

Keys to Student Success

Administrators stressed a number of characteristics that help students adapt to learning in the online environment, including:

- Self-motivation;
- Discipline;
- The ability to learn independently;
- Work ethic;
- Time management; and
- Written communication skills.

While administrators mentioned them less frequently than the above characteristics, some administrators believe strongly that the following traits are also keys to students' success:

- Willingness to seek help;
- Patience with technology; and
- The ability to think visually.

A number of administrators also pointed out how crucial parental support is for students to thrive. They emphasized that the physical distance that characterizes online learning makes it difficult for teachers to push their students to succeed, so parents must help fill this role.

Model Virtual High School for Adult Learners

The schools examined in this study serve a wide variety of students, most of whom are youth. Adults seeking a high school education have many of the same basic educational goals and needs as youth — quality courses, knowledgeable instructors, etc. However, the two populations cannot be adequately served by precisely the same programs. In other words, the "model" adult virtual high school is not the same as the typical virtual high school that serves regular high school students. Understanding why adults enroll in ASE classes helps to explain the differences between the model adult school and typical online schools for youth. Adults frequently enter ASE programs for one or more of the following reasons:

- To help their children succeed in school;
- To earn a diploma or GED for personal fulfillment;
- To earn a diploma or GED to improve their job prospects;
- To overcome embarrassment of lacking a high school education.[1]

Since adult learners have some different needs in comparison to those of high school age, this section of the report reviews areas that might be of particular importance in operating an online ASE school. A virtual high school designed to meet the needs of ASE students would have the following characteristics.

Target Population

- Adults with sufficient high school credits to pursue a GED or adult high school diploma within a reasonable time frame.

Curriculum and Instruction

- Grant high school diplomas independently, rather than offering only supplemental, transferrable credits.
- Offer a variety of courses in addition to the standard high school offerings (English, mathematics, etc.), such as classes on improving job skills, courses designed for pre-9th grade students, and English as a Second Language for students who are at or above ASE level in their native language.

[1]For additional information describing why individuals enroll in ASE see: Elliott, Barbara, et al. (1997). *Setting a National Agenda for Research and Development in Adult Education and Literacy. Focus Group Report*. Research Triangle Park, NC: Research Triangle Institute.

- Develop some courses in-house, instead of relying solely on "canned" curricula, in order to tailor courses to fit the needs of the adult population enrolled at the school.
- Emphasize contextual learning so that instruction is relevant to students' daily lives. For example, students could learn mathematics through a class on personal finance, or grammar through a class on job skills.
- Make deadlines on individual assignments flexible to adjust to students' family and work responsibilities.
- Utilize software like Contigo and LearningSpace, which facilitate synchronous and asynchronous group instruction that can incorporate an array of multimedia materials.
- Make use of audio and video streaming technologies, which allow both real-time and recorded broadcasts of course materials, and reduce the often heavy reading burden commonly associated with online schooling.
- Encourage or require teachers to provide in-depth feedback on student work. E-mail is an excellent tool for providing feedback, but synchronous communication (e.g., via phone or chat room) may help create a dialogue between instructors and students and build rapport.
- Ensure that teachers are available to answer questions about assignments, or any general academic questions that arise.
- Make counseling available for students to help them manage a variety of issues. Counseling should be available to students to provide advice on academics (e.g., effective study techniques) and career planning, as well as personal issues.
- Foster formal or informal peer support groups to help adults adjust to the online environment and to returning to school.

Intake and Orientation

- Expect word-of-mouth referrals to draw many students to the program.
- Inform staff at job training centers, classroom-based adult education programs, and other such organizations that serve potential ASE online students about the school so they can refer appropriate students. Also, work to build and maintain close, positive ties with these programs.
- Carefully develop the intake and orientation program, paying special attention to evaluating and instructing students on computer skills.
- Prepare students for what to expect in the program, ranging from the ways students and teachers are expected to interact to the school's grading policies.
- Provide some on-site intake and orientation activities, such as initial student skills and needs assessments, and instruction on using computers.
- Put most intake and orientation materials online in an asynchronous format.

Assessment

- Offer alternatives to the types of testing commonly used in most traditional high schools. For example, assign more essays and other projects that require writing skills, or make use of portfolios that illustrate students' progress.

- Utilize automated grading programs that provide immediate feedback as soon as a student submits an assignment, but also provide students with individualized feedback from instructors.
- Send students periodic progress reports that help them understand their strengths and weaknesses, and how much progress they have made towards meeting their goals (e.g., credits completed toward earning a diploma).

Staffing and Staff Development

- Employ at least one counselor who specializes in the needs of adult learners.
- Train and retrain staff in areas such as web site design, database management, and other technologies related to online teaching.
- Provide staff development on effective strategies for delivering instruction and support to adult learners.
- Provide staff development on cultural diversity and sensitivity.
- Design staff schedules so that they will have an hour or two each week set aside specifically to assist students with independent learning.

Resources (Financial and Other)

- Join an online consortium, such as the Virtual High School based in Concord, Massachusetts. Consortia allow schools to offer students more resources (e.g., increased course offerings) while reducing the cost burden by distributing costs.

Hardware/Software Requirements

- Offer technological formats that work with older, slower machines.
- Emulate the loaner programs run by a few of the schools profiled in this report, and make computers available to all students in need.
- Offer a basic computer skills class to help familiarize inexperienced computer users with the tools necessary to complete online course work.
- Ensure that technical support is readily available to students and staff, in order to answer basic questions regarding computer operation and to help solve more complicated hardware and software glitches.

Outcomes

- Establish a set of expected outcomes and create a system for monitoring the results.
- Adapt standard assessments of outcome data used in adult education programs to the online setting. For instance, an accurate measure of course completion rate must take into consideration that online courses often allow individuals to complete course work at their own pace.
- Take into account the "side effects" of online learning. For example, students naturally become more adept at using computers as a byproduct of their online class work.

Keys to Student Success

- Make prospective students aware of the keys to success in the online setting, in order to avoid wasting time and resources attempting to serve students who do not have the skills and aptitudes necessary to benefit from online schooling.
- Work to build upon students' strengths in order to boost their self-esteem and keep them committed to learning.
- Display confidence in students in order to instill some of this confidence into students.
- Make an effort to involve adults' families in the online learning process, so that students' family members can help them succeed in school.

Profiles of Virtual High Schools

BYU Independent Study

Brigham Young University
Provo, UT

Parent organization: Brigham Young University

Web address: http://coned.byu.edu/is/index2.htm

Entity offering high school diploma: BYU Independent Study grants diplomas in special cases, but they are ordinarily granted by a cooperating school district.

Accrediting agency/agencies: Northwest Association of Schools and Colleges.

Current enrollment: 2,620 courses (no student enrollment figures available).

Tuition: A $35 admission fee is required, and high school courses cost $88 per 0.5 credit unit ($54 per .25 unit).

Target Population

BYU Independent Study offers online courses to regular high school students, and an adult diploma program for students 19 years of age or older. High school students enrolled in BYU Independent Study courses generally fall into one of the following categories:

- ***Students wanting to make up credits*** in order to graduate with their class, or to accelerate graduation.
- ***Students seeking to enrich*** the course offerings available at their local school, or to take special-interest courses that do not fit into their class schedules.
- ***Home-schooled students*** .

Most students enroll in just a few supplementary courses, but BYU Independent Study also offers a transcript program for high school age students who want a full curriculum. This program is designed to help students prepare for college or the job market. The transcript is not a diploma; rather, it shows which courses the student has taken, grades earned, and a cumulative GPA.

BYU Independent Study Grants regular diplomas solely to adult learners. Applicants must be at least 19 years of age to be eligible for the adult diploma program. BYU Independent Study coordinates its adult diploma program with Provo High School, and follows its requirements for graduation. Students in the adult diploma program enroll in the same courses as

younger participants. In general, the program offered through BYU Independent Study is the same for adult and high school age participants. The key difference is whether students can earn a transcript or a diploma.

BYU Independent Study requires no specific computer skills for entry into the program. Nevertheless, students enrolled in online courses should possess basic Internet browsing skills, the ability to download files, and a general familiarity with computers.

Curriculum and Instruction

BYU Independent Study offers over 170 high school courses, about 35 of which are offered online. Subjects taught include business, education and career planning, English, government, health, history, mathematics, science, and Spanish. Students have up to one year to complete each course, and can obtain a three-month extension in some circumstances. Administrators suggest that students complete courses in no less than three weeks.

Local high school teachers develop courses under contract with the BYU Independent Study program. Teachers are generally left to themselves during the course development process, although staffers from BYU Independent Study check to make sure that the courses meet state curriculum requirements.

Online courses are all asynchronous, and the vast majority of instructional materials are available over the Internet. A CD-ROM supplements the online materials with resources such as video clips and other multimedia components. When students turn in work, instructors either grade it by hand or it is automatically computer-graded. BYU Independent Study uses WebGrade, which allows students to turn in Speedback assignments via the Internet. These assignments are graded instantly, and pre-programmed instructor feedback, which varies depending on the student's answers, is provided. BYU Independent Study tries hard to help students succeed, especially by keeping them up to date on their progress. For example, the program uses GradeCheck, which allows students to view an online report card showing their progress in each course. The GradeCheck system works for both Internet and traditional courses.

Students can post messages or chat with their peers using a web-based conferencing system; they may send comments or questions to their instructors using an online feedback form. Staff members may also be able to address students' concerns, so they try to screen questions to ensure that teachers are not overloaded with requests for help. The front office staff can also help deal with students' personal problems.

Intake and Orientation

Students usually find out about the program through the guidance counselors at their local school. To maintain contact with counselors across the state, BYU Independent Study provides counselors with course catalogs, updates on enrolled students, and other materials that help them build awareness of the program. Students also find out about the program through word-of-mouth and visits to the web site.

Students enrolling in the program should be at least 12 years old. There are no other eligibility requirements, although students should make sure that their local high school accepts BYU Independent Study high school credits. Students may enroll through a toll-free number, standard mail, or online (the preferred method).

Assessment

Since BYU Independent Study is typically a supplemental program, the school does not administer any state-specified end-of-year tests. Students request midterm and final exams using the online Exam Request form. Staffers then mail the appropriate exam to the student' s proctor — anyone who works in education or a related field full time — and he or she administers the test in person. Due to security concerns, such as the ease with which a student could receive outside help, exams may not be taken over the Internet in any circumstances.

Many courses feature interactive assignments that allow students to practice and receive feedback before completing graded work. For those enrolled through their local high school, BYU Independent Study sends course grades to the student's high school counselor.

Staffing and Staff Development

Four full-time staffers work on the online program, along with 20 programmers and a support staff that works on both the online and traditional correspondence program. A Utah state teaching certificate is required for all instructors teaching BYU Independent Study classes. BYU Independent Study does not offer formal staff development, although it does provide some in-house training on a variety technical and nontechnical topics.

Resources (Financial and Other)

Other than the facilities provided by Brigham Young University, the program supports itself entirely through tuition payments.

Hardware/Software Requirements

Students enrolled in online courses must have access to a 486 MHZ PC or equivalent Macintosh with 16 MB of RAM. The computer must feature a CD-ROM drive, modem, video card capable of VGA, sound card and speakers, and a printer. Other requirements include version 4.0 of Netscape Navigator or Microsoft Internet Explorer, and the Quicktime 3.0 browser plug-in. BYU Independent Study recommends a Pentium class computer with 32 MB of RAM, as well as more advanced, recent hardware and software.

The customer service support staff can help address technical questions from Monday through Friday between 8:00 a.m. and 5:00 p.m. local time. Technical support is available via phone or e-mail.

Outcomes

No outcome data are available.

Keys to Student Success

BYU Independent Study has identified several student characteristics that help ensure success. Typically, students who succeed in the program take their work seriously, study regularly, enjoy independent work, and are persistent. Administrators believe that independent learning is best suited for a "self-starting kind of person. who doesn't need much hand-holding."

Contact Information

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Choice 2000 On-Line Charter School

Perris Union High School District
Perris, CA

Parent organization: Perris Union High School District

Web address: http://www.choice2000.org

Entity offering high school diploma: Choice 2000 On-Line Charter School.

Accrediting agency/agencies: Western Association of Schools and Colleges.

Current enrollment: 160 students enrolled this year; expecting 250 next year.

Tuition: Free for students in adjacent counties (Riverside, San Bernardino, San Diego, Imperial and Orange); $175 per class per semester for students from elsewhere in CA and from out of state.

Target Population

Choice 2000 strives to serve a wide range of students, including ordinary high schoolers, home-schoolers, and adults trying to earn a high school diploma. Students' reasons for attending range from an interest in technology, a desire to work at a quicker pace, or the need for a more flexible schedule, to Choice 2000's program being a "last resort." Students attending Choice 2000 are not allowed to simultaneously enroll in any other public schools. Typical Choice 2000 students include:

- ***Students who have experienced difficulties*** (generally behavioral) in the standard school setting. Roughly one-third of Choice 2000 students fall in this category.
- ***Students who are unhappy with the public school system***, or whose parents are unhappy with the system.
- ***Children who are medically unable*** to attend. About five students fit this category.
- ***Students who are extremely bright and need a new, larger challenge***. Approximately seven of Choice 2000's enrollees meet this description.

Computer skills are not required for enrollment. However, basic abilities in keyboarding, word processing, and file management are recommended, and make the transition to the distance learning environment easier.

Curriculum and Instruction

Choice 2000 offers a complete standard curriculum for the 7th through 12th grades. In the 1997-98 school year, Choice 2000 offered more than 40 classes. Courses are currently available in child development, English, history, living skills, mathematics, science, typing, and yearbook. Besides the standard high school curriculum, students learn advanced computer and word processing skills.

Unlike some distance learning programs, students at Choice 2000 must log in every day Monday through Friday. This rule is designed to meet California's attendance laws, since the school is funded based on average daily attendance. The school's server is available 24 hours per day and seven days a week, so students may complete assignments outside of the regular school hours.

Courses in the core subjects, such as English and mathematics, are developed by teachers working under Choice 2000 guidelines. Most electives are "canned" classes purchased from NovaNET, an online educational network that offers a wide variety of courses aimed at secondary school students and adults. Students may enroll in as many as eight classes per semester if they are academically capable.

Textbooks and most software are free, but some classes require additional materials that students must purchase. Choice 2000 just recently started using InterWise software, which allows advanced synchronous teaching, including headphone and microphone usage for real-time audio over the Internet. This software results in classes that emulate face-to-face ones in almost every way "except for the smell," as an administrator joked. It allows teachers to present information, hold discussions, and answer student questions in real-time, making use of a teleconference format similar to an Internet chat room.

The InterWise platform facilitates the use of an online bulletin board service and an Internet server so that students may "attend" class electronically. The system lets instructors distribute assignments and post resources, and provides a place for online academic and social interaction. InterWise is compatible with PowerPoint, which Choice 2000 teachers use frequently to present lecture material. Outside of the synchronous class lectures, teachers and students generally communicate through e-mail.

Most students need to visit the school office at least three times per year. Students must attend orientation and pick up course books, complete state-mandated testing in the spring, and return books at the end of the year. Other students may need to come in more often to attend

workshops and classes, or for additional help. Students living too far away to permit travel to Perris can make alternative arrangements.

For students with academic concerns, the school provides an online counseling area where students may have their questions answered by Choice 2000's director. He also occasionally deals with students' personal problems through e-mail and phone conversations. He cautions that, while online learning "answers a huge need of pure education," it does not take care of students' socialization needs.

Intake and Orientation

Students find out about Choice 2000 primarily through word-of-mouth referrals, but the school also attracts students through visitors to its web site and advertisements in local newspapers. Because of California law, Choice 2000 is free only to in-state students from adjacent counties. Students from out-of-state are also eligible for admission — currently about half a dozen of these students are enrolled.

Plans exist to switch to a disk-based orientation process in the near future. However, at present, the school's office manager has the responsibility of familiarizing new students with the Choice 2000 program. Incoming students receive background information in computer basics and other technical issues, as well as more general school matters. Orientation may be conducted over the phone for out-of-state students.

Assessment

Students must complete state-mandated testing in the spring. Seniors must take an exam in the spring of their senior year as a requirement for graduation. In general, assessment works as it does in most regular brick and mortar schools; students must complete exams and other assignments, and receive letter grades.

Staffing and Staff Development

Choice 2000 employs 11 part-time teachers, two office workers, one teacher's aide, a web master, and a technical expert. The technical expert, who helps answer students' questions and fix their computer problems, splits time between Choice 2000 and other schools in the Perris Union district. All teachers have California State Teaching Credentials.

Formal staff development programs have only been offered infrequently this school year, since the school was forced to restart from scratch this past fall with all new hires. Upcoming staff development sessions focus on PowerPoint, effective utilization of technology, and other

issues. Since charter schools are not allowed to operate in the summer, according to California state law, substantial staff development will occur then.

Resources (Financial and Other)

The Perris Union school district provides office space for Choice 2000 in their central district office. The district also provided the initial start-up funding for the school. All other funding comes from the state and is based on average daily attendance figures. Choice 2000 purchases business (e.g., payroll) and legal services from the district to reduce the cost burden. An administrator at the school noted that the money saved on facilities is one of the major advantages of online learning.

Hardware/Software Requirements

Students must have access to a Pentium 90 or equivalent computer with 32 MB of RAM. The computer must have a 2 GB hard drive, CD-ROM, modem with a connection to an Internet Service Provider, and a printer. Students living in California can lease computers for $10 per month.

Outcomes

Thus far, Choice 2000 has graduated 35 students. No further outcome data are available.

Keys to Student Success

Choice 2000 administrators cite parental involvement with kids as a key to student success. Students often must be encouraged to work hard and log on every day as required. The distance learning environment is best suited for students with self-motivation and discipline. Students lacking these qualities can succeed at Choice 2000; however, they may need close supervision by a parent or guardian.

Contact Information

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Christa McAuliffe Academy

Yakima, WA

Parent organization: None

Web address: http://www.cmacademy.org

Entity offering high school diploma: Christa McAuliffe Academy

Accrediting agency/agencies: Washington State Board of Education; Commission on International and Trans-regional Accreditation.

Current enrollment: About 380 students overall, with roughly 85 percent of students enrolled at the high school level.

Tuition: Monthly tuition is $199, with a $20/month discount for additional family members.

Target Population

The Christa McAuliffe Academy (CMA) web page explains that the school seeks to "make a positive difference in the lives, hopes, and dreams of people of all ages, backgrounds, abilities, and circumstances, by combining basic education, traditional family values, and the best innovative technology into a world-class K-12 school." Enrollees in the program typically transfer from public schools across the U.S., but there are few strict requirements on who may attend, aside from the need to speak and read English. Most students choose to enroll at CMA full time toward a diploma, although a few sign up simply to earn supplemental credits.

The school appeals primarily to "bright, bored kids" whose intellects are not adequately stimulated by the traditional school environment. Unmotivated youth who are not interested in learning tend not to apply for the program, and school staff try to screen them out during the application process if they do apply. Administrators warn that those who think they can enroll in an online program to reduce their workload will be disappointed by the rigorous challenge CMA presents students.

Students need not possess advanced computer skills to enroll in the school. Nonetheless, the transition to online learning will be easier for those students with basic word processing, Internet browsing, e-mail, and Windows system operation abilities.

Curriculum and Instruction

CMA offers a complete online curriculum for 3rd through 12th graders; kindergartners, 1st graders, and 2nd graders receive instruction through a CD-ROM-based curriculum. Students have access to hundreds of classes via the NovaNET and PLATO online programs, and a few that were designed by CMA educators. NovaNET is an education network that provides online courses for junior high students, high schoolers, and adults. PLATO features a similar array of computer-based courses for middle and high school students, and also offers job training courses and other learning experiences that target adults.

CMA students usually enroll in and complete one course per month, although students may choose to take longer to complete a course or enroll in more than one course at a time. Most CMA students are able to complete course work at a pace that allows them to graduate early. Mentors — the phrase the school uses to describe its teachers — provide students with guidance on the proper pace to complete each course and offer additional instruction in NovaNET and PLATO class subjects. Unlike most schools, where students are taught by a different instructor in each subject, CMA students have only one mentor; no matter what subject the student enrolls in, he or she stays with this mentor. An administrator compared the mentoring process at CMA to a "coaching situation," in that mentors try to work with students in whatever specific areas they need extra guidance and academic help .

One of the mentor's most important roles is leading students in six to 12-person virtual discussion groups, which CMA students must participate in weekly to earn class credit. The mentor picks a topic, which students prepare for in advance and then discuss for an hour in a real-time online chat led by the mentor. Mentors sometimes require students to choose their own topic and lead the week's discussion section.

CMA relies heavily on the Contigo software system, which incorporates advanced e-conferencing capabilities. For example, in the virtual discussion section, Contigo allows teachers to click on web pages that are then immediately displayed on all students' screens. Contigo also allows teachers to "whisper" to individual students (i.e., only the specified student receives the teacher's message), and to electronically remove students from the session if they misbehave. The interactive learning facilitated by Contigo helps to "provide the socialization" that is commonly lacking in online programs, according to CMA administrators. They have observed that online interaction results in limiting the development of cliques that typically form in traditional schools. Since students interact in an environment that eliminates superficial judgments based on factors such as appearance and speech patterns, students who generally would not associate with each other often end up forming friendships.

Students receive academic support and feedback on assignments through several means. NovaNET and PLATO provide instant, computer-graded feedback on assignments; CMA administrators have found that this "faster feedback is better" for students than hand-grading in many cases. To supplement this automated feedback, students and mentors communicate frequently, almost exclusively through e-mail but also over the phone at times.

Students who need help managing personal issues also depend on their mentors for advice and guidance. If students are unsatisfied with the help the mentor offers, they may switch to another mentor. However, students have rarely pursued this option, as a student has asked to switch mentors only six or so times. CMA students also have access to an Internet-based counseling page, which contains an electronic job finding and college resource system.

Intake and Orientation

Most students find out about the program through word-of-mouth referrals, although hits to the web page also account for a significant number of applicants. CMA staff members work to ensure that web searches on topics related to online learning find the school's web page. In addition, the school advertises in regional yellow pages and on a few local radio stations.

Those interested in the program register through a secure Internet server on the school's web site. Many applicants call for more information before applying online, and school staff attempt to screen out unqualified students. CMA seeks motivated, interested learners, especially those who have parental support.

Once a student chooses a mentor and signs up for the school, he or she receives an e-mail providing instructions on contacting the mentor. Administrators send the student an official welcome letter, but the mentor handles the rest of the orientation process in whatever way he or she thinks is appropriate.

Assessment

Mentors measure student success through a combination of assessment methods. About half of a student's final letter grade is based on grades received on NovaNET and PLATO assignments, which all feature automated grading. Each student earns the other half of his or her grade through completing papers, exams, and other assignments that are turned in directly to the mentor. Another important component of a student's course experience (and grade) is the time he or she participates in the virtual classroom discussion section.

CMA requires all students to gain at least 80 percent mastery of course material. If a student does not demonstrate 80 percent or better competency, he or she is required to redo the course work until it is satisfactory. Due to the 80 percent mastery requirement, the school assigns only grades of A or B; students must revise work that would earn a C or below.

Staffing and Staff Development

The CMA staff comprises approximately 20 employees, including mentors, administrators, a registrar, and other support staff. Currently, 12 mentors work for the school, but administrators are now hiring mentors and plan to double the number employed within a year. All mentors must be certified in their home states, since most of them reside outside of Washington state.

Administrators lead periodic staff development sessions through Contigo software and conference calls. Topics addressed include "housekeeping issues" (e.g., grading procedures), technology, and online teaching methods. In addition, teachers receive an orientation handbook that contains policy and procedural information, and new mentors are paired with a veteran staff member to provide them with additional guidance.

Resources (Financial and Other)

CMA has received limited financial support from a few individuals and private foundations, as well as some small corporate donations. However, tuition payments are the school's primary source of operating revenue.

Hardware/Software Requirements

Students need access to a 133 MHZ or higher computer with a Pentium processor and a minimum of 16 MB of RAM. The computer must also have at least 1.2 GB of hard drive space, a 8x CD-ROM drive, a 28.8 Kbps modem with an Internet connection and browsing software, and the Windows 95 operating system. Technical support is available for mentors and students from the school's information technology director. He is responsible for making sure students are properly connected to the server and addressing any technical issues that arise. CMA's class providers — NovaNET and PLATO — also offer their own technical support to students.

Outcomes

CMA recently began to track graduates' success for accreditation reasons, but the data are not yet complete. No other data are available, although an administrator commented that the school's "success rate is largely dependent on the screening process in the beginning."

Furthermore, those who stay with program for more than a few days tend to continue to graduation.

Keys to Student Success

CMA administrators specify several key traits that help students succeed in the online environment. Enrollees should be independent readers who comprehend written information well, and should possess self-motivation and a desire to learn. Parents can help students succeed by helping to motivate and encourage them. This support is especially important in the virtual learning setting, since mentors can only do a limited amount to motivate students due to the distance barrier.

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CLASS Project

**University of Nebraska at Lincoln Department of Distance Education,
Division of Continuing Studies,
Independent Study High School
Lincoln, NE**

Parent organization: University of Nebraska at Lincoln Department of Distance Education, Division of Continuing Studies, Independent Study High School

Web address: http://class.unl.edu

Entity offering high school diploma: Independent Study High School

Accrediting agency/agencies: North Central Association of Colleges and Schools; Nebraska Department of Education

Current enrollment: About 1,000 course enrollments.

Tuition: Most courses cost $275 for out of state students, which includes all course materials; Nebraska residents receive a small discount.

Target Population

CLASS (Communications, Learning and Assessment in a Student-centered System) students are usually self-starters who are highly motivated. Many of them are high achievers who do not feel challenged enough by the curricula at their local high schools. Typical students enrolled in CLASS include:

- ***Students who want courses that supplement*** their local high school curriculum; often these students come from rural settings, where staff resources are less abundant. Over 65 percent of students enrolled in Independent Study High School distance education courses fall into this category.
- ***Home-schooled students*** .
- ***Children of missionaries and military personnel***, since they travel frequently.
- ***Homebound students*** who are unable to leave the house for medical reasons.
- ***Students in countries outside the United States***, who are without access to an accredited U.S. high school diploma program.
- ***Adult learners***, who have dropped out of high school but want to earn a diploma.

Other reasons that students enroll in CLASS include: to accelerate graduation; for remedial study; as a scheduling alternative or summer school option; and to prepare for college entrance exams. Administrators at CLASS hope to expand the diversity of their student body;

for example, by focusing on enrolling students from alternative schools who have behavioral problems.

Students who wish to enroll in CLASS must have a basic understanding of computers, including how to operate the keyboard, mouse, and CD-ROM drive. Students do not need any in-depth knowledge of computers, and Internet skills are useful but not required.

Curriculum and Instruction

CLASS offers students the choice of enrolling in a complete curriculum or in supplemental courses. There are currently 34 online courses to choose from, and five more will be added by the end of the spring semester. By fall 2001, administrators expect to have 55 web-based courses available. Students seeking an Independent Study High School diploma must complete at least five courses. They may choose from a broad spectrum of subjects, including: business, career planning, computers and technology, English, English as a second language, mathematics, science, and social studies. Students must complete each course in no less than five weeks and no more than one year.

Instructional design specialists, all with Masters' degrees in Education, create CLASS courses. These specialists consult with members of the CLASS team and others in the curriculum department. CLASS also provides assistance to the Kentucky Virtual High School and Kansas' Virtual Greenbush online educational center. These schools provide their own teachers, but use the CLASS courses and Internet server.

Instructors present course material directly through the Internet for students with high bandwidth computers, or through a mix of the Internet and CD-ROM for students with less advanced computers. CLASS makes use of video, sound, graphics and text in its courses.

Teachers provide feedback and communicate with students using e-mail, chat rooms, phone calls, and faxes. Student-to-student communication through chat rooms and e-mail is also encouraged. For students who live in the Lincoln area, on-site advising is used on occasion. CLASS staffers provide academic counseling, but do not offer guidance services to help manage students' personal problems.

Intake and Orientation

Prospective students find out about CLASS through referrals from the Independent Study High School, word-of-mouth, and exhibits at trade shows. Local high school staff members such as guidance counselors, whom CLASS targets with mailings, also refer students to the program.

CLASS does not use a screening process for applicants to the program. Courses are open to anyone with the necessary computer hardware and software; there are no minimum or maximum age limits. Students enroll online through the University of Nebraska at Lincoln, or CLASS, web sites. CLASS also accepts applications through e-mail, fax, standard mail, or over the phone.

The orientation process that familiarizes CLASS students with the program is self-guided. CLASS staff members do not conduct formal orientation sessions. Instead, students orient themselves using information provided on a CD-ROM disk and print booklet.

Assessment

CLASS courses are designed to be student-centered and project-oriented, so instructors do not teach with the aim of preparing students for standardized assessment tests. Due in part to logistical issues involved in administering exams to distance learners, such as the difficulty of ensuring that students are taking them independently, instructors use them sparingly. Instead, instructors evaluate students based on their work on research, writing and lab assignments. Some assignments are automatically graded by computer, but most are scored manually by the teachers.

Staffing and Staff Development

Instructors who teach in the CLASS program also teach other courses through the University of Nebraska's Independent Study High School, which offers classes in a variety of distance learning formats. Due to the extensive staff overlap between CLASS and other components of the Independent Study High School's distance learning program, it is difficult to separate who works on each project. The Independent Study High School utilizes ten full-time teachers and two advisors, as well as a pool of nearly 100 reserve teachers. In addition, a sizable research and development group works on curriculum design. Every full-time teacher has a Masters' degree, and all teachers are state certified.

Staff development consists primarily of seminars on a variety of topics, including issues associated with distance learning. Teachers are encouraged (but not required) to make use of University of Nebraska resources, including classes and seminars, to further their learning.

Resources (Financial and Other)

CLASS is funded through a five-year, $17.5 million federal grant made to the University of Nebraska Department of Distance Education for the purpose of developing an online high

school. The funding is composed of a $2.5 million grant from the General Services Administration and a $15 million U.S. Department of Education Star Schools grant. Tuition payments also provide a significant source of revenue.

Hardware/Software Requirements

Students need access to a Pentium PC with Windows' 95 or a Power Macintosh with System 7. The computer must have 32 MB of RAM, a modem (56 Kbps recommended) or network access, a 4x or greater CD-ROM drive, a 3.5" floppy disk drive, a hard drive with 25 MB of space available, a 15" color monitor, and a sound card with speakers. CLASS provides the appropriate Internet browser — Netscape for Macintoshes and Netscape or Internet Explorer for PCs — on CD-ROM. English as a Second Language courses require the use of a microphone.

Outcomes

No outcome data are available.

Keys to Student Success

CLASS administrators state that achievement-oriented and self-directed students have the best chance of success in the online environment.

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Compuhigh

Clonlara School (Ann Arbor, MI)
Fairmont, WV

Parent organization: Clonlara School of Ann Arbor, MI.

Web address: http://compuhigh.com

Entity offering high school diploma: Clonlara School.

Accrediting agency/agencies: National Coalition of Alternative Community Schools.

Current enrollment: About 350 students.

Tuition: For those in the Clonlara diploma program, $550 initial fee and $90 per course; if enrolling solely for supplementary credits, $275 per course.

Target Population

Compuhigh students are usually between 14 and 17 years old, although there are no minimum or maximum age restrictions. The program typically serves:

- ***Home-schooled students*** and frequent travelers. Home schoolers make up the largest segment of the Compuhigh population.
- ***Students for whom public schools are no longer an option***, often because they are struggling academically and in trouble with administrators for behavioral problems. These are generally bright kids who act out, which frequently happens because the traditional public school environment does not adequately stimulate them.
- ***Public and private school students*** who want to accelerate their graduation, supplement their standard curriculum, or make up credits.

Compuhigh administrators observe that home schoolers are often "more willing to embrace alternative ways of teaching" and thrive in the online environment. They have also been successful with students who have come to the program due to behavior problems. Many of these students respond to the type of academic engagement presented by the online environment.

Clonlara School offers an adult diploma program, but it is not yet available online through Compuhigh. Administrators believe there is not currently a large enough market for a privately funded adult online program, since adult learners are unlikely to have the resources necessary to pay for computer equipment and class costs.

Compuhigh does not require any advanced computer skills for enrollees. Incoming students should possess basic "point and click abilities," but need no other specific computer skills to navigate through the Compuhigh online environment.

Curriculum and Instruction

Compuhigh offers 13 online courses, with an emphasis on core subjects such as algebra, history, biology, English, and geography. Students must complete each course in less than one year, but there are some exceptions. There is no minimum time period required to finish a course.

Compuhigh mentors (i.e., teachers) developed all of the courses themselves, and intentionally focused on creating courses in core subject areas. Besides serving its own students, Compuhigh provides its courses to some public school systems and to Kansas' Virtual Greenbush online educational center.

Each class is taught in two main formats, or areas of learning. Lessons, which are all asynchronous, represent the primary format and can be completed at each student's pace. Students use the Internet and e-mail to receive and submit assignments. Discussions are the other main format, taking place over online bulletin boards where students can communicate about course-related material with their peers and mentor. Compuhigh experimented with online chat rooms, but found they were distracting to students and best suited for socializing. Every class has a mentor who checks student work, leads discussions, and answers questions. All text resources are available over the Internet or in public libraries — there are no textbooks to buy.

Mentor feedback on student work is personal and interactive; feedback is not computer automated or unidirectional. Mentors try to maintain close contact with their pupils, and may be reached directly through e-mail with any student questions or concerns. Compuhigh does not provide official counseling services, but mentors often end up fulfilling this role and helping students manage personal problems. The school provides social forums, such as chat rooms, for students to interact with each other outside of academics. This arrangement helps students share common experiences and find peer support.

Intake and Orientation

The Clonlara School refers many of Compuhigh's enrollees to the program. In addition, Compuhigh staff members speak at conferences, media events, and other public gatherings in order to promote the school. Compuhigh staffers also work to ensure that Internet search engines find Compuhigh's site when people look up keyword phrases such as "home school" or "online

learning." One of the most serious barriers to increasing enrollment has been a "resistance in public education to alternative education," according to Compuhigh administrators. They believe that public school officials are often frightened of the possibility that their funding stream could be affected by the low cost of online education.

Students typically enroll for Compuhigh's program over the Internet, although alternative arrangements are possible. When a student enrolls, he or she receives an e-mail containing instructions on how to log on to the Compuhigh class system. Next, the student reads through the online orientation guide, which covers important information about how the program works. If a student still has questions after reading the guide, he or she may send an e-mail to the school's principal. Any course-specific questions are directed to mentors. If the student needs additional help, he or she is assigned a peer buddy to provide extra orientation assistance.

Assessment

Compuhigh does not use traditional testing methods to evaluate student performance, instead focusing on portfolio-based assessment. Mentors prefer assigning pass/fail grades but will give letter grades if needed; for example, some students who are enrolled at Compuhigh in order to make up credits for another school require a letter grade. Assessment methods vary by course, and sometimes even by individual student. For instance, if a student wants a structured, disciplined course plan, he or she will receive it, since the mentors can freely adjust their styles to fit each student's needs.

Staffing and Staff Development

Compuhigh employs six staff members, all of whom serve as mentors — the school's administrators believe strongly that all staff members should be directly involved with teaching students. Teachers need not be certified but most hold either a teaching license or a relevant college degree.

Compuhigh does not offer any formal staff development programs, although staffers meet for dinner and discuss school issues about once every month. Since all teachers live in the Fairmont, WV, area, it is easy to organize additional staff meetings when necessary.

Resources (Financial and Other)

The Clonlara School provided Compuhigh start-up funding in 1993 and continued to contribute significant financial resources to the school during its first few years of operation.

Compuhigh has now achieved a solid financial footing and actually turns a profit from tuition payments.

Hardware/Software Requirements

The school's hardware and software requirements are not particularly advanced. Students simply need a computer with an Internet browser and e-mail access, except for those enrolled in the school's few English as a Second Language courses, which require audio capabilities. Compuhigh is involved in a pilot ESL distance learning project in cooperation with the University of South Dakota.

Compuhigh staff members provide technical support to students and offer live phone assistance at no charge if needed. In most cases, staffers fix computer glitches through e-mail correspondence. Students generally have problems with their home computer's software or hardware, rather than with Compuhigh's online system, but staffers provide help in either case.

Outcomes

No official outcome data are available, as no formal internal or external evaluations have been conducted. Compuhigh administrators offer anecdotal evidence that indicates students participating in the program are successful when they enroll in postsecondary education.

Keys to Student Success

Compuhigh administrators have identified several student characteristics that contribute to students' success, including: self-direction, since students are not as closely supervised as they would be in a traditional school setting; the ability to think independently; and critical thinking skills.

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CyberSchool

Oregon Public Education Network and
Eugene Public School District 4J
Eugene, OR

Parent organization: Oregon Public Education Network; Eugene Public School District 4J

Web address: http://www.cyberschool.k12.or.us

Entity offering high school diploma: Students' local high schools.

Accrediting agency/agencies: Northwest Association of Schools and Colleges; Commission on International and Transregional Accreditation; Accreditation Commission for International Internet Education

Current enrollment: About 120 students enrolled (changes frequently due to open enrollment policy).

Tuition: Most courses (5 credits) cost $300 per semester. A one credit course costs $60. Local schools generally pay the tuition for their students.

Target Population

The CyberSchool attempts to make local school curricula more flexible, in terms of scheduling and course variety. Unlike many online schools, which market themselves as alternatives to traditional education, CyberSchool targets its program primarily at successful, motivated students. CyberSchool administrators do not believe it makes sense to "pedal online learning as a fix" for kids who have struggled in school before. They have observed that if a student fails to succeed in the traditional school setting, he or she will likely encounter the same difficulties in an online setting as well.

Courses are designed for high school-age youth, but students ages eight to 57 years old have enrolled. The courses offered through CyberSchool generally focus on subjects youth can not get at their local schools or in a home school environment; for example, Advanced Placement classes, sign language, statistics, and technical writing.

There are no specific computer skill requirements for students enrolling in CyberSchool courses. However, students should possess basic computer skills, such as Internet browsing, e-mail use, and keyboarding.

Curriculum and Instruction

CyberSchool does not grant diplomas, but features a wide variety of supplemental courses so that schools may expand their curriculum offerings. The program is offering 44 classes this term, and the selection tends to grow by approximately 10 courses per year. Courses offered include Advanced Composition, American Literature, Civil War for Buffs, Marine Ecosystems, Model United Nations, and Spanish. Students are encouraged to take no more than three CyberSchool courses at a time, and have up to one year to finish each course, unless a student's local school or the CyberSchool teacher will not allow this much time.

Teachers at local schools develop CyberSchool courses; they both write and own these courses, a highly unusual arrangement. Administrators believe this arrangement helps teachers teach their "passions" — courses that include content and formats that they might not otherwise have a chance to teach. While teacher ownership of courses often leads to teachers' creating interesting, unique classes, it is not without problems. For instance, when a teacher quits or is fired, he or she may take the courses away from CyberSchool.

CyberSchool staff provide technical assistance to help teachers build web pages and add other computer-based resources to their courses. In addition, they evaluate each course's content to make sure it meets all the criteria outlined in CyberSchool's course approval guide.

CyberSchool courses incorporate e-mail, online chats, web-based audio lectures, video clips, textbooks and more, with much variation between classes. Courses are asynchronous, so students may log on at any time. Students are sometimes encouraged to work together over the web to help each other with assignments, and may engage in online discussions about class topics.

Teachers provide individualized feedback to students through e-mail, phone calls, and occasionally letters. They do not use any automated grading; it is all done personally. CyberSchool administrators send a detailed questionnaire to students asking for their input in a wide range of issues, ranging from technical to content-related topics.

CyberSchool does not provide counseling services to students for managing personal problems. Since participants in the program are almost always simultaneously enrolled in a local school, administrators reason that they have access to counseling through their home district.

Intake and Orientation

Many students find out about CyberSchool through their guidance counselors, but they are not always a consistent source of referrals. Guidance counselors are often extremely busy,

and may be skeptical of the CyberSchool program; for example, some fear it will take away jobs from regular teachers or are suspicious of the quality of online classes. Nonetheless, CyberSchool has begun to increase efforts to market the program to counselors, since they have the potential to provide numerous referrals.

Students enrolling in CyberSchool must specify an adult contact, who can be reached to check on the student. Students enroll and then receive a welcome message from the Principal, Jack Turner, with tips on online learning and other important information. The teacher of the course that the student has enrolled in receives a copy of the enrollment form, so he or she can contact each student and conduct a personalized orientation for the course.

Assessment

CyberSchool utilizes a wide variety of assessment methods, from video tapes to essays to exams. The assessment methods vary greatly among classes, although all courses assign letter grades.

Students must hire a proctor when taking exams in many cases, but some teachers prefer simply to monitor their students' work closely to check for cheating. In fact, CyberSchool administrators have found that the online learning environment creates "no unique problems" with cheating. Cheating is possible in any setting, they reason, and good teachers know what suspicious signals to look for to prevent it. One way CyberSchool addresses concerns over dishonest work is somewhat paradoxical — parents are encouraged to work with their kids in CyberSchool classes. Administrators believe this is an effective way to provide added supervision, as well as additional attention, to the student's learning process.

Staffing and Staff Development

CyberSchool employs two full-time staffers and a part-time administrative assistant. Currently, 20 teachers in three states teach CyberSchool classes. Teachers must have Oregon certification, but CyberSchool is attempting to change state law to allow instructors certified in other states to teach CyberSchool courses to Oregon students. The CyberSchool Consortium, a group of participating schools across multiple states, is expected to help loosen the requirement that Oregonians learn only from Oregon-certified teachers. The consortium includes member schools in Idaho, Ohio, Michigan, and Wisconsin; schools in California, Arizona and Washington will be part of the consortium soon.

Besides receiving technical and content assistance for course design, teachers participate in a variety of staff development programs through CyberSchool. Prospective teachers enroll in

an online course called "Creating Your First CyberCourse," which is adjusted to meet the teachers' needs based on the skills they already possess. Also, each summer all CyberSchool teachers meet for a week of training in Eugene. This training session includes bonding activities, group discussions, technical training, and peer-critiques of courses.

Resources (Financial and Other)

CyberSchool is located organizationally within Eugene School District 4J, but is also partnered with the Oregon Public Education Network (OPEN). Staff salaries are funded partly by the school district and partly by OPEN. In the near future, CyberSchool is set to split with the school district; it will move (in a virtual sense) and locate itself organizationally within OPEN. This change is largely a symbolic act, representing CyberSchool's desire to serve the whole state and areas outside of Oregon, because people often think CyberSchool exists primarily to serve the Eugene area. This notion has been difficult to overcome, and consequently several other districts have started their own distance learning programs. CyberSchool administrators believe there is no need for this duplication, as their program can easily serve the needs of all of the state.

CyberSchool has several corporate sponsors who have donated equipment and scholarship money. Sponsors include the Symantec Corporation, Apple Computer, Sun Microsystems, and Shared Communications/Advanced TelCom Group.

Hardware/Software Requirements

Students must have reliable access to the web; specific hardware and software requirements vary by course. Many students work on their local school's computers, while a significant number work on their home computers. Students usually receive technical support for hardware and software malfunctions from local school staff members or peers. CyberSchool does not employ a technical support staff of its own for answering students' questions.

Outcomes

CyberSchool is currently working on an official outcome report. Staffers estimate that students complete about 60 percent of the courses they start, although respondents caution that the rate is difficult to measure. Barriers to effective measurement include the school's open enrollment policy, and the considerable time students have to complete each class.

Keys to Student Success

Administrators cited a few notable attributes that contribute to student success. First and foremost, students must be patient when dealing with technical glitches, as they will inevitably occur. Second, students must practice effective time management. Third, students must maintain self-discipline, especially since the online setting allows for much more independence than traditional schools permit. Some program participants have a hard time adjusting to the freedom that comes with learning in an online environment.

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DoDEA Electronic School

Department of Defense Education Activity, Distance Learning Center
Mainz Kastel, Germany

Parent organization: Department of Defense Education Activity, Distance Learning Center

Web address: http://198.6.223.223/dlweb.nsf/pages/WelcomePage

Entity offering high school diploma: Local Department of Defense schools

Accrediting agency/agencies: Approved and sponsored by the DoD.

Current enrollment: 527 students.

Tuition: Free for students attending DoD schools.

Target Population

DoDEA Electronic School (DES) administrators caution, "distance learning is not for everyone...it does not take the place of classroom instruction." Nonetheless, administrators believe the school plays an important role in trying to broaden the appeal and efficacy of distance learning by incorporating multimedia, and bringing new resources to help bolster traditional learning. DES does not grant diplomas; rather, it offers supplemental courses, especially in order to support small schools' curricula by providing classes that require difficult-to-hire instructors (e.g., computer programming and Advanced Placement courses).

DES serves a wide variety of high school-age youth in more than 50 DoD schools scattered across the United States and abroad. In the 1999-2000 school year, most participating schools were located in Europe, but 12 DoD schools from the Pacific and seven from the U.S. participated as well.

While the majority of DES enrollees are students with good academic records, the school caters to at-risk students through an online version of the Advancement Via Individual Determination (AVID) program. AVID is a nationwide program designed to help at-risk students "attain the confidence and the skills they need in order to graduate from high school and continue their education." The online AVID program includes study skills exercises, online field trips, guest speakers, writing projects, college planning, and a Socratic seminar, which is a discussion forum based on readings that all participants must complete.

Curriculum and Instruction

In the spring 2000 semester, DES offered 16 courses, seven of which were at the Advanced Placement level. Most courses are geared to specific groups of students, such as those in need of AP credits and those interested in technology, but classes like health target a broader group. Course offerings include AP calculus, AP computer science, AP German, AP physics, economics, health, Visual Basic, and C++ Programming. All courses are developed internally by qualified DES instructors.

The course development process is slow and arduous. First, local DoD schools request the particular course offerings that they need. Once DES collects this input, staff relay the most promising course ideas to DoD's curriculum review committee in Virginia. The committee must approve DES's curriculum and staffing requests before the course design process continues. In addition, the teacher(s) designing the course must be trained in the specific course subject and must have passed classes on designing distance learning in the Virtual Professional Development Academy (VPDA). VPDA is a program that "helps teachers meet their specific professional development requirements, and allows them to earn graduate credit." Distance learning design courses provide instruction in areas such as theory, pedagogy, motivation in the online environment, and facilitating collaborative learning.

DES teachers frequently base the online courses they design on standard courses they have taught in the classroom. Administrators encourage each teacher to utilize "backward design," which means developing a course in reverse order. In other words, teachers begin with the key concepts that they want to instill in students, and then decide what to incorporate in the curriculum to meet the course's end goals. Teachers designing classes have one semester to work part time on course development, after which they pilot the class for a semester before officially opening it to enrollment.

DES classes utilize a variety of formats to present course material. All course material is asynchronous, since synchronous learning is an impossibility given that DES students are spread out across numerous time zones. Teachers provide instruction through the Internet, video and audio tapes, CD-ROMs, textbooks, faxes, and e-mail. DES makes extensive use of Lotus Notes software to facilitate collaborative learning among students across the globe. Lotus Notes enables multimedia communication and information sharing among students and teachers.

DES students typically log on to the virtual courses from their local DoD school during a specified class period. Students also frequently log on from school during free periods or after school. If a student has Internet access at home, he or she is given a password to log on to the system and complete assignments at night or on weekends. The DES system has "redundancy,"

which allows courses to be offered through an Intranet system, as well as over the Internet. This arrangement makes online learning possible in countries where the Internet infrastructure is underdeveloped.

If a student has a problem with an assignment or needs extra help understanding course materials, he or she can obtain several forms of help, including: asking a peer — either at the local DoD school, or enrolled in the virtual class — for assistance; speaking with the DoD school's local facilitator; e-mailing a question to the course instructor, who will reply within 24 hours; or calling the instructor on the phone. Teachers and students may keep in contact through other means besides e-mail and phone communication, such as Instant Messenger chats and faxes. Instructors and their pupils are urged to communicate regularly; daily contact is recommended. In addition to providing regular input on course material and completed assignments, teachers send out mid-quarter progress reports to each student. The DES principal is also available to students when needed.

Students who encounter personal problems may choose to turn to their online instructors or local facilitator for help, but true guidance counseling is provided at the local DoD schools, not through DES.

Intake and Orientation

DES classes are open to all high school-age DoD school students. However, DES attempts to enroll only those students likely to succeed in the online environment. DES encourages local school counselors to talk to students about traits needed for success in a virtual classroom. Prospective students must complete a checklist that gives them an idea of what is needed to succeed at DES. DES informs students who do not score well on the checklist that they may be unsuited for online learning. Before starting classes at DES, each student must sign a contract that includes stipulations that he or she will: read all feedback from teachers; access the virtual classroom and assignments regularly; meet course work deadlines; communicate with teachers and the local facilitator; and abide by the honor code.

Each DoD school with students participating in the DES program appoints a local facilitator, who staffs the classroom where students log on to DES courses. The local facilitator also makes sure the computer hardware and software run smoothly, proctors exams, and serves as a liaison among DES instructors, DES and DoD school administrators, and students.

Assessment

Instructors use a wide range of assessment methods and assign letter grades in all courses. Student work is commonly assessed with exams, research and creative writing assignments, collaborative group projects, computer programming assignments, and other special projects and presentations.

Unlike some online programs that allow students to work at their own pace, DES strictly enforces deadlines. Students must turn in assignments to the course instructor within the "due date window," if they want a chance to earn 100 percent credit. The due date window is a two-day period during which the teacher will accept assignments. Teachers typically return graded work to students in about one day. Since DES teachers usually have a load of between 50 and 60 students, keeping up with grading and regular correspondence with students is time consuming.

Staffing and Staff Development

DES employs nine full-time and eight part-time teachers, as well as a principal — who "supervise[s] and monitor[s] the development and delivery of courses" — and several administrative support staff. Each participating DoD school must assign a local facilitator for the DES program, and DES does not cover their salaries. The local DoD school principal enrolls interested youth in DES courses, with the help of DES staff and the local facilitator.

DES instructors all have graduate degrees, and most are public school veterans with a high degree of technical savvy. In addition to earning a basic teaching certification, DES teachers must meet requirements for teaching specific courses. DoD's Virtual Professional Development Academy (VPDA) helps teachers meet these "always expanding" requirements. The VPDA currently offers five courses and has served over 170 teacher-students. Additional staff development takes several forms at DES. The Mentor Institute program matches veteran DES teachers with local facilitators and new DES teachers, in order to provide additional training in areas such as curriculum design, approaches to collaborative learning, and assisting students.

Resources (Financial and Other)

DES is funded entirely by the Department of Defense. Participating DoD schools pay the local facilitator's salary, but DES pays for 100 percent of its online instructors' salaries.

Hardware/Software Requirements

Computers are available to students through their local DoD school. Enrollees must talk to their local facilitator in order to arrange a time to use the school's computer facilities. Some students log on to the DES system from home, but most choose to use local school computers.

Students contact their local facilitator if they encounter hardware or software problems. If necessary, the local facilitator will contact the course instructor or the Lotus Notes support staff. The Lotus Notes support team is in charge of tasks such as making sure that course web pages work and helping registration run smoothly.

Outcomes

Administrators note that DES students consistently score higher on Advanced Placement exams than students enrolled in the courses through traditional (i.e., classroom-based) DoD schools. Likewise, DES students score far higher on AP exams than the national average, and a similar pattern of achievement exists in other courses. Although no precise figures are available, administrators state that the school's success is also evident in the high number of DES students who enroll in postsecondary education.

DES has had to deal with what one administrator characterized as a relatively high dropout rate. The school's dropout rate — exact figures were not available — stems from the over-enrollment of students who are not a good match for online learning. Administrators hope to improve their process for making sure that students are suited to the virtual school setting.

Keys to Student Success

DES has identified a number of characteristics that help students succeed at the school, many of which are listed on the checklist given to students before they enroll. Students who perform well at DES are typically independent learners with good time management skills who are: self-motivated, organized, able to read for comprehension, visual thinkers, persistent, willing to ask questions, and committed to communicating with their online course instructors.

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Electronic High School

Utah State Office of Education
Salt Lake City, UT

Parent organization: Utah State Office of Education

Web address: http://ehs.uen.org/

Entity offering high school diploma: Local school where student is enrolled.

Accrediting agency/agencies: None, working toward accreditation from the Northwest Association of Schools and Colleges.

Current enrollment: 4,500 students (last year's figures).

Tuition: Free for Utah residents; $100 per semester for nonresidents.

Target Population

The Electronic High School (EHS) offers classes designed for students in the 9th through 12th grades. EHS students typically fall into one of the following four categories:

- ***Students who have failed a class*** and need to make up the credit with a course that has a flexible schedule.
- ***Students who want to enroll in classes that are unavailable*** at their local high school.
- ***Students who want to graduate early***, including those seeking Utah's "21st Century Scholarship." This scholarship program pays for 75 percent of state tuition costs over a two-year period, provided the applicant earns an associate's degree by the fall after his or her graduation from high school.
- ***Home-schooled students*** seeking to diversify their learning.

While their enrollment numbers are currently small, high school dropouts who have already earned a GED but want to work toward a diploma are an emerging population at EHS.

Students signing up for EHS classes need not possess advanced computer skills. Since EHS's classes use simple technological formats, students who can navigate the web and use e-mail will be able to function effectively.

Curriculum and Instruction

While EHS does not grant diplomas, it does provide supplementary courses that are almost always accepted by local high schools for transfer credit. EHS delivers its courses via three types of media: taped television broadcasts; Utah's EDNET system — a two-way network that allows for audio and video interaction — which may be accessed at any of 152 studios located in 111 towns across the state; and the Internet. Currently EHS offers five web courses, including Earth Systems, Human Biology, and World Civilizations, and it is developing 21 new courses that will be available in the near future. Students generally are given about one year to complete each class, but EHS administrators are flexible and grant extensions when necessary. EHS also acts as broker and helps enroll students in numerous other online classes offered through the North Dakota Division of Independent Study.

EHS develops its courses internally, relying on teams generally composed of between two and 10 instructors. Instructors designing courses make use of an electronic "Courseware System Toolkit" that was assembled by programmers from the Utah Education Network (UEN). One of the key supporters of the EHS program, UEN is a "statewide partnership that coordinates electronically delivered instruction and services." The toolkit developed by UEN helps ensure that EHS course designers format classes in a consistent manner. It helps guide the course design process from start to finish, and covers issues ranging from content to grading procedures.

EHS's web classes rely on instructional tools such as online chat rooms and bulletin boards, e-mail and the Internet. The vast majority of class material is presented asynchronously, but some classes incorporate synchronous chats. Even in these courses, however, students are not required to "attend" the chat sessions. Those students with schedule conflicts may read an online transcript of the chat session they missed at a later time.

Teachers offer feedback and support to students through several means, including personally grading student work and often providing written feedback. Students can view a web page that contains a listing of their tests and assignments along with graded results and teacher comments on completed work. Students can also access a web page that contains a profile of each teacher, including his or her phone number, e-mail address, and appointment calendar. Students may contact teachers directly via phone, e-mail, or in an online chat setting.

EHS does not employ a guidance counselor, so staff refer students who need help managing personal problems to their local high school counselor. EHS is currently building an automated academic guidance system, which should be operational in one year. This system will allow students to receive customized electronic advice on topics such as class selection.

Intake and Orientation

Even though EHS has made a conscious decision not to actively seek students at this point, due to its limited number of course offerings, awareness of the program has spread. Between word-of-mouth publicity and visits to its web site, numerous people in Utah and across the country have discovered the EHS program.

Internet courses at EHS typically follow an open enrollment schedule, so students may begin the classes at any time. Students who wish to register for an EHS class must first find the appropriate class in the course catalog and obtain approval from their local school counselor. After completing these steps, the student must send a short e-mail to EHS's principal to complete the registration process.

Once the student has enrolled, he or she receives an e-mail that provides basic instructions and information about the program. In addition, the teacher of the class the student has enrolled in contacts him or her with additional information about the course and checks to make sure the student has reviewed the online course syllabus. Teachers typically talk online with incoming students one-on-one, or in a whole-class chat, before the course begins. A web-based student handbook serves as an additional orientation resource, and helps students take full advantage of EHS's resources.

Assessment

EHS uses the same assessment methods as most high schools and assigns standard letter grades. Depending on the course, teachers evaluate student work based on their performance on proctored exams, essay assignments, research papers, and other projects. Since EHS does not grant diplomas and offers only a limited number of courses, Utah state exams are administered at students' local high schools.

Staffing and Staff Development

EHS's administrative staff consists of a principal and a part-time secretary. In addition, six instructors currently teach the five EHS courses (one course has a second section). Additional instructors are working on class design for the 21 courses currently under development. As is the case for all other public school teachers in the state, EHS instructors must be certified by the state of Utah.

EHS staff members meet at least twice a year in Salt Lake City for staff development programs. The EHS principal leads these two-day training sessions, and participating staff

discuss issues such as technology and distance learning techniques. Participants spend a good deal of time engaging in open-ended discussions about online schooling.

Resources (Financial and Other)

EHS receives $110,000 in line-item funding per year from the Utah state legislature. Additional support comes in the form of a rental agreement with the State Office of Education for facilities use, and curriculum development funding from a couple of sources. Course development is financed primarily through federal challenge grants and Utah Education Network resources (both monetary aid and staff assistance). Aside from some minor equipment donations, EHS has not benefited directly from any corporate partnerships.

Hardware/Software Requirements

Students enrolled in EHS classes must have access to the Internet and e-mail. Aside from these necessities, EHS does not specify any minimum hardware or software requirements. Nearly every high school in Utah is wired with advanced Internet connection technology, so students may access EHS courses at their local schools. However, many schools have obsolete computer equipment, so their students can not take full advantage of the available connection technology. Students logging on to EHS classes from home may run into similar barriers with slower, older computers. While new, high-speed computers are not needed for students enrolling in EHS courses, the more advanced computers do offer significant advantages in terms of convenience and efficiency.

EHS does not provide technical support for students who encounter software or hardware problems, but administrators state that there is really no demand for it. Students may refer to an online student handbook for information about basic computer terminology and operations. In case of computer glitches, local schools have their own technical support staff, and students may contact their Internet provider or computer dealer in case they have a problem with a home machine.

Outcomes

Last year, students completed EHS courses (including the television, EDNET and Internet formats) at a rate of 93 percent. The course completion rate for students enrolled in the Internet courses was even higher than the overall rate, nearly 100 percent. Earlier in EHS's existence, Internet course completion rates were significantly lower, largely because many students enrolling did not know what they were getting into. These students incorrectly expected that Internet classes would not be as challenging or comprehensive as traditional ones. In order

to address this problem, EHS instructors make sure students see a detailed syllabus, which includes a list of all the course's assignments, before they begin each class so students know exactly what to expect. Administrators credit this informational intervention approach for greatly reducing the course dropout rate.

Keys to Student Success

EHS administrators identify crucial student characteristics that facilitate success in the online setting. First, students need to be self-motivated, since teachers do not have the ability to work with them as closely as they would in a traditional school setting. Second, along the same lines, students must be able to work independently. Although "there is some socialization through chat rooms" and other group interaction, students are mostly left on their own and must rise to the challenge presented by independent learning. Some students struggle to adjust to the independence afforded by virtual learning, but others truly thrive and enjoy the added responsibility.

Contact Information

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E-School

Hawaii Department of Education
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Parent organization: Hawaii Department of Education

Web address: http://www.eschool.k12.hi.us

Entity offering high school diploma: Currently issued by local high schools, but the E-School plans to become a licensed charter school that grants diplomas.

Accrediting agency/agencies: Currently working toward fulfillment of Focus on Learning criteria for accreditation by the Western Association of Schools and Colleges; the Hawaii Department of Education runs the E-School.

Current enrollment: About 250 students enrolled in 370 courses.

Tuition: Free during the regular school year for students in the Hawaii Department of Education system; summer school costs $140 per credit. E-School does not admit out-of-state, private school, or home school students.

Target Population

The E-School seeks to provide a "World Class education for all students" by offering for-credit courses to a wide variety of students in the 7th to 12th grades. Students enrolling in E-School courses must be part of the Hawaii Department of Education school system due to state law, which means nonresidents and students attending private or home schools are not eligible. Students must have online access and a set of basic computer skills to be eligible for the program.

Administrators believe E-School helps prepare youth for life in an increasingly digital world by providing them with skills that offer an advantage in careers, college, and life in general. An administrator noted that all sectors of society will become increasingly dependent on technology. Thus, all students can benefit from learning in the E-School environment, not just those planning on working in the technology sector.

Students wishing to enroll in an E-School course must pass a test that assesses specific "digital skills" needed for success in the program. Students must demonstrate knowledge on a variety of topics, including e-mail, Internet browsing, word processing, file transfer protocol, online chats, and list serves. The Intake and Orientation section of this profile details the skills testing process at greater length.

Curriculum and Instruction

Although E-School does not grant diplomas, it does offer a wide variety of classes. This past Fall, E-School offered 20 courses; it offers fewer courses in the Spring semester, since many Fall courses continue for a second semester. E-School courses include Advanced Placement Calculus, Earth Science, Entrepreneurship, Modern History of Hawaii, Problem Solving, and Shakespeare On-Line. E-School staff members developed the courses based on Hawaii's curriculum content and performance standards.

Teachers provide instruction through several types of media, including e-mail, the Internet, television programs, videos, online chat rooms, and CD-ROM disks. The E-School Show is broadcast on television weekly, and features information on the E-School program, appearances by teachers, and course lectures. All courses incorporate synchronous learning opportunities, in order to emulate the live interaction found in traditional classroom settings.

Students receive feedback and support from instructors primarily through e-mail correspondence. Each student has access to a secure personalized web page that contains vital information, such as his or her class schedule, a list of assignments, a bulletin board, a school calendar, and the student's report card. One administrator commented that, ironically, virtual courses are usually "more intimate than 'regular' classrooms," since they facilitate increased one-on-one interaction and students generally open up more in an online setting. E-School teachers send out progress reports to parents four weeks into each semester.

E-School staff members track students' academic performance. If a student is struggling academically, E-School staff members attempt to improve the situation by speaking with the student and his or her family. If the academic troubles stem from underlying personal problems, staffers may refer the student to his or her local school's guidance counselor. E-School does not provide its students with nonacademic counseling services besides referral to a local counselor.

Intake and Orientation

When asked how people typically find out about their school, E-School administrators said that "word is out" and Hawaiians are aware of the program. The E-School has worked hard to market their program by contacting school principals, guidance counselors, technical staff, and others. Current advertising efforts include mailing brochures and sending online information on the E-School to Hawaii public schools. The weekly television show also increases public awareness of the program.

Since the E-School is patterned after the standard public school calendar, students may only enroll in classes at the beginning of each semester. When applying to enroll, students must complete a digital skills assessment. Students failing any section of the assessment exam must complete an online training tutorial and then retake the section(s) of the test that they originally failed. Students may skip the digital skills assessment by enrolling in an optional course that teaches computer skills and gives students some first-hand distance learning experience.

Assessment

Assessment of student performance at E-School is conducted through the "usual methods," in other words, students receive letter grades based on their performance on exams, research papers, essays, etc. Most teachers emphasize project work over testing. When exams are administered, they may be proctored in person or taken independently online, depending on the course. In general, the assessment methods used at E-School vary significantly depending on the course and instructor.

Staffing and Staff Development

The E-school staff includes one student helper, two clerical workers, two administrators, and 10 teachers. E-School also pays a small stipend to a site facilitator at each participating school. The site facilitator's duties include representing the E-School program, occasionally proctoring exams, and helping register and advise students. The E-School also collaborates with the Magnet E-Academy, which offers on-site learning with extensive virtual content, so the E-School benefits from their staff as well. Developed with a U.S. Department of Education Technology Innovation Challenge Grant and run by the Hawaii Department of Education, the Magnet E-Academy focuses on courses in math, science, engineering, and technology. It currently offers these courses at over 20 schools across Hawaii, and targets students interested in advanced technology careers.

Resources (Financial and Other)

The E-School is funded by a U.S. Department of Education Technology Innovation Challenge Grant, which provided $4.7 million for further expansion of virtual schooling in Hawaii. The Hawaii Department of Education also contributes funding to the E-School.

Hardware/Software Requirements

Students must have access, either at school or home, to a computer with web access, e-mail, and a version 2.0 or better Internet browser. E-School allows the use of both PCs and

Macintoshes. Administrators advise students to use the most recent and fastest computer they have access to, since older, slower models are less efficient for online learning. Students in some classes will need access to a television and a video cassette recorder. Technical support is available on the phone and through e-mail, or students may ask their site coordinator for help.

Outcomes

The E-School course dropout rate was 40 percent a few years ago, but this figure has leveled off in the 22-28 percent range since then. An administrator stated that sometimes kids enter the E-School program with a preconceived notion that online courses will be "as easy as basket weaving." In fact, students tend to find E-School courses quite challenging and typically quit courses because they are "too hard" and their teachers have high expectations.

Keys to Student Success

Students must possess one key asset, aside from digital skills and a computer with an Internet connection, to succeed at E-School. Motivation is the most important student attribute, since instructors can teach digital skills and an Internet connection can be purchased. Students who are unmotivated and dislike school will not likely thrive in an online environment.

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The Florida High School

Alachua and Orange County Public Schools
Orlando, FL

Parent organization: Alachua and Orange County Public Schools

Web address: http://fhs.net

Entity offering high school diploma: Currently issued by affiliated local high schools. Plans to grant diplomas independently in the future.

Accrediting agency/agencies: Currently seeking accreditation from the Southern Association of Colleges and Schools.

Current enrollment: 2,200 students.

Tuition: Tuition and course materials are free for Florida residents.

Target Population

The Florida High School (FHS) serves 9th to 12th graders who reside in one of 62 affiliated Florida counties. The target population includes:

- ***Public school students*** who want to accelerate their program, have scheduling conflicts, or are not doing well in school. Sixty percent of FHS' students fall into this category.
- ***Home-schooled students*** who want to supplement their studies, accounting for about 30 percent of enrollment.
- ***Private school students*** (about 10 percent of participants) seeking to enhance their curriculum.

FHS serves a large number of students from rural districts, since many cannot attract the teachers they need to provide higher level (e.g., advanced placement) classes. It also enrolls individuals who are attempting to qualify for the state's "Bright Future" Scholarships, which call for applicants to complete courses beyond those normally required for high school graduation.

Although no specific knowledge of computers is required, basic familiarity with e-mail and keyboarding makes the learning process easier. However, students can receive help in this area through classes and informal assistance.

Curriculum and Instruction

FHS hopes to have a complete high school, including student services, online by 2001. In fall 1999, its offerings included 49 courses in the following areas: business, computer technology, family and consumer sciences, foreign language, language arts, mathematics, physical education, research and critical thinking, science, and social studies. Courses comply with Florida's "Sunshine State Standards" and incorporate the competencies identified by the Secretary's Commission on Achieving the Necessary Skills (SCANS).

Instructors develop courses by working in teams that include curriculum, design, and subject matter specialists. Courses meet distance learning standards developed by the Southern Regional Education Board, and are subject to both internal and external peer review. FHS is in the process of meeting accreditation requirements established by the Southern Association of Colleges and Schools.

Instruction is almost entirely web-based, with CD-ROMs used only as an ancillary method. The school uses Lotus' "Learning Space" course development software, although administrators believe they may have to adopt other software that can more readily accommodate the larger number of students that FHS serves. Learning Space's modules include a "Course Room," where students submit assignments, receive feedback from instructors, and then make revisions. Within this module, students can also participate in threaded discussions.

Students receive feedback through both e-mail and monthly progress reports. FHS guarantees that its staff will respond to e-mail messages from students within 24 hours; turnaround time is usually only a few hours. Each month, teachers e-mail their students a progress report that indicates the percentage of the course completed, whether the student has maintained a satisfactory amount of contact with the teacher, an interim letter grade, and any additional comments deemed necessary.

FHS' guidance counselor addresses needs for support services by responding to individual e-mail messages that students send concerning personal problems, distributing information of interest to all students through group e-mail messages, and circulating a monthly newsletter. Students can also access the University of Florida's Counseling Center, which is staffed by graduate students in counseling, through the FHS web page.

Intake and Orientation

Before beginning their studies, new students must do the following:

- ***Complete FHS' online registration form***, which demonstrates that they have some level of technical ability, and that their equipment is working properly.
- ***Sign and return the Acceptable Use Policy*** .
- ***Participate in New Student Orientation***, a two- to five-hour online session that familiarizes students with FHS and its procedures.

Afterward, students receive welcoming phone calls and e-mails from instructors. Those who are uncertain about whether online learning is for them can complete a short survey that asks about their ability to set a personal schedule; writing, communication, and problem-solving skills; ability to follow detailed instructions; and level of comfort with using, and access to, the Internet. FHS administrators request the student's Grade Point Average (GPA), but otherwise have deliberately kept initial assessment procedures simple in order to avoid excluding students who might excel in an online environment.

Assessment

Since FHS does not grant diplomas independently, students take mandatory standardized tests (including the Florida Comprehensive Assessment Test, or FCAT) at their local schools. Within courses, instructors employ a variety of methods to assess student progress, including independent projects, quizzes, portfolios, and reading logs.

Staffing and Staff Development

The staff of FHS consists of about 35 employees, including administrators, instructors, a guidance counselor, three technical specialists, a curriculum specialist, and a research and resource specialist. Certification requirements are the same as for personnel in other Florida high schools. An advisory board composed of business and education leaders from over 50 counties in Florida helps provide advice and leadership to FHS.

Staff development takes place both in the Orlando office and, for instructors in other areas, online. Online activities make use of DialPad, which transmits telephone calls over the Internet, and DataBeam's synchronous chat area. Monthly staff meetings include presentations by staff members and outside speakers on various topics of interest; for example, an upcoming meeting will feature a presentation on course development software that FHS might adopt.

Resources (Financial and Other)

FHS' financial support comes from a state appropriation, which has totaled about $10 million since the project began in 1997. Business partners, including IBM and World Book, have also provided financial help and software.

Hardware/Software Requirements

Students need access to a 486 MHZ computer, preferably with a Pentium chip. The computer must have an Internet connection, CD-ROM drive, Windows 95 or 98, Netscape 4.5 or higher Internet browser, a printer, and 32 MB of RAM. Macintosh computers are generally acceptable, although a few courses specify the use of PCs. Technical support is available to help students solve computer hardware and software problems.

Outcomes

In the 1998-99 school year, students at FHS completed 525 courses and dropped 496 courses. Greater than 80 percent of students received grades of A or B, an outcome that administrators attribute to the school's "submit for review" procedure. More than 70 percent of students in Advanced Placement (AP) courses received grades of three or better (on a five-point scale); in one new AP course (C++), 60 percent earned a five. In the 1999-00 school year, FHS projects that its students will complete 2282 courses and drop 514 courses. FHS is currently conducting a comprehensive formal evaluation that began about a year ago.

Keys to Student Success

FHS administrators have identified a number of attributes that contribute to student success, including: self-motivation; the ability to work independently; computer literacy; time management; written communication skills; and personal commitment. In addition, administrators note, those most likely to succeed are individuals who learn well through visual materials, and who are interested and proficient in reading since FHS requires far more reading than a traditional school.

Contact Information

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J.H. Groves Diploma-At-A-Distance

James H. Groves Center
Dover, DE

Parent organization: James H. Groves Center
Web address: http://www.jhgroves.org/daad
Entity offering high school diploma: J.H. Groves Adult High School.
Accrediting agency/agencies: Middle States Association of Colleges and Schools.
Current enrollment: Roughly 100 students.
Tuition: $30 per course for Delaware residents; about $100 per course for others.

Target Population

The J.H. Groves Diploma-At-A-Distance (DAAD) program is open to those who are at least 18 years of age (no stipulations), or at least 16 years old and have withdrawn from high school (not expelled). To qualify, DAAD students must also be unable to reach one of J.H. Groves' six brick and mortar high school sites due to distance, an inflexible work schedule, or other such barrier.

The DAAD program attracts a variety of students. Typical enrollees include:

- ***"School phobics"*** — people who are uncomfortable in the traditional school setting and prefer the distance learning alternative.
- ***Adults at least 18 years old*** who were expelled or withdrew from school.
- ***Others at least 16 years old*** who were not able to complete a high school diploma.

The companion Alternative Education Program serves youth between 16 and 21 years of age who are enrolled in school. These students transfer the credits they earn through J.H. Groves courses back to their home high school.

Student must be able to use an Internet search engine and e-mail, as well as create word processing documents. After enrolling in the program, students attend an orientation session where staff members offer computer instruction. At this orientation, students have an opportunity to test out of the CS01 Computer Literacy class required of enrollees.

Curriculum and Instruction

DAAD offers 15 online courses, including Business Communication, Composition and Writing, Economics, Health, and U.S. History. Another option for students is the Certificate of Educational Attainment, an independent research program held in conjunction with an English class that allows students to earn 10 credits upon completion.

The DAAD program is approved by the Delaware State Board of Education, and the curriculum meets the state requirements for standard high schools. The only difference is that DAAD does not require its students to take physical education classes. J.H. Groves instructors and administrators developed all of the DAAD courses.

Online courses rely on e-mail and the Internet to transmit assignments and learning resources to students. DAAD uses the FirstClass system to coordinate e-mail correspondence and material assignments. FirstClass is an Intranet server software package aimed at a market segment that requires a system more advanced than basic e-mail but less complicated than Microsoft Exchange or Lotus Notes. FirstClass incorporates cross-platform usage and Internet access, but does not require advanced hardware.

Unlike some online schools, where learning is almost entirely self-paced, students at DAAD must complete each course in 10 weeks. Courses are asynchronous, so students may complete their class work at any time of day, but they must stick to the 10-week schedule. Students work on weekly assignments and remain in contact with instructors and their peers through e-mail, electronic conferencing, audio tapes or phone calls; e-mail is the primary tool for correspondence.

DAAD provides some support services to help students manage personal problems, but this function is limited. Most counseling services center around academics and career advice, not personal guidance. The counselor offers assistance over the phone and online.

Intake and Orientation

Each applicant to the DAAD program must undergo an assessment of his or her reading, math, and writing skills. This initial assessment ensures that each student has the requisite fundamental skills to complete the program, which is especially crucial because almost all instructions and assignments come in print form.

Students must be physically present at a J.H. Groves site three times per class: first, for orientation to complete an assessment; second, for the midterm exam; third, for the final exam. Unless they test out of it, students must take CS01 Computer Literacy before enrolling in any

other courses. This requirement is designed to guarantee that all students have the basic computer skills necessary to succeed. The course provides instruction on word processing, e-mail, Internet browsing, and spreadsheet and database operation.

Assessment

DAAD relies primarily on midterm and final exam scores for student assessment, although teachers may also assign essays, research papers, and other projects. Exams must be taken on-site at a J.H. Groves center or, for out-of-state students, supervised in person by a qualified proctor. Instructors assign letter grades based on a standardized numerical scale. Students must earn at least a 70 percent overall score to pass; if their score ends up below 70 percent, they are "recycled" and must retake the class in order to earn the credits. J.H. Groves students may also earn high school credits through employment experience, military courses and training, community service, life skill testing, and similar means.

Staffing and Staff Development[2]

DAAD has about 10 people on staff, including technical support, teachers, administrative support staff, and a part-time counselor. All DAAD teachers have full certification from the state of Delaware.

The school has one employee who focuses primarily on issues associated with professional development. For instance, this staff member facilitates training sessions in FirstClass software. Also, DAAD reserved spots for all of its employees in a distance learning certification class offered by Indiana University at the program's inception.

Resources (Financial and Other)[2]

The DAAD program was developed with support from federal Adult Basic Education funding and state adult high school appropriations. The DAAD program currently receives its funding primarily from Delaware state education appropriations, with additional aid provided by Perkins Vocational Education federal funding and a couple of smaller sources.

Hardware/Software Requirements

Students must have access to a 486 MHZ PC running Windows 95, or a Macintosh operating on System 7.1. The computers must have a modem with an e-mail connection and

[2]Some information in this section comes from a draft paper entitled "How States Are Implementing Distance Education for Adult Learners" by Fran Tracy-Mumford.

Internet browser. Loaner computers are available to those in need upon payment of a $75 security deposit.

Computer technology specialists provide technical support through e-mail and over the phone. DAAD offers this support service for help with DAAD hardware or software glitches, not for problems with students' personal computers.

Outcomes

Very little outcome data are available for the DAAD program. All J.H. Groves programs strive for a 65 percent course completion rate, and DAAD currently aims for 10 graduates per year. Last year, the DAAD program graduated approximately that number. No other outcome data are accessible.

Keys to Student Success

DAAD administrators have identified several characteristics that help ensure student success. Students that thrive are typically self-starters, who are organized, manage their time well, and establish reasonable goals for themselves. Since DAAD requires its students to complete assignments and classes in a set time frame, students must have the ability to "stay on task and comply with strict deadlines."

Contact Information

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Keystone eSchool

Keystone National High School
Bloomsburg, PA

Parent organization: Keystone National High School

Web address: http://www.keystonehighschool.com

Entity offering high school diploma: Keystone National High School.

Accrediting agency/agencies: Commission of Schools and Colleges of the Northwest Association of Schools and Colleges; Commission on International Transregional Accreditation; Accrediting Commission of the Distance Education and Training Council.

Current enrollment: About 200 students.

Tuition: $299 per course, including texts, learning guides, and support services.

Target Population

Keystone National High School is a private school that provides both traditional correspondence-based courses and an Internet-based distance learning program. Keystone's online division, which began in 1999, is called "eSchool," and serves a 9th to 12th grade population that includes:

- ***Home-schooled students*** who want a full curriculum or supplemental courses.
- ***Public or private school students*** seeking to enhance their curriculum or get ahead in school.
- ***Students who travel frequently*** and enjoy the convenience of on-line learning.

The eSchool has very few restrictions on enrollment, although students must have completed 8th grade and possess adequate English language skills. While eSchool does not require any specific computer skills for enrollment, students should have a working knowledge of keyboarding, the Windows operating system, Internet browsing, and e-mail.

Curriculum and Instruction

The eSchool provides both a complete high school curriculum and supplemental courses for credit at a student's local high school. Keystone offers more than 30 courses in subjects such as algebra, chemistry, earth science, English, government, health and physical fitness, and

sociology. Students may access most courses online through the eSchool, although students interested in some subjects (e.g., Spanish) must enroll through Keystone's traditional correspondence program. The school's professional course writers developed all of Keystone's courses.

Students enrolled in eSchool's full curriculum must complete 21 credits for graduation. Requirements include four courses in English; four in social studies; three in science; three in mathematics; one each in art and music, health, and skills for success; and four electives. Students must complete at least five courses at the school to earn a Keystone diploma.

Instruction makes use of both online media, such as chat rooms and e-mail, and standard text books. Administrators at the eSchool plan to incorporate audio and video lectures and demonstrations in the near future. The online "HomeRoom" is the site provided to each student where all of his or her academic information is stored, including test scores, courses completed, and teacher feedback.

The eSchool provides academic support to its students in several ways. Students may ask questions over the phone, via fax, or through e-mail sent directly to instructors or to the On-Line Help Desk. Keystone responds to all requests for help within 24 hours. Teachers at eSchool provide individualized feedback on assignments over the Internet. Students also receive web-based guidance through Keystone Learning Guides that accompany each course, progress reports, and lesson evaluations. Students communicate with their teachers through phone calls, faxes, and letters. Keystone features an Advisory Teaching Service, which is a free to all students. Each student is assigned a teacher to work with one-on-one, in order to improve the student's academic performance. This teacher personally evaluates the student's work and provides in-depth feedback, as well as help with scheduling and other academic concerns.

Keystone offers another type of academic counseling through a free transcript evaluation service that assists students in selecting courses, in order to ensure that they follow a manageable path toward graduation. Although Keystone does not have an official guidance counselor to help handle students' personal problems, staff members may respond to student concerns through chat rooms, e-mail, or phone conversations.

Intake and Orientation

Instead of using formal advertising to attract students, the eSchool relies on referrals from the traditional Keystone program, word-of-mouth, and visits to its web site. Once a student applies, he or she must complete a brief application process that includes the following:

- ***Submitting an online transcript evaluation form***, which allows Keystone staff to assess the student's course needs.
- ***Providing an official transcript*** documenting prior course work, for those students who wish to transfer credit from courses completed at other high schools.
- ***Using the planning guide*** to choose their courses.

Students must also decide whether to enroll in the traditional correspondence program or in the eSchool. Students may enter the Keystone program any time of year, as it has an open enrollment policy.

There is no formal orientation process for incoming eSchool students. However, when students enroll, they do receive a confirmation e-mail containing information on the program. Keystone staff members can answer any additional orientation-related questions that students may have.

Assessment

The eSchool breaks its courses into two parts, with each part divided into three lessons. Instructors administer exams at the end of every lesson and part. Exams composed of objective questions are graded automatically and instantly, with feedback displayed in the student's virtual HomeRoom. Students turn in questions from subjective exams, which require individualized grading, to instructors electronically. Students also complete short quizzes, as well as research papers, journals and other writing projects that require personal attention from instructors. The instructors grade each assignment and provide comments in the student's HomeRoom within 72 hours of submission.

Staffing and Staff Development

Keystone employs nearly 40 staff members, including teachers, administrators, course evaluators, and other support staff. Many staff members share their time between the eSchool and the correspondence program. All Keystone teachers hold state certification in secondary education.

Staff development takes place through workshops and a new teacher orientation. During staff development programs, teachers discuss the unique aspects of distance learning, including how to engage in effective communication with students in an online setting. They also learn about topics that typically concern students, such as when they will receive text books and how the online grading process works.

Resources (Financial and Other)

The eSchool and other Keystone programs are funded almost exclusively by tuition payments.

Hardware/Software Requirements

Students need access to a Pentium PC or Macintosh with 32 MB of RAM. The computer must have a modem, video card, sound card, speakers, Netscape Navigator or Internet Explorer browser, and a printer. There is no specialized technical support staff, but students may contact Keystone through e-mail or phone calls for help with hardware or software problems.

Outcomes

Since the eSchool just began in September of 1999, and students have a full year to complete each course, no official outcome data are available. At Keystone as a whole, more than 40 percent of students go on to attend postsecondary schools after graduating.

Keys to Student Success

The eSchool has identified several attributes that contribute to student success, including discipline, self-direction, heeding suggestions, and the ability to set and follow a schedule. Students must also utilize the resources available to them at Keystone.

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Milwaukee Area Technical College—Adult High School

Milwaukee Area Technical College
Milwaukee, WI

Parent organization: Milwaukee Area Technical College
Web address: www.matc.edu
Entity offering high school diploma: Milwaukee Area Technical College
Accrediting agency/agencies: North Central Association of Schools and Colleges.
Current enrollment: About 1450 students.
Tuition: Ranges from $16 to $22 per course; $25 extra for out-of-state students.

Target Population

The Milwaukee Area Technical College Adult High School (MATC Adult) offers both a diploma program and supplementary courses for transferrable credits. While the program is called an "adult" high school, it serves both adults and regular high school-age youth. MATC Adult is unusual in that it is the only Wisconsin high school that offers diplomas through a technical college.

Administrators believe MATC Adult fills a major need because the Milwaukee area has a 25 percent high school dropout rate, and many other areas of the state face a similar situation. Furthermore, students who drop out of Wisconsin secondary schools have only five years to go back and earn a diploma. If, for instance, a student drops out of school at age 17 and wants to return for a diploma at age 23, it is too late. MATC Adult allows people in this situation to transfer their high school credits to the program and enroll in additional classes to work toward a diploma. Most students take only one year to earn a diploma from MATC Adult, since they typically transfer a significant number of credits to the program.

MATC Adult serves a wide range of students. At its inception, the program focused on educating high school dropouts in the Milwaukee area, but it has expanded to meet several other needs. The program now enrolls: high school students needing a few make-up credits to graduate; rural students and others who seek to expand their local curricula options; those too ill to attend a standard high school; migrant laborers, through a grant run in coordination with

United Migrant Opportunities Services; and some inmates, although this program is small due to security concerns related to prisoners accessing the Internet.

Administrators have witnessed an interesting trend in the last few years. While the pool of students who apply to regular brick and mortar adult high schools has dropped significantly due to the state's low unemployment rate, the MATC Adult program has expanded rapidly. Many high school dropouts have jobs that make it difficult to attend traditional adult high school classes, but still have the motivation to earn a diploma. The MATC Adult online program allows each student the flexibility of "attending" class and completing assignments at his or her convenience.

MATC Adult works to keep its computer skills requirements to a minimum so that the program may continue to serve as broad a segment of the population as possible. Incoming students must be able to read and compose e-mails, navigate in the Windows environment, and browse the web.

Curriculum and Instruction

MATC Adult offers 35 "academic" courses online, just short of the number of courses required for a student to complete a full high school curriculum. Since students who enroll in MATC Adult typically have completed at least some high school-level course work, the program's lack of a full curriculum has not yet presented any problems. MATC Adult teachers are currently working to design several "technical" courses — e.g., auto working — that should be online soon. These courses will require some face-to-face competency demonstrations, but will be completed primarily online.

The online part of the MATC Adult program was founded in 1997, and 40 credits are required to graduate. Students must complete eight courses in English, six in social studies, four in mathematics, four in science, three in health or physical education, one in computers, one in careers, and 13 in elective subjects. MATC Adult teachers design their own online courses, and, unlike in some virtual schools, teachers must be familiar with technical design issues. There is little curriculum development funding available, so teachers do almost all of the academic and technical design work themselves.

Keeping with their philosophy of making online courses accessible to a broad spectrum of learners, MATC Adult relies on easy-to-use technologies to present its class material. MATC Adult classes incorporate several technological formats that are coordinated through IntraLearn, a software platform that incorporates numerous features that allow users to "create, deliver and manage secure, interactive and measurable learning over the Internet." MATC Adult offers

instruction that includes online discussion groups; the Internet; e-mail; a limited amount of synchronous course content; online group projects; and, in just a few classes, standard text books.

MATC Adult provides feedback and academic support to students through several means, and answers student inquiries within 24 hours. When attempting to answer student questions, MATC Adult staff first direct the student to a guidance web page that contains numerous FAQs and their answers. In case a student has questions that are not addressed by the online FAQ page, teachers may be reached through e-mail and over the phone. Some teachers have virtual office hours, or require that students call and check in with them weekly. Individual class web pages often contain answer sets and general feedback on class assignments, which has proven useful for answering students' unasked questions. Teachers sometimes travel to areas in Wisconsin that contain large MATC Adult online student populations, in order to visit these groups in person and build a sense of rapport.

MATC Adult is working to develop a formal online guidance system for handling students' academic and personal concerns. The creation of this system has been slowed by various obstacles, including some confidentiality issues, such as making sure that the person seeking help is really who he or she claims to be. Currently, MATC Adult guidance counselors provide personal counseling services primarily in person. The counselor "orients, assesses, and advises new students; helps with career and college decisions; plans courses with students; and helps students experiencing personal, academic or crisis concerns."

Intake and Orientation

MATC Adult promotes the online program by mailing brochures and conducting other marketing efforts, but administrators note that "word is out" already. Demand for enrollment in the program's classes currently exceeds supply due to a shortage of qualified online teachers.

Before enrolling in the MATC Adult online program, prospective students may complete an online self-assessment test that allows them to see if they are an appropriate match for online learning. Results go to students and administrators, who may on occasion advise students against enrolling. In this case, the recommendation is not binding, and in practice students rarely heed it, but it has proven an accurate predictor of success. MATC Adult has purposely withheld from establishing formal admissions requirements. Administrators want students to have the chance to enroll in at least one class without significant barriers, so students can see first hand if they are an appropriate match for online learning. After a student completes his or her first class, MATC Adult likes to set up a meeting. During this meeting, a MATC Adult staffer assesses the

student's learning needs, reviews high school transcripts, and generally makes sure that the online program is an appropriate setting to serve the student's needs.

Assessment

MATC Adult uses various means to assess student performance. Teachers do not administer many multiple choice tests, preferring instead to evaluate student performance using online portfolios; essay type exams; and other written projects. Instructors assign letter grades based on a standardized numerical scale. Students must take proctored exams for subjects, such as mathematics, where it is difficult to tell if students are doing their own work. MATC Adult students need not complete any state-mandated tests because the program operates under special adult high school rules, rather than under the laws governing the state's public school system.

Staffing and Staff Development

The MATC Adult online program employs 14 staffers, although these staff members also perform other duties for Milwaukee Area Technical College. This figure includes 12 instructors, an instructional chair (analogous to a project director), and a head administrator. Online teachers must be Wisconsin technical college certified and certified in their specific educational area.

MATC Adult offers internally developed online staff development programs through five web courses on online training. The first course, which MATC Adult online teachers are required to take, trains instructors in managing instruction on the web. Instructors are encouraged, but not required, to enroll in the other classes in the training series. An MATC Adult administrator commented that further professional development is a key need for most online programs. The technology exists to make online learning successful. However, many instructors have "no idea how to incorporate technology into the classroom," and do not realize that technology is a teaching means, not an end in itself.

Resources (Financial and Other)

The MATC Adult online program runs on a shoestring budget — administrators "squeeze funds" from the Milwaukee Area Technical College's adult education budget. Not much money is available for the online program, so the teachers work on the online courses for no additional salary despite the labor they put into curriculum design. The online program is not supported by any other significant sources of funding.

Four years ago, a $100,000 Milwaukee Area Technical College grant went towards building an online learning center, where students may access computers for free. This grant

helps provide increased computer access to MATC Adult online students, and other students, in the Milwaukee area.

Hardware/Software Requirements

Students must have access to a MacIntosh or PC with an Internet connection and e-mail account. Many students find a printer helpful, but it is not required. Students do not have access to any specialized technical support services to handle hardware and software glitches, although they may contact the general Milwaukee Area Technical College help desk. Instructors can also help students in some cases, but they do not have to fulfill this role.

Outcomes

When MATC Adult was starting out and offered about 10 courses, the course completion rate was about 65 percent. When the curriculum was expanded, the rate dropped substantially to between 45 and 50 percent. Administrators determined that this drop was caused by the large number of enrollees who were uninformed about the online learning system — some enrollees even expected to receive a modem or computer in the mail.

MATC Adult staffers have worked to better inform students about what online courses involve, and have raised the course completion rate to between 50 and 55 percent. Despite their efforts, roughly 30 percent of enrollees never even begin their course work, which indicates that some students may still be confused by the online process.

Keys to Student Success

According to administrators, in order to be successful, MATC Adult students must be able to "think about what they are thinking." In other words, students must have the ability to comprehend the material they study and ask for help when they are confused. People who handle non-linear learning formats do better in the online environment, since the Internet environment requires extensive jumping around from point to point. Other student characteristics that indicate online learning potential include: self-motivation; the desire to study at one's own pace; the ability to work independently; and the ability to budget time and meet assignment deadlines without supervision.

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Mindquest

South Hennepin Adult Programs in Education
Bloomington, MN

Parent organization: South Hennepin Adult Programs in Education

Web Address: http://www.mindquest.org

Entity offering high school diploma: Bloomington Public Schools.

Accrediting agency/agencies: None, aside from being recognized as a public school in Bloomington, MN. They have chosen not to become accredited because of the expense and their view that traditional accreditation is not necessarily relevant to their program.

Current enrollment: 102 students.

Tuition: Free for Minnesota residents; others pay $300 per class. A one-time registration fee of $50 covers communications software, orientation materials, and technical support for connecting to the computer system.

Target Population

Participants in the Mindquest program must be at least age 17, but most are older. Aside from this stipulation, Mindquest does not target any particular segment of the population for recruitment. The program is open to Minnesota residents and out-of-state residents alike; enrollment includes a few international students. The majority of incoming students have already completed 11th grade. Students must have good basic academic skills, especially in math, since very few classes are offered in the subject and students must pass a math competency test to graduate.

Incoming students must be familiar with the basics of computer hardware and software operation. In addition, applicants must have Internet access at least three times per week for a total of four to six hours or more.

Curriculum and Instruction

Mindquest grants diplomas but only offers 13 or 14 courses. However, Mindquest has the same basic requirements for graduation as other Minnesota public high schools. Since the majority of students entering the program have already completed most of high school, Mindquest's limited course offerings are usually sufficient.

Students may complete course work in one of three tracks: (1) they can receive a regular Bloomington public schools diploma by going through the full Mindquest program; (2) those who already have a GED can use it to demonstrate prior knowledge, which allows them to enroll at an advanced standing and participate in a "fast track" toward a diploma; (3) those who need to make up credits for other high schools can complete the courses they need to earn diplomas from their home school district.

Requirements that students must fulfill at Mindquest include: a planning and portfolio class, half of which is taught at the beginning of the program and the other half at the end; a brief introduction to online learning; a learning strategies class, which includes a writing process section (soon to become a separate class); a career exploration course; and a class focused on designing a self-directed learning project. In addition, students working toward a diploma must take courses in the area(s) missing from their high school transcript.

Students must complete assignments on a weekly basis, so the environment is not entirely self-paced. The average length of time to complete a course is about three months, and the average time to earn a diploma is one to one and one-half years.

Mindquest developed its own curriculum with some help from staff at other Bloomington public schools. They also contracted with an ex-Mindquest instructor to help design several courses. Mindquest intentionally avoids using a commercially developed "canned" curriculum, where courses can not be changed by teachers. Instead, Mindquest seeks to design ever-evolving, flexible courses that allow instructors to target the classes to meet the needs of their students. One person interviewed at Mindquest stressed that flexibility is crucial for distance learning programs. She pointed out that "it is not as if you can go to a university and learn how to be an online teacher" because it is not a field with years of history behind it. Due to the many unknowns in the field, it is essential to be open to feedback from students and teachers alike when designing courses that work.

Mindquest uses the First Class client server application, which is an Intranet server that allows for the creation of complex online communities. Mindquest utilizes First Class's ability to embed pictures, sound, and different styles into text to allow its students and teachers to interact in a rich online environment. The school also makes use of online chats to foster student-student and student-teacher interaction. Mindquest teachers communicate extensively with program participants, providing formal and informal instruction through email, online chats, and phone conversations. The majority of this feedback on students' work is provided through e-mail correspondence, and teachers frequently encourage revisions.

Mindquest employs a full-time counselor who helps students manage personal issues and works with them to plan academic goals. Other staff members also provide guidance to students if needed.

Intake and Orientation

The application for entry into Mindquest requires some writing as a means to assess students' abilities. Sometimes Mindquest staff require additional writing assignments to evaluate prospective students. If a student does not possess the requisite level of writing ability to function effectively in an online setting, or if there is another barrier to success in an online curriculum, then Mindquest may refer the student to a classroom-based program. Mindquest is unable to provide the level of attention necessary for students lacking in basic academic skills as classroom programs, where they will receive closer attention from instructors.

Once enrolled in Mindquest, students work with a guidance counselor to design an appropriate learning plan. Participants making up credit through local high schools receive course selection guidance from their local school's counselor. Those who are enrolled solely in the Mindquest program work with the Mindquest counselor.

Assessment

Students must come to the Mindquest school site at least twice a year to give presentations. Those students who live far from the Bloomington area must give a proctored presentation in their home area. If teachers suspect a student of plagiarism or another form of cheating — a rare occurrence in their program — they require the student to come to the office for a meeting and may require more face-to-face presentations.

The student portfolio is the primary assessment tool in use at the school, which does not use letter grades. Students must demonstrate their growth and learning in five broad outcome areas: personal development, interpersonal development, intellectual development, career and employment knowledge, and community effectiveness. This is accomplished in part through mandatory reflective essays in each area. Teachers frequently have students revise work, emphasizing content and analytical skills more than grammar and other stylistic details, although students are expected to improve in these areas as well.

Mindquest does not choose to administer multiple choice or true/false type tests, instead preferring to require short and long essay exams that require a significant amount of thought and writing. The school does require its students to pass the same standardized tests as other public

schools students, as mandated by Minnesota state law. However, a large portion of the students have already passed the majority of the required exams by the time they enroll in Mindquest.

Staffing and Staff Development

The Mindquest staff comprises four teachers, a guidance counselor, a coordinator, and an office manager. The guidance counselor is the only full-time employee. Mindquest teachers must meet the same certification requirements as other Minnesota public school instructors; they must be state certified in the area (or areas) they teach.

Staff development at Mindquest occurs primarily through monthly meetings where staff members bring in case studies and discuss the effectiveness of different teaching strategies. The discussions help teachers build shared expectations of students and coordinate learning activities. This staff development process has resulted in extensive communication between teachers and a genuine team approach to education.

Resources (Financial and Other)

Mindquest is funded primarily through the state's graduation incentives aid for at-risk students and adult basic education funding, although these resources have not provided as much funding as school officials would like. With the exception of a few small grants of equipment and money, there are no other significant funding sources. A state grant for the Minnesota Distance Education Collaborative, which targeted adult basic education needs, provided funding that allowed Mindquest to develop several online courses.

Hardware/Software Requirements

Participants must have regular access to a 486 MHz or faster PC running Windows 95 or above, or a Mac 7.0 or above. They must also have a printer, word processing software, and a modem for connecting to the Internet. Loaner computers used to be available to students in the Bloomington area, but the program was discontinued recently due to a lack of technical support funds.

Outcomes

Almost all of Mindquest's 21 graduates have gone on to college. Their guidance counselor used to work at a community college, and her knowledge in that area has helped students who want to continue their education at the postsecondary level. Some colleges have concerns about accepting Mindquest students due to the unique learning environment and

ungraded system. However, this is not a major barrier, especially in connection with enrollment at two-year institutions.

Keys to Student Success

Students' basic academic abilities are important, since the online environment demands effective written communication skills. However, other factors are even more crucial. Mindquest students must possess a desire to learn and maturity, in order to thrive in the online setting. Since it is more difficult to give encouragement in a virtual school setting, students should also be self-motivated and good independent workers. A Mindquest staff member summarized what it takes to succeed in the school by saying: "Even if you read at the fifth grade level, our teachers will try to work with you. If you are not engaged in learning, there is not much we can do."

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Monte Vista's On-Line Academy

Byron Syring DELTA Center and the Monte Vista School District
Monte Vista, CO

Parent organization: Byron Syring DELTA Center and the Monte Vista School District

Web address: http://www.monte.k12.co.us

Entity offering high school diploma: Byron Syring DELTA Center

Accrediting agency/agencies: Colorado Department of Education; Monte Vista School District.

Current enrollment: About 70 students total, including 56 at the high school level.

Tuition: Free for Colorado residents. Textbooks and other course materials are paid for by the school.

Target Population

Monte Vista's On-Line Academy aims to "make a difference in the education of Colorado youth who are not currently being served by public education." It caters to a diverse student body that includes:

- ***High school drop outs***, who either failed out of school or chose to quit.
- ***Students who are unhappy with their local school*** for any of a variety of reasons.
- ***Youth who were expelled*** from school due to disciplinary problems.
- ***Special needs*** students, such as those physically unable to attend a traditional school.
- ***Students who must work*** during the day to support themselves or their families.
- ***Home-schooled*** students who need additional instruction.

Most students enrolled in On-Line Academy classes attend the school full time (i.e. they are working toward a diploma from the school), although some choose to enroll solely in supplementary courses through another school. The On-Line Academy makes a conscientious effort to enroll only students who are not succeeding in their present school setting.

The program targets Colorado middle and high school students, but accepts people from out of state and different age groups as well. Currently, a young woman from Massachusetts is enrolled full time and five students from Wyoming are enrolled in supplemental courses. One adult student is enrolled this year, which is a first for the program. This adult is the mother of a

current student; she decided to enroll in the online diploma program due to her daughter's positive experience at the school.

In an effort to make its student body reflect state and local demographics — e.g., 55 percent of students in the Monte Vista district are of Hispanic descent — administrators give extra consideration to students' gender, ethnicity, and economic status when making admissions decisions. The On-Line Academy has a policy that a prospective student's ability to provide a computer will not be a factor in his or her acceptance into the program.

Students seeking to enroll in the school should possess basic word processing skills and the ability to use e-mail and the Internet. Enrollees receive further instruction on relevant computer skills in a class that all incoming students are required to take.

Curriculum and Instruction

The On-Line Academy offers a curriculum of about 25 online courses in all the usual subject areas at the high school level. Classes offered include Biology, Consumer Math, Geometry, Internet Literacy, U.S. History, and World Geography. All courses were developed internally by On-Line Academy staff members. Most classes are web-adapted versions of courses originally taught at the Byron Syring DELTA Center.

The courses incorporate a variety of teaching formats, although the focus is squarely on using the Internet as the primary medium for learning. Besides web-based assignments, instructors utilize printed text books, e-mail, and CD-ROMs frequently. The school maintains a virtual "Schoolhouse," in which a number of web pages are devoted to each course. Pertinent information stored in these pages includes course outlines, assignment listings, and information on obtaining help from instructors. The On-Line Academy schedule follows the standard public school calendar, but students may complete assignments at their own pace within the confines of the school year framework. Students are not required to participate in any synchronous learning sessions — they may log on and complete class work at any time.

Teachers provide students with support and feedback primarily through e-mail communication, although they also speak over the phone on occasion. The school's system allows for the use of online chat rooms, but they are rarely used by students or teachers. The On-Line Academy does not provide support services for students dealing with personal issues due to the physical distance involved. The counselor's job is solely to provide academic guidance.

Intake and Orientation

On-Line Academy staffers have not attempted to link the school's web site to Internet search engines, since they already have enough applicants and favor focusing on the Colorado population. Students usually find out about the program through word-of-mouth referrals. In order to be accepted, each student must submit a written application and an essay on why the On-Line Academy is the best fit for his or her individual learning needs.

Administrators seek to enroll students who have not succeeded in traditional school, and are unlikely to accept those who are doing well in traditional school. The On-Line Academy is not designed to "steal" pupils from other schools; rather, it is intended to "provide another alternative for kids" who have struggled in the regular school setting.

All students who are Colorado residents must come to the school for a day of orientation, which includes hands-on computer instruction. This on-site visit allows students to meet their teachers (and vice versa), which is important because most students never return to the school again before graduation.

Assessment

Teachers at the On-Line Academy make use of a variety of assessment tools, with a focus on learning assignments, such as creative writing, research papers, and essay exams, that challenge students to provide in-depth answers. Teachers prefer these assignments in part because they make it much easier to recognize when students are cheating. Authenticating student work on multiple choice-type exams is sometimes difficult, so when teachers conduct this kind of exam they generally require the signature of an adult to verify the student's work. Teachers assign letter grades ranging from A to C. Students who fail to earn a C or better must redo the work repeatedly until it is of satisfactory quality.

Staffing and Staff Development

The On-Line Academy staff includes two full-time employees and three part timers, including teachers and administrators. As in traditional public high schools across the state, On-Line Academy teachers must be certified in Colorado. Local high school students help reduce the teacher workload by providing much of the grading of assignments that do not require detailed analysis or comments. These high school students also frequently serve as peer tutors for students enrolled in the On-Line Academy.

While the On-Line Academy offers no formal staff development programs, administrators point out that the job is a "constant learning experience." Teachers frequently work on their

computer skills, learn about new technologies, and update course pages to keep up with technological innovations and curricular changes. This process of continuous improvement fills the void of formal professional development programs.

Resources (Financial and Other)

The On-Line Academy is funded through per pupil allocations by the state, which is the same method used to fund other regional public schools, and by Colorado Department of Education grants.

The Byron Syring DELTA Center (formerly the Monte Vista Community School) is another key resource for the On-Line Academy. The DELTA Center offers "high school completion programs for adults, English as a Second Language instruction, alternative programming for high school-aged youth, and a wide variety of community education classes in such areas as computers, crafts, dance, photography, parenting, and others." The On-Line Academy is modeled largely on the DELTA Center program, and is characterized as a "school within a school" due to the close staffing and facilities ties between the two entities.

Hardware/Software Requirements

Students must have access to a computer with an Internet connection, e-mail account, and printer. Those who can not afford their own system are eligible for free loaner computers made possible by a grant to the school. The On-Line Academy currently has 30 computers on loan.

The student cost burden is reduced further by a program that reimburses the web access fees for all students who complete the school year.

Outcomes

During the last couple of years, the On-Line Academy has graduated 100 percent of its students. The program is in its fifth year and has graduated 10 students thus far; 12 more are scheduled to earn their diplomas in spring 2000. Approximately 80 percent of the graduates go on to attend higher education, and administrators state that they have been quite successful in postsecondary schools.

Keys to Student Success

The On-Line Academy has identified a number of keys to student success in the program, including: parental support, self-discipline, careful time-management, the ability to adjust to new technologies, self-motivation, and a desire to participate in the program.

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University of Missouri—Columbia High School

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Columbia, MO

Parent organization: University of Missouri at Columbia, Center for Distance and Independent Study

Web address: http://cdis.missouri.edu/MUHighSchool/HShome.htm

Entity offering high school diploma: University of Missouri, Columbia High School.

Accrediting agency/agencies: North Central Association of Colleges and Schools.

Current enrollment: 1,290 courses (student level data are not available).

Tuition: $90.00 per half unit of credit (one semester).

Target Population

The University of Missouri—Columbia High School (MU High) has no specific target population, although administrators would like to increase their adult enrollment. Currently, the MU High student body is composed almost entirely of regular high school students. Students enrolled in MU High include:

- ***High school students who want to supplement*** their curriculum in order to make up credits, graduate early, or take a class that is not available at their local school.
- ***Home-schooled students*** who want to follow a standard curriculum.
- ***Rural students*** seeking additional college preparation.
- ***Gifted students seeking a challenge*** .

MU High does not require any particular computer skills for enrollment, but basic abilities such as keyboarding and Internet browsing are helpful and result in a smoother transition to online learning.

Curriculum and Instruction

MU High, which has online and traditional correspondence courses, offers a full curriculum and grants diplomas. Approximately fifteen courses are available online, while

dozens of others are offered in the traditional format. Many of the courses not taught online, however, are computer-evaluated and allow for work to be submitted online.

The credits required to receive a diploma from MU High meet or exceed the standards established by the Missouri Department of Elementary and Secondary Education. MU High accepts transfer credits from all accredited high schools in the United States. In order to receive a diploma from MU High, a student must complete at least five courses through the program, no matter how many credits he or she has earned at other schools. Administrators at MU High recommend that students enroll in no more than two independent study courses at once. Students must generally complete each course in no less than one month and no more than nine months, although a three-month extension is available for an additional $15. Other than the per-course time limits, there is no fixed schedule for completing diploma requirements.

MU High classes are developed by state certified teachers from throughout Missouri. College professors also design some courses, but their work is reviewed by certified secondary school teachers. MU High actively seeks out teachers to develop courses for the school. Some online courses are modified versions of print-based ones, while others are original creations.

Independent study online courses are taught over the web, with all class materials aside from textbooks available over the Internet, including instructions, lessons, progress evaluations, and study guides. Teaching takes place online and is asynchronous, so students may access lessons at any time. Courses are computer graded and preprogrammed feedback is given depending on what answers a student provides. Students may also contact student services through a toll-free number or e-mail, and may get in touch with instructors directly using e-mail.

For those students enrolled in the full MU High curriculum working towards a diploma, a guidance counselor and other staff are available to help them through phone conversations or e-mail exchanges. Students enrolled solely in supplementary courses do not usually require MU High counseling services, since they have a local high school counselor available.

Intake and Orientation

MU High relies primarily on web site self-referrals and word-of-mouth to attract students to its program, although the school does exhibit at conferences across the state. Students can apply for admission to the MU High School diploma program at any time of the year. They must submit an application form and provide an official transcript of all high school courses they have completed. Students younger than 18 years of age need written permission from a local school official, or written verification that they are in compliance with their state's home schooling

regulations, to enter the MU High diploma program. Enrollment usually takes place online or through the mail, although phone enrollments are sometimes accepted as well.

MU High does not have an official, personal orientation process. Instead, an introductory section at the beginning of each course provides some tips and guidelines for independent learning. There is also a short electronic tutorial for navigation of the online resources available to MU High students. Students accepted into the diploma program will work with an MU High counselor to develop their own course plan.

Assessment

MU High is a private school, despite being located organizationally in a public university. Thus, students are not required to pass state-mandated standardized assessment exams. The exception is the requirement that students demonstrate competency in Missouri and U.S. history, which can be accomplished by passing a test or through several other means.

MU High assesses students in the same manner as most traditional high schools. Exams are given and students receive letter grades. When a student is ready to schedule an exam, he or she makes arrangements with an acceptable proctor to conduct the examination. Proctors may be high school teachers, school administrators, or librarians, among others. Exams in all courses must be taken face-to-face with a proctor, and it is up to the student to pay for the proctor's time. Upon completion of a MU High course, students receive a grade report, which lists a final exam score (if applicable) and a letter grade that is based on the number of points earned in the course.

Staffing and Staff Development

MU High has seven staff members, a figure which does not include the teachers who develop classes. Most staffers work with both the online and traditional correspondence courses, since they are part of an unified high school program.

Staff development is mostly an informal process at MU High, although the production/editorial staff sometimes attends formal courses on online learning topics. Other staff members usually keep up to date on technology and education issues by reading journals and other publications.

Resources (Financial and Other)

MU High is funded through tuition payments; revenue from online and traditional correspondence courses are lumped together.

Hardware/Software Requirements

Students need access to a 486 MHz PC (Pentium 75 or greater recommended) or a Macintosh 7.1 (Power PC processor recommended) with 16 MB of RAM. The computer must have 50 MB of available hard drive space, a modem and, in some courses, a printer. Other requirements include Microsoft Office or an equivalent software package, Netscape 2.0 or higher or Internet Explorer 3.0 or higher, and an active e-mail account.

Outcomes

No outcome data are available. MU High School features an open enrollment policy, which makes gathering consistent data difficult due to the often transient nature of enrollees.

Keys to Student Success

MU High administrators believe that independent learning requires students who are "dedicated and motivated since they have nobody to push them." Many students are not used to having responsibility for their own learning, so self-discipline is also important.

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Virtual High School

Concord Consortium and Hudson Public Schools
Concord, MA

Parent organization: Concord Consortium and Hudson Public Schools

Web address: http://vhs.concord.org

Entity offering high school diploma: Participating local schools.

Accrediting agency/agencies: All participating schools are accredited.

Current enrollment: 2,500 students in 32 states and 5 countries.

Tuition: No cost to students. Participating schools contribute funding (see Resources section for further details).

Target Population

The Virtual High School (VHS) is open to students at high schools participating in the VHS consortium. Any schools that want to participate may do so, although rural schools tend to benefit most because VHS often enables them to greatly expand their curricula. High academic achievers in search of an extra challenge academically make up the majority of the VHS student body, but VHS has attempted to include a broader range of participants. This strategy has been successful: VHS has recruited more participants from a broad socioeconomic spectrum and a greater number of non-college bound students.

The VHS program is also open to home-schooled students, as long as arrangements are made through the student's local high school district, since VHS does not grant credits or diplomas. VHS has not established any minimum or maximum age restrictions on enrollment; it is up to the local participating school to decide who is eligible. Thus far, some middle schoolers have enrolled in VHS high school classes, but no adult learners have enrolled in the program.

VHS administrators believe that the online setting is appropriate for a wide variety of students. Because of the virtual format, students are not immediately judged by their peers based on superficial factors, such as looks and speech patterns. This "blind education" helps build participants' self-esteem and confidence, resulting in a "level playing field" for learning.

VHS does not set specific computer skills requirements for students planning to enroll, but participants should be computer literate. They need basic Internet browsing and e-mail

skills, familiarity with word processing, the ability to operate in a Windows environment, and related skills.

Curriculum and Instruction

VHS does not provide a full diploma-granting curriculum, but it does offer a wide range of courses in all of the core high school subject areas. In the current school year, VHS is offering 94 "NetCourses," including classes in the following areas: botany, computer programming, earth science, finance, French, history, life skills, literature, music appreciation, mythology, political science, screen writing, Spanish, statistics, and writing. Students in the 9th to 12th grades can enroll in up to three VHS courses per semester, and will receive core or elective credit from their local school.

Teachers at participating schools develop classes with guidance from VHS. Teachers receive technology and teacher training assistance through the Concord Consortium, which conducts a mandatory Teachers Learning Conference (TLC) for instructors developing their own courses. TLC is a graduate-level NetCourse that trains VHS teachers how to design and teach effective online classes. It includes instruction on LearningSpace, developing NetCourses, and other technology and educational topics. TLC is composed of 25 weeks of training activities, and teachers who complete the TLC can earn four graduate credits from Fitchburg State College in Massachusetts. Instructors planning to teach a course designed by someone else must enroll in the NetCourse Instructional Method (NIM) training program, which is less comprehensive than TLC but covers all the areas required for teachers not designing their own course.

VHS classes are taught asynchronously over the Internet. Instructors make use of group chat rooms, threaded discussions on Internet bulletin boards, web-based video, CD-ROM disks, printed text, a variety of software, and e-mail to present material. All course work occurs online, with face-to-face contact optional and often nonexistent. VHS relies on Lotus LearningSpace to deliver VHS NetCourses to its students. LearningSpace is a set of five interactive Lotus Notes databases that facilitate course delivery over the Internet. Students browsing a NetCourse delivered using the LearningSpace software have access to a welcome page filled with teachers' announcements; a schedule page that outlines the course's assignments; a "course room" that contains all assignments and discussions; a media center with resources and reference material; and a profiles database that students can fill out with personal information.

Teachers provide individual feedback to students through electronic forms of communication. Feedback is always personal, and never computer-generated. Each

participating school assigns a VHS site coordinator, who handles project management, as well as teacher and student support services.

VHS does not have any in-house counseling services, but the participating local school's guidance counselor can offer students help with academic and personal concerns. VHS encourages students to interact with each other over the Internet; for example, the VHS web site features an online "student lounge" where students can chat and get to know each other better. This interaction may help mitigate student problems associated with adapting to the online learning environment by providing a network of peer support.

Intake and Orientation

The VHS site coordinator and other staff at local schools recruit potential students and decide which ones to accept into the program. They often consider student characteristics such as motivation, self-discipline, and the ability to work independently (see Keys to the Program's Success — below — for further attributes). Besides making intake decisions, site coordinators orient students to the VHS program. They also advocate for students, make sure their school's available technology is appropriate, and help students select courses.

Assessment

Any required, standardized state exams are given by teachers at local participating schools. Since the VHS consortium contains participating schools across the nation, standardized testing procedures vary greatly from state to state. VHS instructors rely on a variety of assessment methods, which are often different from course to course. Assessment tools include group projects, individual projects, essays, research papers, and regular exams. Teachers assign end-of-course letter grades ranging from A+ to F based on a standardized numerical scale.

Staffing and Staff Development

Eight staff members, including those assigned to technical support, administrators and teacher trainers, work on the VHS project. This figure does not include teachers, site coordinators, or other staff who contribute time to VHS through participating schools. VHS does not require any specific certification for its teachers, but nearly all teachers are certified as required by their local public school. Some teachers in the VHS consortium of schools plan to continue online teaching when they retire from regular teaching.

As described above, in the Curriculum and Instruction section, VHS instructors must enroll in either the Teachers Learning Conference or the NetCourse Instructional Method training course before gaining eligibility to teach an online course. TLC and NIM are quite comprehensive and serve as VHS's primary staff development programs.

Resources (Financial and Other)

Participating schools must contribute $50,000 worth of in-kind services, according to grant stipulations. They provide resources such as computers, Internet access for their students, and staff time. The cost of NetCourse materials, and upgrades to hardware or software used for the program, are further examples of typical in-kind contributions. Member schools must provide at least one teacher's time per semester to develop a course for sharing with the rest of the VHS consortium. Schools may enroll up to 20 students per participating course instructor.

VHS opened its virtual doors in 1996 through a grant from the U.S. Department of Education. Training, software, technical, and administrative support for participating high schools is made possible through a grant administered by the Hudson Public Schools. A Technology Innovation Challenge Grant covers the cost of 20 percent of each site coordinator's time and 20 percent of the cost of each teacher's time at the participating schools. This grant will end in 2001, and schools will then be responsible for all of the costs.

Hardware/Software Requirements

Students generally log on to VHS classes from their local school's computer facilities, although they may log on at home as well. VHS administrators recommend that students use the most recent hardware and software available to them, but do not set any specific minimum technical requirements.

VHS employs several technical support staffers. Their primary task is to provide technical support to teachers at participating schools, rather than for individual students. Staff at participating schools can usually solve individual students' technical problems, especially since students typically log on to VHS from school.

Outcomes

SRI International conducted a project evaluation including an expert panel, in order to review course quality at VHS. The review assessed 12 courses and found that 11 of them were of either "satisfactory quality" or "high quality," while only one was "of serious concern." For the details of the report, see the Project Evaluation link under the About Us section of the VHS

web site. Another SRI International evaluation — also accessible on the VHS web site — found strong and rising participant satisfaction, decreasing technical difficulties, more clearly defined roles for staff and students at participating schools, and high course quality.

Administrators estimate a roughly 20 percent course dropout rate for students enrolled in VHS classes. Students dropping out of VHS courses generally believe the course is too hard, or are frustrated with the quality of the technology available at their school.

Keys to Student Success

VHS lists motivation, self-discipline, the ability to work independently, problem solving, time management, a willingness to ask for help, and written communication skills as characteristics that lead to student success in the program. An administrator stated that "time management is the number one factor."

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