ONLINE COURSES IN APPALACHIAN OHIO HIGH SCHOOLS:
PERCEPTIONS AND EXPERIENCES OF SUPERINTENDENTS AND PRINCIPALS

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PERCEPTIONS AND EXPERIENCES OF SUPERINTENDENTS AND PRINCIPALS

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ONLINE COURSES IN APPALACHIAN OHIO HIGH SCHOOLS:

PERCEPTIONS AND EXPERIENCES OF SUPERINTENDENTS AND PRINCIPALS

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This study considered Appalachian Ohio public school district superintendents and high school principals and their perceptions of and experiences with online courses. Paper and pen surveys were mailed to all superintendents and principals in the 29 county Appalachian Ohio region. Of the 263 survey packets mailed, 77% of the principals and 74% of the superintendents responded to the survey.

Of the returned surveys, 55% of the high schools in the region reported offering online courses to students. This is considerably higher than the national average. Schools not offering online learning opportunities had larger student bodies, offered more traditional Advanced Placement courses, and had principals with fewer years experience in the position. Administrators agreed that online courses required independent and responsible learners.

Analysis of the closed-ended survey items revealed principals and superintendents agreed that online courses could be used to expand course offerings including Advanced Placement courses, for remediation, and for homebound students. Principals and superintendents reported that online courses should only be used as an alternative and not a replacement for the traditional classroom.
Analysis of the open-ended survey items showed administrators had strong reservations toward using online courses for anything but an alternative to the traditional classroom. Administrators cited lack of student motivation and lack of social interaction as particular problems with online courses. Several administrators who were happy with their online program cited the use of a mentor as key to a student’s completion and achievement in an online course.

Approved: 

Teresa J. Franklin

Associate Professor of Educational Studies
Dedication

To my wife Amy, who kept close,

during the good and the bad.
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CHAPTER 1: Introduction

*Study Background*

For many decades, distance education has allowed instruction to be delivered from teachers to students who are spatially, and/or temporally, separated (Everett, 1999). Originally this would have been carried out with correspondence courses using the postal service, but more recently, technologies like radio transmissions, telephone conferences, video tapes and television programs have served as the media for delivering course content (Watkins & Wright, 1991). One outcome of the increasing complexity in the technology employed for distance learning is the general increase in the potential for interactivity between teacher and student and among students (Vrasidas & Glass, 2002; Vrasidas, 2000; Smith, Clark, & Blomeyer, 2005).

The most recent form of distance learning is online learning, which is defined here as an educational experience which uses the Internet to deliver course content and exchange information. Compared with previous distance learning media, online courses can provide the opportunity for greater interaction and engagement with multiple paths for understanding (Conrad, 2002b).

Though still a barrier at times, geographical isolation is no longer the major reason for taking online courses (Nasseh, 2006). Other factors may separate learners from potential educational opportunities; they may also be isolated by demands on their schedules, limited school resources to offer desired classes, lack of student interest and/or certified teachers to teach advanced courses, or the diverse needs of the student population (Maeroff, 2003).
Besides the benefits already mentioned, schools that offer a wider variety of courses, through online courses, broaden the educational opportunities for students. This may have the potential to increase educational equity among economically disparate school districts. Though research is sparse on high school students who learn online, it has been shown that students in ‘virtual classrooms’ can surpass their traditional school peers in select areas like critical thinking, learning independently, problem-solving, creative thinking, and time management (Barker & Wendel, 2001).

The most frequently cited benefit of online learning is the ‘any time, any place’ model associated with how students work through online courses (Podoll & Randle, 2005). This flexibility provides students the opportunity to take courses that otherwise may conflict with other coursework or extra curricular activities. The asynchronous nature of the course work has been touted by some to encourage reflection and more meaningful student responses as they interact ‘in their own time’ with teachers and virtual classmates (Driscoll, 2002; Mantyla & Woods, 2001). When students are engaged in online discussions with their peers, they develop social and academic skills as they evaluate each others’ view points and perspectives (Brogan, 2000, McInnerney & Roberts, 2004).

Some research studies have shown that students may feel more connected with their online teachers and peers than in traditional classrooms (Chute, Sayers, & Gardner, 1997; Roberts, 2000). Students have direct links to their teachers via email or chat online without worrying how peers would react to their questions or comments. The online classroom can alleviate other barriers experienced by students associated with age,
language, geographic diversity, physical limitations, race, and culture (Berman, 1999; Dede 1997; Tunstall, 1995).

Schools also receive benefits by offering online courses. Those that can not recruit or afford to pay teachers to teach a broader range of courses may remedy the situation by using remote teachers in online courses. The student still receives credit through the home school, but the teacher and/or content of the course is externally supplied. For several years such programs have allowed schools to offer a wider variety of electives and advanced placement courses, which otherwise would not be available (Berman, 1999). Schools have to provide little, if any additional technology or classroom space for students to take online courses. Nearly all of the schools in the country now have adequate numbers of student-accessible computers with Internet access (Parsad & Jones, 2005). Additionally, schools have minimal scheduling responsibilities as students are free from the time and space restrictions of traditional courses when they take an online course. Students can work on their course at any time, from any computer (school, home, public library, etc.) that has Internet access.

Smith, Clark, and Blomeyer (2005) have summarized the increases in online learning for the first several years of the new century. It is estimated there were 40,000 to 50,000 K-12 online course enrollments in 2000-2001 (Clark, 2001). This number more than tripled to 180,000 in 2001-2002 (Peak Group, 2002), while Setzer and Lewis (2005) estimate 328,000 enrollments in online courses in 2002-2003. These numbers are still a fraction of the 53 million K-12 students attending U.S. public or private schools, but the
rate of increase in online enrollments over just a few years is notable (Livingston & Wirt, 2005).

A considerable amount of research conducted throughout the second half of the last century showed little difference in student achievement between traditional and distance educational models (Shachar & Neumann, 2003). The meta-analytic study of Cavanaugh et al. (2004), which analyzed 14 studies completed between 1999 and 2004, found no significant difference between online and traditional educational formats for academic achievement in K-12 settings (Falck, Husu, Kronlund, Kynaslahti, Salminen, & Salonen, 1997; Hinnant, 1994; Jordan, 2002; Kozma, Zucker, Espinoza, McGhee, Yarnall, Zalles, & Lewis, 2000; Mills, 2002; Ryan, 1996), frequency of communication between students and teachers (Kozma et al., 2000), and attitude toward courses (McGreal, 1994). In the field of online learning, this has come to be known as the ‘no significant difference’ phenomenon (Russell, 2002).

The potential advantages for both student and school of offering online courses as an alternative mode of learning are well reported in the literature. It is largely unknown which of the cited factors (financial resources, technological skills, computer and Internet accessibility, student achievement, teaching theory, etc.) most influence school administrators in the Appalachian region in their decision whether or not to offer online learning opportunities (Marcel, 2003).

Despite the advantages of online learning, several potential obstacles may need to be addressed before school administrators make the decision to implement an online learning program. Some of the potential barriers include: quality of curriculum and/or
teacher; number of interested students; teacher resources to support a program; financial resources to provide course content; quantity and quality of technology to deliver course content; student motivation; amount and quality of social interaction (Ladd, 2004).

School administrators should carefully consider each of these potential barriers when weighing the costs and benefits of providing an online learning program.

Purpose of the Study

One purpose of this study is to explore and identify the factors contributing to the online learning participation rates for schools in the Appalachian Ohio region. Cautiously, there was no indication resulting from a small pilot research project that students in this region perform differently than students from any other region of the country who are learning online. There is generous research which shows those students who do well in the traditional classroom typically are high achievers in online courses; those who struggle with the traditional classroom environment often do not persist in the virtual classroom (Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004; Goc Karp & Woods, 2003; Jordan, 2002; Kozma et al., 2000; Mills, 2002; Russell, 2002).

There are likely many factors that affect administrators’ decision whether or not to offer an online learning program. As the small pilot study results varied little from research involving students from other parts of the country, it seems to appear that student ability may be no greater or smaller a factor in the decision-making process for administrators in the Appalachian region. Perhaps the decision to provide an online learning program could be more closely related to administrator perceptions regarding the
purpose, characteristics, or issues and experiences with online learning in education, regardless of intrinsic student academic ability.

**Research Questions**

Stated formally, this study has three research questions:

1. What utility does online learning have in public high school education today, as perceived by Appalachian Ohio high school principals and district superintendents?

2. What characteristics associated with online learning do Appalachian Ohio high school principals and district superintendents believe impede or facilitate it being used as a viable public high school educational alternative to the traditional high school classroom?

3. What issues must high school principals and district superintendents address before implementing an online learning program in Appalachian Ohio public high schools?

**Definitions**

Key terms used in this study are *Administrator, Appalachian region of Ohio, distance learning, mentor, online learning, traditional school or classroom*, and *virtual school*.

*Administrator:* For the purposes of the current study, an administrator is limited to high school principal and/or district superintendent.

*Appalachian region of Ohio:* During the mid 1960’s, presidents Kennedy and Johnson urged Congress to create legislation to address the desperate poverty and economic
hardships faced by people in the Appalachian region. The Conference of Appalachian Governors was formed and charged with resolving the troubled region. Ohio is one of thirteen states included in legislation created to address desperate poverty and economic hardships faced by people in the Appalachian region. Within Ohio, 29 counties were named in the Southeastern corner of the state. These counties include 129 school districts and 134 high schools.

Distance learning: any education that occurs when time and/or space separates teacher and student. The original correspondence model involved the transfer of information via surface mail, while all later models have used increasingly more complex forms of technology to deliver information.

eCommunity School: “an Internet- or computer-based community school in which the enrolled students work primarily from their residences,” (Watson & Ryan, 2006, p. 96)

Homebound student: a student who is unable to attend a traditional classroom due to some circumstance outside of their control (e.g. physical disability).

Homeschooled student: a student who receives their daily education from home. Though the student could attend a traditional classroom, a conscious decision was made to receive their education at home.

Mentor: An adult provided by the high school who helps facilitate an online course. The person is not the course teacher, but helps students keep on track in their online course and answers general questions. This person may be a teacher, guidance counselor, or other designated person.
Online learning: a specific type of distance education. This refers to an educational experience which uses the Internet to deliver course content and exchange information. Typically the student and teacher are separated by space, and often in time. Students may attend a traditional school for most of the day but may participate in online learning by taking one or more classes over the Internet.

Traditional school or classroom: a school or classroom that exists at a physical address where students attend actual classrooms (brick and mortar school). This is in contrast to a virtual school.

Virtual school: a type of charter school that only exists on the Internet. Students access courses, teachers, other students, and all school resources over the Internet. Students normally ‘attend’ school using a homeschool computer, but like online learning, school activities can occur anywhere the Internet is accessible. Courses taken may supplement a student’s traditional school curriculum, or may make up a full high school curriculum.

Significance of the Study

This study contributes to a relatively small collection of research examining the use of online learning in rural high schools within the United States (Marcel, 2003). In particular, no studies were found in the literature which specifically examined high school use of online learning in the rural Appalachian region of southeastern Ohio.

As it is unknown to what extent online learning is currently being used in the rural Appalachian region, this study may allow administrators to compare this region’s use of technology with other rural Appalachian settings in the country. This study reports on administrators’ experiences with and perceptions of online learning in the region which
will then be used to summarize patterns of uses of online learning that are most appropriate given the needs of the students and the resources of the high schools. Determining such patterns may give schools a framework for better decision-making regarding whether or not to offer an online learning program, which could potentially broaden and deepen course offerings. A more informed decision maker is likely able to better serve the educational needs of their students.

Limitations of the Study

The major limitation of the proposed study is the lack of ability to generalize experiences and perceptions regarding online learning from the studied population to other schools across the state and country. Because an attempt will be made to collect data from all Appalachian Ohio district superintendents and high school principals, the data comprises a sample in time rather than a more traditional sample from an accessible population. Rather than describing or predicting aspects of the population from the sample, descriptive statistics will be used to characterize the entire population. This would require a rather high participation level by potential participants.

A second limitation of the study is the continually changing state of online learning technology, its availability, and the perceptions school administrators have towards it. It is acknowledged the state of online learning in the studied population will likely change in the foreseeable future with changes in available technology and educational trends.

Thirdly, it is understood that there is a tendency in studies which implement self-reporting methods for respondents to provide socially desirable answers (Fisher and Katz,
2000; Paulhus, 1991). This form of bias has been found to influence the measurement of personality variables (Mick, 1996), attitudes (Fisher, 1993), and self-reported behaviors (Mensch & Kandel, 1998). No attempt was made to account for the potential bias in this study.

Lastly, the current study has focused on two important administrators in the public school systems of this region: superintendents and high school principals. This is not to say they are the only influential or important voices in the decision-making process of whether or not online learning be made available to high school students.

**Delimitations of the Study**

The study includes all, and is delimited by the 29, primarily rural counties of the Appalachian Ohio. Though the results may cautiously be compared with other rural Appalachian high schools having similar demographics, the results are not intended to be generalized to these other schools or districts. This study is also limited to public high schools and is not intended to be generalized to other grade levels or type of school (private, religious, etc.). Other larger factors such as state educational policies may be incompatible with those that affect Ohio schools. Care should be used when comparing what did and did not work for schools in this study with schools in other rural Appalachian public high schools or parts of the country.

The overall objective of the study is to understand the current status, and reasons for the current status of online learning in Appalachian Ohio public high schools. The current study does not attempt to account for all possible factors affecting the status of online learning for the population of interest. Though it is acknowledged there are other
important factors and influential parties, the current study focuses on, and is delimited by public high school principals’ and district superintendents’ perceptions and experiences regarding online learning in Appalachian Ohio.

Organization of the study

There are five chapters in this study as well as references and appendices. Chapter one provides the background of the study and introduces the study’s research questions. Chapter two is primarily a review of the literature relative to the study, and covers technology in education, an overview of distance learning, access to the Internet in public schools, and topics related to online learning. Chapter three outlines the methods of inquiry used in the study. Chapter four reports the results of the study. Chapter five presents a summary of the study, discussion and interpretation of the results, and recommendations for further research.
CHAPTER 2: Review of Literature

The evolution of technology has continually broadened educational opportunities (Moore & Kearsley, 2005). This chapter will primarily focus on a literature review of the arrival and advances in distance learning. It begins with a history and overview of the use of technology in education and then focuses specifically on distance learning. In order to better understand the role online learning plays in education today, the major transitions of computing technology and distance learning are considered. A discussion of the adoption of new educational tools follows which then focuses specifically on virtual learning. As with any change in the status quo, adoption of and proficiency with new instructional tools takes time and is often initially met with considerable resistance. Next, Internet accessibility in education and the various models of online learning are considered. The chapter then turns to the characteristics of online learning, its benefits, and barriers faced by schools wanting to implement an online learning program. Then two examples of previous related studies are described. A summary ends the chapter.

Overview of Technology in Education

The personal computer arrived on the scene in traditional educational environments during the 1980s (Green & Gilbert, 1995). This “revolution” saw the new device being used only for very specific purposes, as the range and flexibility of available software applications was relatively limited. Access to increased computing power permitted financial and statistical analyses to be conducted more easily and efficiently. When the Internet became commonplace on campus in the early 1990s, another shift in computer use occurred. The personal computer was no longer a solitary desktop tool but
a communication tool, connected to any other computer through this new resource called
the Internet. This new functionality allowed transfer of information (data, text, images,
audio, and video) between “desktops.” Access to, and transfer of information were key
features of the new tool. Electronic mail facilitated collaboration between faculty in ways
that were never before possible (Hart & Mason, 1999). No longer was access to
information the only focus, it was sharing of information. Using the Internet to
communicate with anyone, at any time, from any place, to any place in the world made
exchanging information with others nearly effortless.

Because of the “connected” nature of schools today, many facets of education
have been dramatically impacted. Correspondence courses that were traditionally “one-
on-one” learning practices have evolved into web-based courses. Coupling access to
information with electronic communication, students taking online courses communicate
easily with their instructor as well as with other students in the course. Both online and
traditional courses may cover content presented in dynamic ways using various
multimedia tools, leading toward a more interactive learning experience. Educators have
a wealth of technology at their disposal to enhance the learning environment. Students
have never before been able to communicate with peers and teachers in so many different
and flexible ways. Their access to information and resources via the Internet is
staggering. Though it has been shown that computer technology can have a dramatic
impact on education, it is less clear exactly how it will be most frequently and effectively
used to enrich learning environments in the days ahead. Regardless, technology is a
component of education that is here to stay.
Overview of Distance Learning

One aspect of education that has taken advantage of technological advances over the years is distance learning. Distance learning may have functionally emerged with Gutenberg’s invention of the printing press which ultimately provided students with portable educational materials (Birkerts, 1994). Unlike times of strictly oral instruction, now the student need not be spatially and temporally connected with the teacher (Mantyla & Woods, 2001). With the words of the teacher on printed mobile media, the student was free to learn at a time and place more convenient than the time and space demands of a strictly face-to-face interaction. Though this certainly does not reflect our current notion of ‘distance learning,’ it does illustrate the use of a new media which allowed the student to learn from the teacher (in this case the teacher’s written words) with out the geographic proximity formerly required.

In the United States, we are more familiar with the benefits from the kind of distance learning first utilized by adult learners of the mid-nineteenth century who wanted a way to continue their education (Morabito, 1997). This was a time of westward expansion into the heart of North America which required new job skills and new ways of educating a work force that would manage, govern, and service the expanding country (Morabito, 1997).

Distance learning was not commonplace in secondary schools until 1890 when state law mandated compulsory school attendance in the United States (Morabito, 1997). In 1923, Sidney Mitchell, the superintendent of schools in Benton Harbor, Michigan, integrated ‘correspondence’ instruction in the high schools to provide vocational courses.
Designated guidance counselors monitored student progress through the correspondence courses. The model, successful on both economic and practical levels, was soon accepted by educators and other schools followed by implementing similar programs (MacKenzie, Christensen, & Rigby, 1968). As expected, there is evidence this new form of instruction was met with a considerable amount of prejudice and resistance (Harding, 1944). Yet, given that correspondence-based ‘distance learning’ persisted for so long, and was utilized by so many students, it could be concluded it ultimately gained acceptance as a viable educational media. That is not to say correspondence courses provided an educational experience equal in quality to the traditional classroom, but over the years has served as a legitimate alternative.

It was not until the 1960s that technology once again expanded the horizons of distance learning. Radio and television broadcasting technologies were used as the primary instructional delivery tools and were supported by print-based materials (Morabito, 1977). This model was especially embraced by international educational systems outside of the United States. Institutions quickly combined these new technological tools to customize the needs of the learning environment (MacKenzie, et al., 1968).

Adoption of New Educational Tools

Perhaps the best example of the early adoption of these new educational tools is England’s Open University, which enrolled its first students in January of 1971 (Open University, 2006). The Open University brought a new vision to distance education as distinct from traditional education (Zigerell, 1984). The Open University is a leader in the
large-scale application of technology to facilitate distance learning. The efforts of the institution are a major reason for the development of open universities in other countries, such as America and Japan. In 1998, the Open University celebrated its 25th anniversary and conferred its 200,000th graduate. There are more than 218,000 students currently enrolled at the Open University (Open University, 2006).

These new technologies were again met with considerable opposition from traditional educators resistant to change (Hodas, 1993). In the early 1950s, though many programs had proven to be successful, distance learning was still seen as suspect by academics (Watkins & Wright, 1991). There was little to no empirical evidence to support the apparent benefits of the teaching methodology. Childs’ (1973) work identified the use of television in education as a tool, not an instructional method; it is a means of transmitting instruction from one place to another; media rather than method. Childs also found no measurable difference between the quality of traditional classroom instruction and television or a combination of television and correspondence study (Almenda, 1988).

Throughout the 1970s and 1980s many types of technologies were used to deliver instruction. In addition to television and radio broadcasts, cable, satellite, and closed circuit television, audio tapes, laser discs, and facsimile machines were used by innovative educators (Watkins & Wright, 1991). Voice communication through telephone and two-way radios was also used. With the advent of the personal computer, CD-ROM programs allowed students to work at their own pace while being engaged through audio and visual presentations (Watkins & Wright, 1991).
Many of these technologies were too complicated and costly for smaller institutions and the general public to utilize (Nasseh, 1998). Such systems were primarily used by larger institutions of higher education while isolating the individual student, as well as the vast majority of students from smaller institutions. Though experiencing moments of bright success in specific learning environments, the widespread implementation and adoption of instructional technologies proved problematic for most teachers and students alike (Nasseh, 1998).

In the early 1980s, the personal computer became affordable to consumers. The Commodore 64 personal computer could be purchased from major shopping stores for around $150 in 1983, with modems allowing communication with the outside world selling for less than $100 (Polsson, 2006). Commercial online networks like CompuServe and Delphi allowed individual users to send and receive e-mail, chat online with other members on the network, download files from central repositories, and post messages on message boards for all to read (Morabito, 1997). With this technology, geography continued to be less a barrier to instant and open communication for the sharing of information between individuals.

**Virtual Learning**

In 1986 the first nationally available virtual learning community was founded. The QuantumLink Tutoring Center and Community College located on the QuantumLink network allowed Commodore 64 users to log on and receive live, text-based tutoring or take classes from certified teachers in online classrooms (Polsson, 2006). This was the first online-based learning environment operated completely over computer
telecommunications (Morabito, 1997). Having begun as a tutoring service, there was a rapid rise in demand for formalized courses. Teacher-developed courses were soon offered to adults, high school, and middle school students in real time using only text-based communication (Morabito, 1997). Students also downloaded supplemental resources from online libraries and posted messages to electronic bulletin boards to be shared with teachers and other students. This was a major evolutionary point for distance education as home-based students were spatially, not temporally, separated from live interaction with teachers and other students (Morabito, 1997).

In the 1990s, these new technologies began to be used to extend the boundaries of distance learning particularly as the Internet became more widely accessible. The Internet greatly expanded the breadth of tools online teachers could employ to deliver their course content (Schrum, 1994). Rather than relying solely on text-based communication, the Internet was able to deliver graphics, sound, digital blackboards, and audio messages (Blanchard & Marshall, 2004). Again, as with other new delivery systems, educators made the distinction between this form of ‘distance education’ and the traditional classroom experience, with distance education being considered second-rate to the latter (Schrum, 2002).

It is at this point in the evolution of instructional technologies the current study is positioned. Furthermore, this study focuses on Internet-based online learning opportunities available to high school students. To summarize, distance learning technologies have moved from low-tech (correspondence and audio conferencing) to high-tech (computer multi-media components and Internet-based online instruction). This
progression not only affected the delivery method of the instruction but also the nature of communication between teacher and student and between students. The ability of educators to use the Internet to integrate instructional content with communication is again revolutionary (Mioduser, Nachmias, Lahav, & Oren, 2000). As a result, online courses are emerging that integrate the interactivity of the Internet, the interpersonal discourse of conferencing/e-mail, and the structured curriculum of computer-based instruction.

*Internet Accessibility in Education*

Like previous technologies that proved difficult to implement because of their complexity and/or cost, online learning can only occur if the resources are available to make Internet access available to secondary schools. The most significant piece of legislation enacted to increase the equity of Internet access to schools was the *Telecommunications Act of 1996* (U.S. Department of Education, 2000). The law enabled all public and private non-profit K-12 schools, especially high poverty and rural districts, highly discounted Internet access rates. The first round of funding for affordable access was made available in 1998 and is now known as the education rate or e-rate. The e-rate represented an attempt to allow all schools to purchase suitable technological equipment and high-speed Internet access. The intent was to equalize the educational opportunities of every school regardless of economic status or geographic location (U.S. Department of Education, 2000).

Additional legislation aimed at providing every school with Internet access included President Clinton’s 1996 Technology Literacy Challenge, the 1996 National
Technology Plan entitled *Getting America’s Students Ready for the 21st Century: Meeting the Technology Literacy Challenge*, and the Elementary and Secondary Education Act which was reauthorized by the *No Child Left Behind Act of 2001* (Levin & Arafeh, 2002). The latter legislation includes allocation of funds specifically for developing educational uses of online learning. More recently, in the National Education Technology Plan (NETP), the U.S. Department of Education (2005) describes a national vision for technology in which online learning is seen as an important tool for attaining central educational goals.

In the fall of 2005, nearly 100% of all public schools in the United States had Internet access and 97 percent of those schools had high speed connections (Wells & Lewis, 2006). The same study reported approximately 94 percent of all school classrooms were connected to the Internet. At the same time, the average ratio of students to school computers having an Internet connection was 3.8 to 1 (Wells & Lewis, 2006). This was down from the 2003 ratio of 4.4 to 1 (Parsad & Jones, 2005). Access to the Internet does not appear to be a barrier to schools interested in offering online courses.

Setzer and Lewis (2005) reported participation rates for Internet-based online learning programs of secondary schools. During the 2002-2003 school year about one-third (36 percent) of all public school districts enrolled students in distance education courses (5,500 of 15,040 public school districts; Setzer & Lewis, 2005). Distance education included “asynchronous Internet-based online courses, asynchronous computer based instruction, two-way interactive video, one-way prerecorded video, and other technologies” (Setzer & Lewis, 2005, p. 9). Of those 5,500 districts, 59 percent of the
schools had students enrolled specifically in online distance education courses. Therefore, approximately 21 percent of all public school districts enrolled students in online courses. The vast majority (92 percent) of those students accessed their online courses from school computers (Setzer & Lewis, 2005). The most recent data from Wells and Lewis (2006) which includes the 2005 school year show 32 percent of all public schools, rather than districts, are using their Internet connection to offer online courses that are otherwise unavailable at the school.

During the 2003 academic year, a smaller proportion of rural districts than suburban or urban districts enrolled students in online courses (51 vs. 71 and 74 percent, respectively; Setzer & Lewis, 2005). In addition, large districts had more students enrolled in online courses than medium or smaller districts (80 vs. 71 and 53 percent, respectively). District sizes were classified with the following student enrollment criteria: small – less than 2,500, medium – 2,500 to 9,999, and large – 10,000 or more. Based on the Ohio Department of Education (www.ode.state.oh.us), there are over 1.7 million public school students in Ohio. For the 2005-2006 school year, the average public school district enrollment was 19,366. The median district enrollment was 8719. The average district enrollment in the Ohio Appalachian region was 7916 and the median was 6131. Given the size classification of Setzer and Lewis (2005), the average public school district in Ohio is ‘large’ and the average district in Appalachian Ohio is ‘medium’.

The more recent data from Wells and Lewis (2006) shows the trend reverting back to traditional usage patterns for rural districts and distance learning (Morabito, 1997). The work of Wells and Lewis (2006), which includes the 2005 academic year,
indicates rural schools are again more likely to provide online learning opportunities than schools in cities or suburban areas (43 vs. 25 and 24 percent respectively). This may illustrate how important distance learning, and in this particular instance, online learning, may be to rural schools; or at least currently utilized more than by urban or suburban schools.

*Models of Online Learning*

Factors other than access to the Internet may act as barriers, prohibiting schools from offering online learning opportunities. Schools with access to the Internet still must be able to navigate the logistics associated with implementing such a program. Several common models have been used, though all are still relatively new. The virtual school models primarily differ in how they are supported or sponsored and whether they provide supplemental courses and/or provide a full curriculum (Vail, 2001).

The most common models of virtual schools providing online courses are: district-level, state-level, virtual charters, consortium, post-secondary, and for-profit programs. Virtual schools providing online courses can be further divided depending on whether they offer courses that are supplemental to the student’s traditional curriculum or they offer a full curriculum that leads toward a high school diploma (Smith, Clark, & Blomeyer, 2005).

In most of the states with charter school legislation, general revenue funding follows the student out of their home district to the district operating the virtual charter school (Clark, 2001). The Ohio Department of Education website (www.ode.state.oh.us) reported the 2005-2006 per pupil revenue (Federal, State, and Local) was $8,778 while
per public school pupil expenditure was $8,525. For the Appalachian Ohio public
schools, average per pupil revenue was $8,644. Average per pupil expenditures for these
schools was $8,362. Depending on the type of online learning model employed, revenue
dollars would follow the student if the student attended the virtual school full time. A
proportion of that student’s revenue would follow the student if they were enrolled in
online courses only part time. The following are descriptions of the most common online
learning models.

District-Level

District-level virtual schools are usually managed by a school district large
enough to create and support its own virtual school. Such districts aim to improve local
educational opportunities as well as bring homeschoolers back into the district. In the
case of the Houston Independent School District Virtual School (HISD), online courses
are offered free to district residents and at a fee to students outside the district. HISD
allows students to supplement their traditional curriculum by taking online courses,
especially Advanced Placement courses, both during the school day and at any other
convenient time (Clark, 2001). Unlike other virtual schools, HISD has focused much of
its attention on middle school enrollees in addition to its large high school contingent
(Heidlage, 2003).

State-Level

State-level virtual schools are often developed, administrated, or funded in part by
state government and intended to serve the needs of students within that state (Watson,
Winograd, & Kalmon, 2004). There were at least 20 states operating virtual schools in
2005, with the Florida virtual school leading enrollments with 33,000. Approximately 22 percent of the school districts report having students enrolled in state virtual schools (Setzer & Lewis, 2005). State virtual schools most often provide supplemental courses to students in traditional schools, but may also serve homeschooled students.

**Consortium**

Virtual school consortia disperse the costs of course development and instruction across all participating schools, facilitating the development of a shared curriculum and shared standards. Approximately 34 percent of the districts reported enrolling in distance learning through other districts in their state and many were likely due to consortia (Smith, Clark, & Blomeyer, 2005). In order to participate, schools often pay an annual maintenance or service contract and agree to teach one consortium online course from their school, in exchange for the right to enroll 25 of their own students in courses of their choosing (Pape, 2005). The largest consortium, the Virtual High School (VHS Inc.) had 6,100 enrollments in 2004-2005 serving 268 schools across 29 states and 24 countries (Smith, Clark, & Blomeyer, 2005).

**Postsecondary Institutions**

Postsecondary institutions are building on their long history of providing distance education to offer K-12 schools online learning opportunities. Many of these programs originated in talented and gifted education, dual enrollment, or early college credit (Smith, Clark, & Blomeyer, 2005). Nearly half of public school districts reported enrollments in online or video-based distance education through a postsecondary institution in 2003-2004 (Setzer & Lewis, 2005). When colleges and universities offer
online courses to high schools, they not only enhance the learning opportunities for regional students, they have a unique opportunity to have direct contact with perspective students who may end up attending that postsecondary institution.

**Virtual Charter Schools**

There were approximately 86 virtual charter schools in 16 states with 31,000 enrollments in 2004-2005. These tuition-free public schools are independently operated. Funding is often provided by the student’s home school district and dependent on the number of courses taken, paid directly by the student, or through some state subsidy. Though the major target of virtual charter schools is homeschoolers, such programs only attract 2.8 percent of the homeschooled population (Princiotta, Bielick, & Chapman, 2004).

The first virtual charter school or “eCommunity school” as they are called in Ohio opened its doors for the 2000-2001 school year. They are virtual or electronic schools and are a subset of Ohio’s community schools. Some serve students statewide while others are sponsored by local school districts and serve students who live in that district. As of July 2004, Ohio had 44 eCommunity schools with nearly 17,000 enrolled students (Ladd, 2004). That is almost twice the number (23) of eCommunity schools operating in the state the previous year. Students work through their courses primarily from home. The eCommunity school is a public school that is operated independent of any school district, but is under a contract with a sponsoring agent authorized by the Ohio State Board of Education. Many of the eCommunity schools are partnered with the Tri-Rivers Education
Computer Association (TRECA), which is a state-funded Data Acquisition Site (Ladd, 2004).

Along with the rapid growth of the eCommunity schools came several concerns regarding the way virtual programs were being operated and the effect this had on students’ education: lack of academic and curriculum standards, low participation rates and scores in state assessment tests, and decreased enrollment in public schools leading to decreased funding for public schools. Due to these concerns, state legislation was enacted in 2005 which imposed a moratorium on new eCommunity schools in Ohio until the general assembly agrees to adopt standards for the schools (Watson, 2005).

Two significant studies have been conducted in Ohio regarding the start-up and operating costs of eCommunity schools in the state. The studies, by the Legislative Office of Education Oversight, reported that in fiscal year 2003 eCommunity schools spent $5,382 per student, compared to $7,452 per student for other community schools, and $8,437 per student for school districts (Ohio Legislative Office of Education Oversight, 2004). The eCommunity schools receive the same state per-student base cost funding amount as brick and mortar school districts ($4,949 for 2003). In addition, eCommunity schools receive various types of federal funds. These schools are eligible to receive continuous federal support through the Elementary and Secondary Education Act (ESEA) Title Programs I-V and the Individuals with Disabilities Act (IDEA). Funding is not dependent on the region of the state but varies according to what federal funds the school has applied, and ultimately affects the school’s per pupil funding amount (income). For the eCommunity schools listed in the report, federal funding for the 2003 fiscal year
caused the per-pupil funding amount to range from $5,604 for the Ohio Distance and Electronic Learning Academy to $15,091 for the Lancaster Digital Academy.

According to the Ohio Legislative Office of Education Oversight report (2004), when a student enrolls in an eCommunity school, state dollars are deducted from each student’s school district and are paid to the eCommunity school. This is no different than the funding model for other community schools. In most cases, this has no effect on the state’s budget. State dollars are just moved from one school to another. There is an additional cost to the state when students who did not attend an Ohio public school before enrolling in an eCommunity school. Additional state funding is required when students enroll in an eCommunity school when: they were previously enrolled in a private school, they were previously homeschooled, or they moved into Ohio from another state. Though this type of information is not tracked by the Ohio Department of Education or eCommunity schools, the Ohio Virtual Academy reported 40 percent of its students were formerly homeschooled.

For-Profit

Schools are accustomed to outsourcing, whereby an outside entity is employed to provide some good or service like transportation, food service, and payroll. Rather than spending resources developing, managing, and teaching online courses, some schools find it more cost effective to purchase courses on a per seat, per semester tuition basis from a for-profit company. Apex Learning is one such content provider that was opened in 1997 by Microsoft co-founder Paul Allen. Apex Learning initially specialized in Advanced Placement courses but now offers a wide range of core curriculum courses as
well (Heidlage, 2001). This type of model may be especially appealing to smaller
districts that do not have the resources to participate in large scale virtual school
programs, but still want to take advantage of online learning opportunities (Marcel,
2003).

Characteristics of Online Learning

Certainly, no one model discussed above has proved to be the most successful
from the standpoint of student achievement or financial outcome (Peak Group, 2002).
Rather all models likely have their place. A school interested in offering online courses to
students should consider their options and choose the model, or modified model, which
best fits their circumstance and need. That is what a good tool does; it better fulfills the
required needs than any other available tool.

The preferred model in part depends on the population of students and how the
educational needs of those students will be best served. Schools often aim to meet the
needs of one or more of the following populations: students within the same school,
district, or state; regional homeschoolers; and special needs students such as those that
are involuntarily homebound, special education students, dropouts, and those seeking to
complete a degree (Bigbie & McCarroll, 2000; Peak Group, 2002; Lary, 2002).

The majority of online learners are sophomores, juniors, or seniors and mostly
college bound (Peak Group, 2002). Students successful in online courses are often highly
motivated, independent learners, have a greater sense of responsibility, and are high
achievers in their traditional courses (Keegan, 1996; Kozma, et al., 2000). Given
instruction of equal quality, students taking courses online generally achieve at levels
equal to students in traditional courses (Kearsley, 2000). “Evidence to date convincingly
demonstrates that, when used appropriately, electronically delivered education— e-
learning — can improve how students learn, can improve what students learn, and can
deliver high-quality learning opportunities to all children” (National Association of State
Boards of Education, 2001, p. 4). Many studies have reported no significant differences
between distance learning and traditional education in academic achievement
(Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004; Goc Karp & Woods, 2003;
Jordan, 2002; Kozma et al., 2000; Mills, 2002). Students in online courses have showed
greater improvement than their peers in traditional courses in critical thinking, decision
making and time management (Barker & Wendel, 2001; Warschauer, 1997).

Some of the most recent achievement data available demonstrates how students in
online courses compare with traditional courses. The Virtual High School, Florida Virtual
School, and Apex Learning all report their students receive a passing score of 3 or higher
on Advanced Placement exams at a rate higher than the national average. A score of 3 or
higher would allow students to earn college credit for high school Advanced Placement
courses (Smith, Clark, & Blomeyer, 2005).

Successful distance learners are often skilled in their autonomy, or their ability to
be independent, self-regulated learners (Keegan, 1996) and have a greater sense of
academic responsibility (Wedemeyer, 1981). As younger students commonly do not have
the degree of independence and discipline of older students, teachers of online courses
must be able to help students develop the skills of autonomous learning and self-
regulation. Expert learners have a well developed metacognition, a characteristic that is gradually developed in children (Bransford, Brown, & Cocking, 1999).

*Cognitive and Social Development*

Piaget’s stages of cognitive development: the preoperational (2 to 7 years), concrete operational (7 to 11 years), and formal operational (11 years to adulthood) encapsulate the major phases in development from toddler to adult. Each is characterized by the emergence of new skills, abilities, and ways of processing information (Slavin, 2003). The two latter phases may guide pedagogical methods for delivering effective online education to high school students. Instructional content should be sensitive to these stages of development and build on students’ accomplishments through the cognitive stages. Student in the concrete operational stage may benefit from interactive drag-and-drop manipulations and simulations. By the formal operational stage, students are ready to use symbols, language, and graphic representations to learn in more abstract ways.

Vygotsky (1978) emphasized the importance of social interaction in helping people think, communicate, and solve problems, suggesting that our cognitive development is strongly linked to the interactions we have with others. “Vygotsky’s theory implies that proper cognitive development and the ability to use thought to control our actions first requires a firm grasp of communication systems and how to use those systems to control thought processes” (Slavin, 2003, p. 43-44). It follows then that online courses be designed to capitalize on the Internet’s powerful tools for communicative and collaborative learning within students’ zone of development.
Benefits of Online Learning

Benefits for Students

Several of the most common situations cited in the literature in which online learning improves students’ learning opportunities include: courses are not offered by the traditional school, particularly Advanced Placement courses; courses are offered but do not fit into a student’s schedule; remedial courses are needed for credit recovery; courses are offered that better fit the student’s need for self-paced study (Clark, 2001; Peak Group 2002; Rourke, 2001).

In addition to the increased breadth of courses which could be offered, students also benefit from the increased flexibility of being able to work through courses when their schedule permits. It has already been shown that nearly all schools have Internet-enabled computers in almost every instructional classroom (Wells & Lewis, 2006). This permits students to work before, during, or after school hours. In many cases, students can work at a pace that is more conducive to their own style of learning. Online learning carries minimal spatial restraints associated with the traditional classroom which means learning can occur away from school as well. This flexibility in spatial and temporal limitations has been cited by students as the biggest advantage of online learning opportunities (Podoll & Randall, 2005).

Student experiences and interactions with online courses are important indicators of their effectiveness. Students working on their own time, at their own pace, learn how to work independently and manage their time efficiently (National Association of State Boards of Education, 2001). Learning becomes more student-centered as problem solving
and inquiry must occur in order to proceed through course materials (Peterson, 1996). Students report that there is a strong degree of bonding among students and with teachers as they get to know each other in a real sense through regular correspondence in on-line courses. In addition, students report decreased levels of competition among learners (McLellan, 1998; Podoll & Randle, 2005; Roberts, 2000). Students also commented that Internet-based courses provided more access to instructors and peers than traditional settings (Bork, 1995; Chute et al., 1997; Roberts, 2000).

Students report having developed social as well as academic skills through the evaluation and sharing of knowledge and considering various points of view (Brogan, 2000; McInnerney & Roberts, 2004; Vonderwell, 2003). There are concerns that online learners are isolated from their peers and thereby do not develop the social skills of students in traditional classrooms (Kreijns, Kirschner, & Jochems, 2003; McInnerney & Roberts, 2004). More research is needed to decipher the amount, quality, and nature of the social interaction that occurs in online courses and the effects those interactions have in the long term.

Society is dominated by technology today. Potential employees must have the basic technical literacy skill necessary to be successful in today’s workforce. Students who experience high-performance technological environments are better suited to make successful transitions to the workplace (Draves, 2001; Roberts, 1996; Rourke, 2001). The state of Michigan is currently finalizing legislation that would require every high school student to take an online course before graduation in order to prepare its students for the
technical experiences they will likely encounter when working in the digital world (Higgins, 2006).

Ally (2004) summarizes the important perspectives of behaviorist, cognitivist, and constructivist viewpoints and how they are commonly applied in the online learning. Online exercises that use testing and feedback mechanisms coincide with teaching facts, or the ‘what’, and fall beneath the behaviorist view of learning. Practice and repetition change observable behavior as patterns in cause and effects of actions are recognized. A cognitivist focuses on how the mind structures complex learning processes and principles by making connections that help explain the ‘how.’ Various learning strategies may be employed that support different kinds of learners and learning styles. Learning the ‘why’ often is best fostered by a constructivist approach. Several researchers have shown that constructivist instructional environments are correlated with increased learning (Becker, Ravitz, & Wong, 1999; Nicaise & Barnes, 1996; Shepard, 2000; Smith & Shapson, 1999). Phrases such as ‘student-centered’, ‘student-directed’, ‘collaborative classrooms’, and ‘authentic learning’ are used to describe the nature of these learning environments. Learners are encouraged to construct their personal understanding and meaning through interaction within a situational context. Learning then, is the process of adjusting our current understanding of the world to accommodate new experiences (Brooks & Brooks, 1993).

When designed to use many interactive and engaging recourses, online learning is often an active, constructive, and cooperative experience than a traditional classroom experience (Cavanaugh et al., 2004). Tools like idea mapping applications, 3-D models,
and simulations, are usually presented effectively through multimedia technology than with textbook or chalk board, help learners construct meaning of abstract concepts and phenomena and strengthen meta-cognitive abilities (Duffy & Jonassen, 1992).

The No Child Left Behind Act (NCLB) uses standardized testing to assess changes in student skills. The NCLB and the guidelines for research and evaluation provided the U.S. Department of Education supporting the NCLB, are primarily grounded in objectivist (behaviorist and cognitivist) theory (Smith, Clark, & Blomeyer, 2005). Though NCLB is focused on academic achievement, teachers have considerable leeway in the processes and tools used to reach those academic goals. Teachers that subscribe to a more constructivist view are often more willing to utilize diverse technologies to keep students actively engaged in the learning process (Jonassen, 1998). This requires an open mind toward using new technologies and techniques to customize the learning process to fit the particular needs of the student. Online learning provides another tool available to engage students when the school is unable to offer supplemental, yet essential courses like Advanced Placement, which enrich the learning environment of students who are not being challenged.

Benefits for Schools

The benefits of online learning extend beyond that of the student to the school and school districts. Early on, districts realized that distance learning technologies could ease the demand on teachers for teaching a broader range of courses (Tunstall, 1995). Berman (1999) noted that online programs provide schools the ability to offer greater numbers of electives, Advanced Placement, dual-credit, and alternative high school curriculum
courses, without having to modify or add to any of the existing technology within the building.

With districts facing diminishing budgets, it is critical that schools maintain their enrollments. If students are leaving the district because their needs are not being met, and enrolling in virtual charter schools or other independent online course providers, the district loses the state funding for those students (Wascoe, 2005). By enhancing local course offerings through online courses, districts may improve student retention of students who might move to a district that better serves their needs (Friederich, 2007). Furthermore, districts may attract homeschoolers to take one or more online courses through the district, which would bring additional funding to the district (Barton, 2004; Wascoe, 2005).

**Issues to be Addressed**

There is much debate, and little research, regarding the effectiveness of online courses at the secondary level (Jaycox, 2004). Effectiveness is most commonly assessed using achievement, either by way of course grade or standardized achievement test, but evaluating success is a difficult endeavor (Vrasidas, Chamberlain, & Zembylas, 2003). Just like the technologies discussed earlier, web-based distance learning is now undergoing the same scrutiny.

Examples of online learning falling short of expectations are reported as well. In online learning environments, students may feel isolated (Marcel, 2003; McInerney & Roberts, 2004); there are concerns about social development (Hurst & Thomas, 2004; Vonderwell, 2003); students having difficulty with language or reading may experience
difficulties in a primarily text-based learning environment (Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004); and subjects which require physical demonstrations of aptitude like art or music may not be practical in a virtual setting (Bond 2002;). Students in online courses have shown less improvement in listening and speaking skills (Barker & Wendel, 2001).

Transactional Distance Theory

Moore’s Transactional Distance Theory (1993) addresses the complications associated with distance learning. Moore argues the issue is not simply the geographic separation of student and teacher, but a larger pedagogical one. What needs to be considered in distance learning is the “psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner” (p. 23).

Transactional distance in distance learning is a continuous variable consisting of three key variables: structure, dialogue, and learner autonomy. Moore (1993) clarifies again these three variables “are not technological or communications variables, but variables in teaching and in learning and in the interaction of teaching and learning” (p. 22). Structure is dependent on the actual structure of the course and the extent of its rigidity or flexibility from a student’s perspective. Dialogue is defined as a purposeful, positive and valued interaction by each party involved. Learner autonomy is the extent to which the student is rather than the teacher is determining the goals, learning experiences, and evaluation procedures.
Given the relative and continuous nature of transactional distance, there are an infinite number of combinations in which structure, dialogue, and learner autonomy may interact (Jung, 2001). Gorsky and Caspi, (2005) summarize some of the common relationships among variables: dialogue and transactional distance are inversely related, that is, as dialogue increases, transactional distance decreases; increased structure decreases the amount of dialogue which in turn decreases the transactional distance; transactional distance and learner autonomy are directly related, that is, as structure increases and dialogue decreases, students must exercise greater autonomy. Additionally, transactional distance is directly related to the size of the learning group. The theory may ultimately be reduced to the following: structure and autonomy both affect the extent of dialogue which in turn is directly related to the transactional distance (Gorsky & Caspi, 2005).

The Transactional Distance Theory may provide a useful conceptual framework for understanding the dynamics of distance learning, and specifically, how it relates to online learning today. Given the goal is to minimize the transactional distance in online learning and how it is affected by dialogue, instructional designers need to consider how autonomy and structure alike affect the amount of dialogue. Online courses today offer greater opportunities for dialogue between the teacher and learner and among leaders, which in turn, reduces the transactional distance. Students and teachers may interact with electronic mail, Internet chat sessions, real-time Internet broadcasts, and discussion boards. All of these methods increase the opportunity for dialogue and reduce the transactional distance.
Few educators would deny that “the optimal learning environment situation still involves the physical presence of a teacher” (Conzemius & Sandrock, 2003, p. 47). The technologies available which facilitate dialogue, communication, and collaboration, have helped to make an online course a legitimate media for instruction and learning. There appears to be enough preliminary evidence in the literature to support the argument that students can benefit from having the opportunity to broaden their education by having the option to participate in online learning experiences when the traditional classroom is unavailable (Clark, 2001).

**Implementation Barriers**

It has been shown that online learning can be beneficial for the student as well as the school. It is yet another tool in the educator’s toolbox to enhance the educational experience for students who would benefit by an educational opportunity otherwise not available to the students. Even if school administrators believe in the benefits and potential of the technology, they still may face barriers inhibiting the successful implementation of an online program.

**Resistance to change**

The idea of change in the traditional education system can be a frightening thought in and of itself. From the beginning of education in the United States, students came to a brick and mortar structure where they were taught by a qualified teacher. Substantial deviation from that model is naturally uncomfortable for the uninitiated (Horn, 1997). Teachers steeped in traditional behaviorist theory may not agree with the way theories are employed in today’s online coursework. Ally (2004) summarizes
behaviorist, cognitivist, and constructivist theories, highlighting the overlap between the concepts and how all three are often included in online learning designs. Education does not adapt well to rapid change, especially in ways of practice. The more innovative a new approach or method is, the stronger it is resisted by the status quo (Hodas, 1993). The development of technology is steadily increasing while the embracing of new technologies by educators is slow at best. There is constant pressure and potential for any gap between technology and education to increasingly widen.

Aversion to technology

Some educators may resist implementing online learning simply due to their aversion to technology (Hodas, 1993). Thoughts of having to learn to use new tools, accepting them as viable additions and/or alternatives to the traditional classroom, and not knowing the impact it will have on their careers in the future all may be sources of stress and anxiety (Ehrlich & Dworzecka, 1997).

Funding

Another potential barrier to the implementation of online learning programs surrounds issues related to funding. There are several occasions where financial burdens may restrict offering online learning programs. Though most schools have Internet access, they may not have suitable numbers of computers, or staff to maintain the computer systems (Muilenburg & Berge, 2001). If schools intend to offer local online courses, teachers must be given the resources to develop courses as well as the technical training to deliver them. If schools join a virtual school consortium, yearly service contracts may be required in order to receive technical support. If the school purchases a
course and teacher from an external provider, course enrollment fees are approximately $300 per student per semester (Watson, 2005). All of these possible expenditures may seem impractical and prevent school administrators from deciding to implement an online learning program.

The sixth annual State of Poverty in Ohio report was released February 10, 2004, by the Ohio Association of Community Action Agencies (www.ceogc.org). The most recent data shows that Ohio has lost 228,656 jobs during the 2001-2004 Ohio recession. This equates to the loss of 1 in every 24 jobs, and the loss of paychecks for hundreds of thousands of Ohio workers. The Ohio Department of Education reported for the 2005-2006 year that the top 20 poorest school districts in the state are all in the 29 county Appalachian region (www.ode.ohio.org). People living in nearly half of these districts reported a decrease in real mean income on tax returns over a two year period (2000-2002). The current depressed economic state of the Appalachian Ohio school districts coupled with decreased employment and wage levels in the region may pose a seemingly insurmountable barrier for schools to invest their limited resources in online learning opportunities and programs.

Other barriers

More than a decade ago, Melmed (1994) suggested that state regulation, financial restrictions, social implications, and need for local consent for innovative decisions were all barriers to change in education. Other barriers include: course development, professional development, and competition (Augustine-Shaw, 2001; Clark, 2001; Muilenburg & Berge, 2001; Shoemaker, 1997). Each of these factors may effectively
influence administrators’ decision whether or not to offer online learning opportunities. Course development requires an enormous amount of time on the part of the developer, often the teacher (Oblender, 2002; Tinker, 2001; Zucker & Kozma, 2003). Online teachers and mentors need to be trained in how to teach and manage online courses, taking additional time and money (Oblender, 2002; Parsad and Jones, 2005; Smith, Clark, & Blomeyer, 2005; Tinker, 2001). Careful consideration of a school’s or district’s available resources will help administrators decide whether or not to invest in an online program (Muilenburg & Berge, 2001). It may be helpful during the decision making process to compare their situation with other schools that have made similar decisions.

Examples of Previous Research

Augustine-Shaw (2001) examined influences on and issues involved with implementation of the virtual school in Kansas’ public schools. Augustine-Shaw bases her study on the basic tenet that society is accelerating toward an information and communication-based environment (Gates, 1999; Toffler & Toffler, 1995). This rapid change in society is occurring faster than public schools can respond to the change (Perelman, 1992). The survival of public schools will ultimately lie in their ability to keep pace with this constantly changing environment (Reigeluth & Avers, 1997).

The virtual school is one way to address the constantly changing needs of education in today’s technological society (Berman, 1999). A virtual school is a learning environment that only exists on the Internet, but assumes the responsibilities of a traditional school (Paulsen, 1988). It is unconstrained by time, space, geographic position, and can support the exchange of vast amounts of information and collaboration
on a global scale. The virtual school breaks down the concept of the traditional classroom and its physical restraints, and opens up real world explorations of information and communication with others (Hackbarth, 1997).

Augustine-Shaw (2001) considered the superintendent’s leadership role in the educational setting to be critically important to the successful implementation and adoption of any new technologies.

The ability of superintendents to plan effectively for implementation for new technological environments such as the virtual school is demonstrated through their support of the learning organization, their ability to manage systemic change and their ability to recognize effective patterns of adoptive behavior (Bandura, 1995; Senge, Kleiner, Roberts, Ross, & Smith, 1994, p.83).

Changes dictated at the administrative level are necessary for education to remain competitive during the information age (Web-Based Education Commission, 2000). With this information, it appears the superintendent plays a considerable role in the decision making processes related to the implementation and adoption of new technologies within their educational systems.

Augustine-Shaw (2001) surveyed 263 superintendents, with an 87% response rate, regarding virtual school environments in Kansas K-12 public schools. In developing the survey, Augustine-Shaw first constructed items based on a review of the literature, Kansas State Department of Education (KSDE) guidelines, and focus group responses involving public school superintendents. Given this information, the researcher constructed survey items reflecting respondents’ perceptions about the purposes of virtual
schools, the environment provided by virtual schools, challenges to virtual school implementation, policy requirements and changes, and the role of superintendents in the development of virtual schools.

Augustine-Shaw (2001) then conducted a two-stage pilot of the collected items by mailing them to 12 district-level administrators in districts of varying sizes across the state of Kansas. The second stage of review by 11 expert panel members consisting of technology directors, university professors with experience in technology and questionnaire design, KSDE agency leaders in technology, and directors or administrators of virtual school models in the U.S. With response rates of 67% and 82% for the first and second stages of the pilot, respectively, minimal changes were made to the questionnaire by “eliminating confusing formatting and rewording several items for clarity of meaning” (Augustine-Shaw, 2001, p. 117).

Augustine-Shaw’s survey tool consisted of 50 closed-ended items and 2 open-ended items addressing issues of virtual schools. To address questionnaire reliability, responses to the survey were analyzed using a Hoyt’s (1941) analysis of variance procedure. The measure revealed a moderate internal consistency of .83.

The questionnaire was examined using factor analysis to explore the empirical relationships among the items and to assess construct validity. Augustine-Shaw (2001) reported: “face and content validity of questionnaire items were supported by their match to issues raised in focus groups and information derived from the literature review. In addition, “the questionnaire was sent to a panel of expert reviewers who confirmed the face and content validity” (pp. 124-5).
Heidlage (2003) adapted the Augustine-Shaw (2001) survey and called it the *Principal Virtual School Survey*. Heidlage was interested in studying trends of secondary Catholic schools and their use of online learning. Heidlage used the term ‘virtual school’ to include any for-credit high school courses delivered via the Internet. By 2000, only one study had considered Catholic school involvement in online learning (Tyre, 2000). At that time, only 8.6% of students (K-12) were participating in online learning. After determining from the research that for Catholic schools, the principal was a significant decision maker regarding technology, items referring to superintendents in Augustine-Shaw’s survey were changed to refer to principals (Hunt, Joseph, & Nuzzi, 2002). Additionally, items more pertinent to the public sector were omitted. The revised survey was mailed to a pilot group of eight Greater Kansas City area Catholic secondary principals. Responses were received from seven principals with no suggestions for changes. This further assured Heidlage of the face validity of the adapted survey, while also relying on the reliability and validity of Augustine-Shaw’s original instrument.

Heidlage’s (2003) Principal Virtual Survey consisted of 44 closed-ended items and 2 open-ended questions. The first six closed-ended items regarded school demographic information which were used to identify various characteristics of the schools. A Likert scale ranging from “Strongly Agree”, given a value of “4”, to “Strongly Disagree”, given a value of “1”, was used to measure responses to the remaining closed-ended items. The values were analyzed to determine percent of responses, mean scores, standard deviations, and ranges. Two open-ended questions were included at the end of the survey to offer participants the opportunity to elaborate on recommendations and
offer additional information not included in the closed-ended items. As a result of two mailings, a total of 88 principals responded to the survey for a final return rate of 66.2% and was “considered excellent for the purposes of this study” (Heidlage, 2003, p. 37).

**Summary**

Evidence in the literature traces the evolution of technology used in education, especially to aid in distance learning, and specifically in online learning. As with every new technological tool, adoption is often slow with proven methods being implemented only after considerable scrutiny by the status quo. With any new educational application of technology, data is gathered regarding the feasibility of implementation, maintenance, and management of the technology. Research is conducted to investigate the benefits and pitfalls of the technology on learning, often times measured by achievement alone. Though online learning has shown to be a successful alternative to the traditional classroom, there are still many potential barriers preventing schools from participating in online learning programs. Regardless of the implementation model for online learning, the goal is to provide each student with access to the broadest range of courses in order to most deeply enrich their learning experiences.

The study intends to understand the current perceptions and experiences of high school administrators in the Appalachian region regarding the place of online learning in today’s educational system. In addition, the study purposes to determine the major factors either facilitating or inhibiting participation in online learning for this region.
CHAPTER 3: Methodology

Primarily, this study used quantitative data collection methods to address the research questions. The quantitative data collection was acquired using a Likert-type survey distributed to all public high school principals and district superintendents within the Appalachian counties of Ohio. The only qualitative data collected were the three opportunities in the survey for open-ended responses. Obtaining a considerable number of responses to the open-ended items and having repeat responses to these items, increased the validity and credibility of the study’s results (Patton, 1990). Miles and Huberman (1994) supported this position by stating both numbers and words are important in exploring and understanding the world.

Participants

Costello (1997) stated that the role technology will play in schools is dependent on the ability of school leaders to exemplify the effective use of technology in education. Superintendents and principals are considered to play key rolls in determining the overall effectiveness of public schools, including the decisions to integrate new technology (Coffland & Strickland, 2004; Shuldman, 2004; Ubben & Hughes, 1997). Davidson and Mauer (1995) gave the strong recommendation that principals should not delegate instructional technology to other staff, but be leaders in its implementation. Principals should be “leaders of leaders rather than sole leaders” (Crow, Mathews, & McCleary, 1996, p. 44). Supovitz and Turner (2000) found teachers who felt supported by their principal were more likely to accept classroom reform changes than teachers who did not feel supported. There is evidence that teacher attitude toward computers is directly
related to their principal’s attitude toward computers (Coffland & Strickland, 2004). There is also evidence that teacher success in learning about technology is partially dependent on a positive attitude toward technology (Savenye, 1993).

Though there is little research on public school superintendents (Grogan, 2000; Mullen & Keedy, 1998; Shuldman, 2004), one of the position’s roles is to support their principals as instructional leaders (Grogan, 2000). In doing so, their educational perspective may indirectly impact the student learning environment. There also is little research to address how superintendents’ perspectives on technology may ultimately affect the classroom experience. It is believed superintendents are responsible for ensuring their principals understand expectations and lead all teachers toward desired ends, including the implementation of new technologies (Shuldman, 2004).

There are 29 counties in Southeastern Ohio named in the Appalachian region legislation (Figure 3.1). Currently, there are 129 school districts within those counties. As several districts have more than one high school, there are a total of 134 high school principals in the region. Because this study is interested specifically in the Appalachian region, and because the maximum accessible population is not extremely large, all principals and superintendents in the population were included. That is, with 100% response to the survey, the population would have been 129 and 134 for superintendents and principals, respectively.
Figure 3.1. *The 29 Appalachian Ohio counties and number of high schools per county.*

*Map reprinted with permission (Appendix A).*

A surface mailing list for all high schools and district superintendent offices was generated from the Ohio Department of Education website (www.ode.ohio.org). This was accomplished by hand-selecting the 29 Appalachian Ohio region counties from all Ohio counties listed on the website. Executing each query returned all districts and schools within the selected county. This same process was repeated to create a second reference list from QED’s State School Guides (www.qeddata.com) and compared with the Ohio Department of Education list. Discrepancies were examined and ultimately cross-
referencing with a hard copy of the current Ohio Educational Directory (2005-2006). Telephone calls were made to schools and districts with conflicting information among the several reference lists.

Research Questions

The research questions of the current study were very similar to that of Augustine-Shaws (2001) and Heidlage’s (2003), but explored different target populations. Whereas Augustine-Shaw and Heidlage were studying the purpose of online learning from the perspective of Kansas public school superintendents, and Catholic high school principals, respectively, the first research question in the current study examined the utility of online learning as perceived by Appalachian Ohio public school superintendents and high school principals using survey items #2-13 (Table 3.1).
<table>
<thead>
<tr>
<th>Research Questions:</th>
<th>Instrument Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What utility does online learning have in public education today, as perceived by Appalachian Ohio high school principals and district superintendents?</td>
<td>#2 - 13</td>
</tr>
<tr>
<td>2. What characteristics associated with online learning do Appalachian Ohio high school principals and district superintendents believe impede or facilitate it being used as a viable educational alternative to the traditional classroom?</td>
<td>#14 - 32</td>
</tr>
<tr>
<td>3. What issues must high school principals and district superintendents address before implementing an online learning program in Appalachian Ohio public high schools?</td>
<td>#33 - 43</td>
</tr>
</tbody>
</table>

The two researchers’ questions regarding the issues or factors that support or impede the implementation of virtual schools is addressed by the second research question in the current study with survey items #14-32, regarding the characteristics associated with online learning that impede or facilitate its use. The two previous researchers’ questions regarding the requirements or minimum conditions to be met before online learning could be implemented was explored in the current survey with items #33-43. This addressed the
third research question in the current study regarding the issues principals and superintendents must address before implementing an online learning program.

Like Augustine-Shaw and Heidlage, the current researcher understands that district superintendents and high school principals are important forces in deciding whether or not to implement online learning programs in the schools they administrate. As stated in the delimitations of the study, this is not to say they are the only forces at work in the use of online learning. This study was limited to investigating the important role this group of public school administrators played in the implementation and adoption of online learning at the secondary education level.

The first research question regarding the utility of online learning as perceived by principals and superintendents will be addressed in the survey with items #2-13 (Table 3.1). These items relate to the usefulness of online learning as perceived by administrators who play a significant role in planning and implementation of secondary educational programs. How strongly the respondents agree or disagree to these items corresponds to the perceived utility of online learning. This section does not address whether or not they are currently employing or plan on employing an online learning program, rather it provides some insight into what they perceive the utility of online learning to be. For example, a majority of respondents may strongly agree a justified use of online learning is to give students the “opportunity to take a wider variety of Advanced Placement courses” (item #5), but that does not entail that they are using or plan to implement an online learning program. This section of the survey will help describe the perceived utility of online learning for the population.
The second research question regarding the characteristics associated with online learning that impede or facilitate its use as a viable educational alternative to the traditional classroom will be addressed with survey items #14-32 (Table 3.1). This section includes items of factors that may either facilitate or impede the implementation of an online learning program. For example, if a relative large number of respondents strongly agree that online learning ‘incurs an unjustified financial burden on local high schools,’ it would follow that this is a factor that impedes the implementation process, or was a considerable barrier to be overcome during the implementation of an online learning program. This does not imply that those respondents have not implemented an online learning program, but does illuminate the factor as a barrier to implementation, and an item that should be included in the summary of factors that are a burden to implementing an online learning program.

The third research question regarding issues that must be addressed before implementing an online learning program corresponds with survey items #33-43 (Table 3.1). These items primarily relate to policy issues that must be addressed before implementing an online learning program. For example, if a relatively large proportion of respondents are concerned about online learning taking the place of the traditional curriculum or that students should be spending the majority of their time in a traditional classroom, they may agree that a “policy limiting the number of online courses students can enroll in each semester” (item #36) needs to be established before implementing an online program. Items in this section that are relatively more agreed with should be
included in a summary of policy issues to be addressed before implementing an online program.

**Instrumentation**

The survey instrument for this study was adapted, with permissions (Appendix B), from the original *Superintendent Virtual School Questionnaire* (Augustine-Shaw, 2001) and from Heidlage’s (2003) more recent adaptation, *Principal Virtual School Survey*.

In order to retain the validity and reliability of the instrument established by the two previous researchers, minor changes were made to Heidlage’s instrument. The current study implemented the Principal Online Learning Survey (POLS) and the Superintendent Online Learning Survey (SOLS). The changes from Heidlage’s instrument involved replacing the references to ‘virtual school’ with ‘online learning.’ The difference in interpretation of meaning between the two phrases is that in the former, the student does not attend a traditional school or classroom during the day, whereas with the latter, students may take one or two online courses in place of or in addition to their traditional courses. The POLS and SOLS consisted of 39 closed-ended questions, and three open-ended questions. Superintendents were asked to respond to four demographic questions and principals were asked to respond to six demographic items. The principals were asked specific questions about their high school, which were not relevant to superintendents.

The POLS and SOLS were mailed to 14 experts in the field of online learning and survey design, and educational administrators before distributing to the entire population
of superintendents and principals (Appendix C). Of the 14 surveys mailed, 11 surveys were returned with comments. Based on the comments and recommendations, several formatting changes were made including: rewording items and instructions for increased readability, moving the demographic data items to the end of the instrument, moving relevant open-ended questions from the end of the survey to the end of each section of closed-ended items, and collapsing the two sections of items addressing the factors that impede or facilitate online learning into one section of characteristics of online learning (items #14 – 31).

Advanced notification of the survey was announced via post cards sent out to all superintendents and principals on March 31, 2006 (Appendix D). POLS and SOLS were coded with a tracking number and mailed out to 143 principals and 129 superintendents April 7, 2006, requesting a response within two weeks (Appendix E). The cover letter enclosed with the surveys emphasized the importance of the recipients as key leaders and decision-makers regarding technology and learning in their schools (Appendix F). Also included in the cover letter was a statement about the significant financial ramifications this study may have for the region, and hence, the importance of their timely responses. Lastly, a letter from Richard Fisher, Director of the Coalition of Rural and Appalachian Schools, encouraged recipients to respond to the survey (Appendix G). One week following the first mailing, a reminder card was sent to non-responders asking for the participation (Appendix H). One week from the reminder mailing, a complete survey packet was again mailed to non-respondents. Two weeks following the second mailing, complete survey packets were sent to the remaining non-respondents. Survey recipients
were told they would be entered in a drawing to receive one of four USB drives if they completed and returned the survey. Winners were notified on July 25, 2006 (Appendix I).

Although there is no absolute criterion for determining what constitutes a sufficient response rate, the literature does report a response rate of 50% to be adequate, 60% to be good, and 70% to be very good (Babbie, 1998). More recently, Shutt (1999) claimed "a response rate below 60 percent is a disaster" (p. 254), primarily due to the significant role non-response bias has on interpretation of results and how closely those interpretations represent the entire population (Hager, Wilson, Pollak, & Rooney, 2003).

Two hundred sixty three surveys were sent to all district superintendents and high school principals within the twenty nine Appalachian Ohio counties. Response rates for the superintendents (N = 91) and principals (N = 99) were 71% and 74%, respectively. For all those who responded, 21% of superintendents and 29% of principals provided feedback for at least one of the three open-ended items. The majority of returned surveys were received following the first mailing. More superintendents (77%) than principals (62%) responded to the first survey mailing. Both second and third mailings resulted in fewer returned surveys. Combining both groups of respondents, 70% of all respondents answered the first mailing, 23% responded to the second mailing, and 7% returned the third survey mailing.

Data Analysis

As this was primarily an exploratory study, the descriptive statistics of the four-point Likert scale survey items (1 = strongly agree to 5 = strongly disagree) included percentage response rates, mean scores, standard deviations, and ranges. All qualitative
data obtained through open-ended survey questions were compiled and coded to discover emergent themes. Both types of data were used to address the three research questions.

Quantitative methods attempt to answer the “what” research questions (Bryman, 1984). By investigating something that is quantifiable, or can be measured, the researcher can conclude the current state of the measured variable. The use of quantitative methods allows the researcher to gather responses to questions from a large population, and through statistical analyses, identify patterns within a population (Patton, 1990). Ultimately these patterns could be compared to other populations in order to better describe some phenomenon. Quantitative analysis permits the aggregation and summarization of large amounts of data in a manageable fashion (Babbie, 1998).

Qualitative methods attempt to answer the ‘why’ research questions (Bryman, 1984). These questions often involve the reasons or causes for the current state of some variable. Qualitative methods generally contribute a deeper and more personal account of subjects’ perspectives on a topic than quantitative methods (Erlandson, Harris, Skipper, & Allen, 1993). Qualitative methods aim to capture rich sources of data that help describe attitudes, points of view, thoughts, and emotions (Patton, 1990). Qualitative methods provide much more open-ended, thick, descriptive data, emphasizing the context of the environment in which the subjects are involved (Erlandson, 1993).

In many cases, statistical procedures are used to generalize from a sample to the entire population. In the current study, quantitative statistical analyses were limited to descriptive statistics as the intended “sample” was in fact the entire population (Appalachian Ohio public high school principals and district superintendents). Using
descriptive statistics (means, modes, ranges, standard deviations, and minimum and maximum values), the “current” state of online learning in Appalachian Ohio high schools was described. The study aimed to provide information about a population which has not been reported in the literature. No explicit attempt was made to determine causality with this research method.

The open-ended survey questions provided an opportunity for respondents to elaborate on their perceptions of online learning. The considerable amount of qualitative data collected helped understand why respondents held particular perceptions. This data was be coded and analyzed to identify emergent themes. The data was broken down into the smallest unit of meaning, organized into categories, and then the categories were collapsed into themes (Erlandson et al., 1993; Lincoln & Guba, 1985). The method of categorizing data and identifying themes is the foundation for construction of a grounded theory. In this way, theories may emerge from, and be substantiated by the data (Erlandson et al., 1993). Including both types of data in the current study not only produced a description of the current state of online learning for the research population, but in some cases aided in explaining why the current conditions exist.

Summary

The research design is a systematic plan for investigating a particular question that includes: formulating a strategy for addressing the particular question, collecting the relevant data, processing and analyzing the data, and dissemination of the interpreted results. This research was an exploratory study which used quantitative and qualitative
data to address the research questions. Descriptive statistics were used to analyze the quantitative data and qualitative data were categorized to identify any emergent themes.
CHAPTER 4: Results

The purpose of this study was to describe the use and perceptions of online learning programs in Appalachian Ohio high schools, as perceived by district superintendents and high school principals. Each willing participant completed and returned an adapted survey used in past research projects (Augustine-Shaw, 2001; Heidlage, 2003). This chapter begins with a description of survey respondents and schools. Then the results of the administrators’ perceptions of online learning for the closed-ended survey items are reported. Next the results of the administrators’ perceptions of online learning when sorted by implementation status (adopter, considering, not considering) are presented. The responses to the open-ended survey items follow. A summary concludes the chapter.

Survey Response Patterns

Two hundred sixty three surveys were sent to all district superintendents and high school principals within the twenty nine Appalachian Ohio counties. Response rates for the superintendents (N = 91) and principals (N = 99) were 71% and 74%, respectively. For all those who responded, 21% of superintendents and 29% of principals provided feedback for at least one of the three open-ended items. The majority of returned surveys were received following the first mailing. More superintendents (77%) than principals (62%) responded to the first survey mailing. Both second and third mailings resulted in fewer returned surveys. Combining both groups of respondents, 70% of all respondents answered the first mailing, 23% responded to the second mailing, and 7% returned the third survey mailing.
Description of Respondents and Schools

Administrator Experience

The researcher's target population was all superintendents and high school principals within the 29 Appalachian Ohio counties. A descriptive analysis of school demographics was used to describe the participants in the study. Table 4.1 includes the descriptive statistics related to the total number of years respondents have held superintendent and principal positions. Standard deviations are reported within parentheses in the text of this chapter. The mean total number of years respondents had held a superintendent position (item #44) was 7.58 (7.84) with a median of 5 (Table 4.1, Figure 4.1). The mean total number of years respondents had been a high school principal was 8.27 (6.39) and median of 6.5 (Table 4.1, Figure 4.2).

Table 4.1

Survey Respondents: Total Years of Experience

<table>
<thead>
<tr>
<th>Position</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superintendent</td>
<td>89</td>
<td>7.58</td>
<td>7.84</td>
<td>5.00</td>
<td>0.5-39</td>
</tr>
<tr>
<td>Principal</td>
<td>99</td>
<td>8.27</td>
<td>6.39</td>
<td>6.50</td>
<td>1-38</td>
</tr>
</tbody>
</table>

Note. S.D. represents standard deviation.
Figure 4.1. Total number of years superintendents have been in the position.
School Size and Computer Access

The mean high school population (item #46) was 534.23 (305.07) students, a median of 450 students, and a range from 118 to 2004 students (Table 4.2). The mean number of computers with Internet access available to students at the high schools, as reported by principals (item #45), was 105.15 (57.56), a median of 100 computers and a range from 20 to 300 computers (Table 4.2, Figure 4.3). Dividing the number of students by the number of student-accessible computers provides a mean student to computer ratio which was 6:1 (4.52). The largest student to computer ratio was 28:1 and the smallest ratio was 2:1 (Table 4.2).
Table 4.2

*Student Populations, Student-Accessible Computers with Internet Access, and Student:Computer Ratios*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>99</td>
<td>534.23</td>
<td>305.07</td>
<td>450</td>
<td>118-2004</td>
</tr>
<tr>
<td>Computers</td>
<td>96</td>
<td>105.15</td>
<td>57.56</td>
<td>100</td>
<td>20-300</td>
</tr>
<tr>
<td>Student:Computer Ratio</td>
<td>96</td>
<td>6.24</td>
<td>4.52</td>
<td>5.02</td>
<td>2-28:1</td>
</tr>
</tbody>
</table>

*Note.* SD represents standard deviation.

Figure 4.3. *Total number of student-accessible computers with Internet access per high school.*
**Advanced Placement Courses**

The mean number of traditional Advanced Placement courses offered per high school, as reported by principals (item #47) was 2.89 (3.23) and ranged from 0 to 15 courses. Nearly 36% of respondents reported offering no Advanced Placement courses, while 50% reported offering two or fewer courses (Figure 4.4).

![Graph showing the distribution of traditional Advanced Placement courses offered by high schools.](image)

**Figure 4.4. Percent of principals reporting the number of traditional Advanced Placement courses offered at their high school (n = 98).**

**Online Course Participation**

High schools currently offering online learning options for students (item #1) comprised 55% of respondents, while those either considering such a program (13%) or those not currently offering online learning options (32%) comprised nearly half of the
respondents (Figure 4.5). When asked if they were previously aware that students could take online courses from school rather than at home, 97% of the superintendents (item #46) and 95% of the principals (item #48) answered 'Yes'.

![Bar chart showing percentages of adopter, considering, and not considering schools offering online learning programs, as reported by high school principals (n = 92).](chart)

Figure 4.5. Percent of adopter, considering, and not considering schools offering online learning programs, as reported by high school principals (n = 92).

Administrator's Perceptions of Online Learning – Closed-ended Items

The survey included 39 Likert scale questions related to superintendent and principal perceptions of online learning. Items were rated on a scale of 1-4, from strongly disagree to strongly agree, respectively. Questions were divided into 3 sections. The first section dealt with perceptions of the purpose or utility of online learning (items #2-12). The second section involved the perceived characteristics associated with online
learning (items #14-31). The final section included issues or policies that superintendents and principals felt must be addressed before implementing an online learning program (items # 33-42). At the end of each section respondents had the opportunity to comment on the items in that section and provide any additional input (items #13, 32, and 43).

Purposes of Online Learning

The first section of the survey asked principals and superintendents about the extent to which they agreed or disagreed with the 11 items related to the purpose or utility of online learning. The means and standard deviations for all of the items in this section can be found in Table 4.3.
Table 4.3

*To what extent do you agree or disagree that the purpose of online learning is to provide:*

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Prin.</th>
<th></th>
<th>Super.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. An opportunity to take courses not offered through your high school</td>
<td>3.29</td>
<td>0.79</td>
<td>3.37</td>
<td>0.50</td>
</tr>
<tr>
<td>3. An opportunity for a student to avoid a course scheduling conflict</td>
<td>2.73</td>
<td>0.87</td>
<td>3.02</td>
<td>0.53</td>
</tr>
<tr>
<td>4. An opportunity to take remedial courses</td>
<td>3.15</td>
<td>0.81</td>
<td>3.17</td>
<td>0.45</td>
</tr>
<tr>
<td>5. An opportunity to take a wider variety of Advanced Placement courses</td>
<td>3.13</td>
<td>0.91</td>
<td>3.38</td>
<td>0.53</td>
</tr>
<tr>
<td>6. Greater individualized instruction to better meet varying learning styles</td>
<td>2.45</td>
<td>0.85</td>
<td>2.55</td>
<td>0.58</td>
</tr>
<tr>
<td>7. To provide an alternative learning environment for students</td>
<td>2.99</td>
<td>0.80</td>
<td>3.14</td>
<td>0.35</td>
</tr>
<tr>
<td>8. Instructional services for homebound students (i.e., at home, but not by</td>
<td>3.23</td>
<td>0.61</td>
<td>3.16</td>
<td>0.25</td>
</tr>
<tr>
<td>choice)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Enhanced instructional services for special education students (including</td>
<td>2.72</td>
<td>0.85</td>
<td>2.88</td>
<td>0.53</td>
</tr>
<tr>
<td>gifted students)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. An opportunity for home-schooled students to take courses through your</td>
<td>2.52</td>
<td>0.92</td>
<td>2.75</td>
<td>0.77</td>
</tr>
<tr>
<td>school</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. A flexible learning opportunity for students to take courses (anytime,</td>
<td>2.88</td>
<td>0.80</td>
<td>2.91</td>
<td>0.50</td>
</tr>
<tr>
<td>anyplace)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. An opportunity to develop the skills needed to learn and work in a</td>
<td>2.71</td>
<td>0.87</td>
<td>2.95</td>
<td>0.56</td>
</tr>
<tr>
<td>technological society</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Survey Responses: Items #2-12. Prin = Principal, Super = Superintendent, M = mean, SD = standard deviation. 1 = Strongly Disagree, 4 = Strongly Agree.

Table 4.3
Mean levels of responses in this section ranged from 2.45-3.29 for principals and 2.55-3.38 for superintendents. Principals and superintendents answered similarly for several of the items in this section. Based on the mean scores, groups most strongly agreed on three purposes of online learning: to provide opportunities for students to take courses not offered through their schools (item #2), to take a wider variety of Advanced Placement courses (item #5), and to provide instructional services for homebound students (item #8). The mean scores of principals were highest for items #2 ($M = 3.29$, $SD = 0.79$) and #8 ($M = 3.23$, $SD = 0.61$). The mean scores of superintendents were highest for items #2 ($M = 3.37$, $SD = 0.71$) and #5 ($M = 3.38$, $SD = 0.73$). The modes for items #2 and #5 were both 4 (strongly agree) while the mode for item number #8 was three for both groups. Considering the percentage of respondents that either agreed or strongly agreed versus disagreed or strongly disagreed, the same two items ranked highest for principals with item #8 at 93% and item #2 received 88% approval (Figures 4.6, 4.7).
Figure 4.6. Percentage of principals’ responses to item #8, that a purpose of online learning is to provide instructional services for homebound students.
Figure 4.7. Percentage of principals’ responses to item #2, that a purpose of online learning is to provide an opportunity to take courses not offered through their high school.
Similarly, superintendents most agreed with item #8 (95%) and with item #5 (92%, Figures 4.8, 4.9).

![Bar chart showing responses to item #8](image)

**Figure 4.8.** *Percentage of superintendents’ responses to item #8, that a purpose of online learning is to provide instructional services for homebound students.*
Figure 4.9. *Percentage of superintendents’ responses to item #5, that a purpose of online learning is to provide an opportunity to take a wider variety of Advanced Placement courses.*

The only item in this section the principals agreed with more than the superintendents referred to online learning providing instructional services for homebound students (item #8). The principals agreed with this purpose with a mean of 3.23 (0.61) compared with a mean of 3.16 (0.25) for the superintendents. A slightly greater proportion of principals agreed or strongly agreed with this purpose (98%) than superintendents (95%).

Given that a mean score below 2.5 for any item represents more disagreement than agreement, the only item in this section principals disagreed with was the statement claiming online learning provided greater individualized instruction to better meet
varying learning styles of students (item #6). The principals slightly disagreed with the item with a mean score of 2.45. If the mode is used as the measure of central tendency, the principals disagreed with the item (Mode = 2). More than 55% of principals disagreed or strongly disagreed with the item. It also represents the item in this section over which principals were most evenly divided (Figure 4.10).

Similarly, this item received the lowest mean approval rating by superintendents (M = 2.55, SD = 0.76). With a mode of three, over 46% of superintendents disagreed with the
item, again representing the greatest division of agreement among superintendents and the item with lowest agreement rating in this section for the group (Figure 4.11).

![Figure 4.11. Percentages of superintendents’ responses to item #6, that a purpose of online learning is to provide greater individualized instruction to better meet varying learning styles of students.](image)

The items in this section the principals and superintendents most agreed on between groups was determined by rank ordering the absolute values of the difference between group means for each item. The mean difference between principal and superintendent levels of agreement for all items in this section was 0.15. The principals and superintendents answered most similarly with items #4 and #11. Item #4 stated a purpose of online learning is to provide an opportunity to take remedial courses. Item
#11 stated a purpose of online learning is to provide a flexible learning opportunity for students to take courses at any time and place. The differences in principal and superintendent means for items #4 and #11 were .02 and .03, respectively.

At the other end of the spectrum, the items standing out with greatest differences in level of agreement between the superintendent and principal groups, related to students avoiding course scheduling conflicts (item #3), an opportunity to take a wider variety of Advanced Placement courses (items #5), home-schooled students taking online courses through their school (item #10), and developing the skills needed to learn and work in a technological society (item #12). Nearly 66% of principals agreed that online learning should help resolve course scheduling conflicts, whereas over 79% of the superintendents agreed to the purpose. The difference between means for this item (#3) was 0.29. Regarding the use of online learning to offer courses to home-schooled students, 56% of the principals agreed to the purpose, while 66% of the superintendents agreed. The difference between means for item #5 was 0.25. The difference in means for the item involving home-schooling students (item #10) was 0.23. More than 56% of principals and 62% of superintendents agreed or strongly agreed with the item. Lastly, opinions between principals and superintendents differed regarding the use of online learning to develop the skills needed to learn and work in a technological study (item #12). The difference in the means for this item was also 0.23. Fewer principals (62%) than superintendents (74%) agreed or strongly agreed with this purpose.
Characteristics of Online Learning

The second section of the survey asked principals and superintendents about the extent to which they agreed or disagreed with the 18 items related to characteristics associated with online learning. The means and standard deviations for all items in this section can be found in Table 4.4.
<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Prin.</th>
<th></th>
<th>Super.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>14. Provides an opportunity to globally interact and share with students and experts</td>
<td>2.93</td>
<td>0.71</td>
<td>3.06</td>
<td>0.64</td>
</tr>
<tr>
<td>15. Increases inequities by relying on students' ability to access technological resources</td>
<td>2.60</td>
<td>0.67</td>
<td>2.77</td>
<td>0.76</td>
</tr>
<tr>
<td>16. Provides an opportunity to interact with other local high school students</td>
<td>2.59</td>
<td>0.81</td>
<td>2.82</td>
<td>0.71</td>
</tr>
<tr>
<td>17. Incurs an unjustified financial burden on local high schools</td>
<td>2.51</td>
<td>0.75</td>
<td>2.30</td>
<td>0.66</td>
</tr>
<tr>
<td>18. Diminishes parental involvement in students' educational experience</td>
<td>2.24</td>
<td>0.74</td>
<td>2.27</td>
<td>0.67</td>
</tr>
<tr>
<td>19. Incurs an unreasonable financial burden on parents/students</td>
<td>2.16</td>
<td>0.62</td>
<td>2.08</td>
<td>0.54</td>
</tr>
<tr>
<td>20. Requires independent and responsible learners</td>
<td>3.45</td>
<td>0.59</td>
<td>3.31</td>
<td>0.51</td>
</tr>
<tr>
<td>21. Discourages teacher-student interactions in the learning process</td>
<td>2.77</td>
<td>0.88</td>
<td>2.54</td>
<td>0.73</td>
</tr>
<tr>
<td>22. Requires students to have technological skills in order to be successful</td>
<td>2.90</td>
<td>0.57</td>
<td>2.84</td>
<td>0.54</td>
</tr>
<tr>
<td>23. Best serves older students (e.g., juniors and seniors)</td>
<td>2.82</td>
<td>0.80</td>
<td>2.53</td>
<td>0.80</td>
</tr>
<tr>
<td>24. Provides an opportunity to prepare for online learning experiences encountered after high school graduation</td>
<td>3.02</td>
<td>0.59</td>
<td>3.06</td>
<td>0.48</td>
</tr>
</tbody>
</table>
Table 4.4 continued

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Prin.</th>
<th>Super.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>25. Isolates students from one another in the learning process...</td>
<td>2.91 0.72</td>
<td>2.71 0.81</td>
</tr>
<tr>
<td>26. Broadens students' learning opportunities, beyond what the school offers</td>
<td>3.01 0.73</td>
<td>3.10 0.65</td>
</tr>
<tr>
<td>27. An opportunity to use technology to improve education.....</td>
<td>3.04 0.66</td>
<td>3.09 0.59</td>
</tr>
<tr>
<td>28. Presents an easy way for students to pass courses...........</td>
<td>2.27 0.78</td>
<td>2.25 0.76</td>
</tr>
<tr>
<td>29. Detracts from the building of community in schools........</td>
<td>2.67 0.77</td>
<td>2.55 0.78</td>
</tr>
<tr>
<td>30. Is an appropriate alternative to the traditional high school classroom educational experience</td>
<td>2.58 0.84</td>
<td>2.66 0.69</td>
</tr>
<tr>
<td>31. Is void of diversity issues related to language, geographic location, economic and cultural background</td>
<td>2.71 0.64</td>
<td>2.55 0.67</td>
</tr>
</tbody>
</table>

Note: Survey Responses: Items #14-31. Prin = Principal, Super = Superintendent, M = mean, SD = standard deviation. 1 = Strongly Disagree, 4 = Strongly Agree.

Superintendents expressed less agreement than principals with many more items in this section than section one of the survey: items #17-23, #25, #28, #29, and #31 (see Table 4.4). Mean levels of responses in this section ranged from 2.16-3.45 for principals and 2.08-3.31 for superintendents. The range of means in this section was greater for both principals (1.29) and superintendents (1.23) than for either of the other two survey sections. With a mean of 3.45 (.59), principals most agreed with the item stating online
learning requires independent and responsible learners (item #20). This item received the second lowest standard deviation (0.59) by principals. Superintendents also most agreed with this item over any other in the section with a mean of 3.31 (0.51). Only 5% of principals and 2% of superintendents disagreed with the statement (Figures 4.12, 4.13). No respondents strongly disagreed with the item.

Figure 4.12. Percentage of principals’ responses to item #20, that online learning requires independent and responsible learners.
Figure 4.13. *Percentage of superintendents’ responses to item #20, that online learning requires independent and responsible learners.*

Based on the means and modes of responses, principals and superintendents disagreed with several of the same statements related to characteristics of online learning. For the principals, the mode for all of the following characteristics was two (disagree) and had a mean score below 2.50: incurs an unreasonable financial burden on parents/students (item #19, M = 2.16, SD = 0.62), diminishes parental involvement in students' educational experience (item #18, M = 2.24, SD = 0.74), and presents an easy way for students to pass courses (item #28, M = 2.27, SD = 0.66). The superintendents disagreed with the same three items. The mean scores for items #19, #18, and #28 were 2.08 (0.54), 2.27 (0.67), and 2.25 (0.76), respectively. In addition superintendents
disagreed with the item regarding the unjustified financial burden online learning places on schools (item #17, M = 2.30, SD = 0.66).

The principals were most evenly divided over two items (mean scores very near 2.50). The first characteristic (item #17), that online learning incurs an unjustified financial burden on local high schools had a mean of 2.51 (0.75). With a mode of two, nearly 56% disagreed or strongly disagreed with the item and 43% agreed or strongly agreed (Figure 4.14).

![Figure 4.14. Percentage of principals’ responses to item #17, that online learning incurs an unjustified financial burden on local high schools.](image)

The second characteristic (item #29), that online learning detracts from the building of community in schools, had a mean of 2.67 (0.77). There were 39 principals who agreed
with the item and 41 who disagreed. Many more principals strongly agreed with the item (15%) than strongly disagreed (3%, Figure 4.15).

Figure 4.15. Percentage of principals’ responses to item #29, that online learning detracts from the building of community in schools.

The superintendents were most evenly divided over the statement that online learning better serves older students (item #23, M = 2.53, SD = 0.80). The frequency distribution was evenly divided (50%) between superintendents that agreed or strongly agreed and those that disagreed or strongly agreed (Figure 4.16).
Figure 4.16. *Percentage of superintendents’ responses to item #23, that online learning better serves older students.*

Whether online learning detracts from the building of community in schools was the other item that divided the superintendents with over 50% disagreeing or strongly disagreeing and nearly 49% agreeing or strongly agreeing (item #29, M = 2.55, SD = 0.78, Figure 4.17).
Figure 4.17. Percentage of superintendents’ responses to item #29, that online learning detracts from the building of community in schools.

Principals and superintendents differed most in their responses between groups for several items in this section. The mean difference of the means for items in this section was 0.13. The largest difference involved item #23, that online learning best serves older students. The mode of this item for superintendents was two (disagree), while the mean was 2.53 (0.80). Principals rather agreed with the item (M = 2.82, SD = 0.80, Figure 4.18).
Figure 4.18. *Percentage of superintendents’ and principals’ responses to item #23, that online learning best serves older students.*

Superintendents also agreed less (M = 2.54, SD = 0.73) than principals (M = 2.77, SD = 0.88) regarding the statement that online learning discourages teacher-student interactions in the learning process (item #21, Figure 4.19).
Lastly, the third largest difference in level of agreement between groups involved the characteristic of increasing inequities by relying on students' abilities to access technological resources (item #15). In this case the superintendents favored the item more (M = 2.77, SD = 0.76) than the principals (M = 2.60, SD = 0.67, Figure 4.20).
Principals and superintendents answered most similarly in their level of agreement to statements claiming that online learning: presents an easy way for students to pass courses (item #28), diminishes parental involvement in students' educational experience (item #18), and provides an opportunity to prepare for online learning experiences encountered after high school graduation (item #24). The differences between means for the items were .02, .03, and .04, respectively.

Based on standard deviation scores, the item in this section with the smallest variation in level of agreement within the principal group involved the requirement of students to have technological skills (item #22, $M = 2.90$, $SD = 0.57$). For
superintendents, the item with least variation involved the opportunity to prepare for online learning experiences encountered after high school graduation (item #24, M = 3.06, SD = 0.48). For principals, they answers varied most for items claiming online learning discourages teacher-student interactions in the learning process (item #21, SD = 0.88) and that it is an appropriate alternative to the traditional high school classroom educational experience (item #30, SD = 0.84). For superintendents, items stating that online learning isolates students from one another in the learning process (item #25, SD = 0.81) and it best serves older students (item #23, SD = 0.80) received the most variation in levels of agreement.

Administrative Issues to be Addressed

The third section of the survey queried principals and superintendents about the extent to which they agreed or disagreed with 10 items related to issues that must be addressed before implementing an online learning program. The means and standard deviations for all items in this section can be found in Table 4.5.
Table 4.5

To what extent do you agree or disagree schools must address the following issues BEFORE implementing an online learning program.

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Prin.</th>
<th>Super.</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. Policy stating the eligibility requirements for students to enroll in online courses (G.P.A., grade level, learning style, etc.)</td>
<td>3.36</td>
<td>0.72</td>
</tr>
<tr>
<td>34. Gain the support of the online learning program by teachers and administrators</td>
<td>3.33</td>
<td>0.49</td>
</tr>
<tr>
<td>35. Adequate computer equipment for students to take online courses</td>
<td>3.47</td>
<td>0.66</td>
</tr>
<tr>
<td>36. Policy limiting the number of online courses students can enroll in each semester</td>
<td>3.27</td>
<td>0.77</td>
</tr>
<tr>
<td>37. Policy addressing who is responsible (district, school, parents/students) for the cost (enrollment fees, books) of online courses</td>
<td>3.55</td>
<td>0.50</td>
</tr>
<tr>
<td>38. How schools will manage the academic records for students taking online courses</td>
<td>3.43</td>
<td>0.57</td>
</tr>
<tr>
<td>39. Whether or not schools will provide teachers who are trained and willing to teach online courses</td>
<td>3.30</td>
<td>0.60</td>
</tr>
<tr>
<td>40. Policy addressing the types of online courses (core, elective, Advanced Placement, etc.) that count toward students’ graduation</td>
<td>3.44</td>
<td>0.52</td>
</tr>
<tr>
<td>41. Policy addressing the number of online courses accepted for credit toward graduation</td>
<td>3.40</td>
<td>0.57</td>
</tr>
<tr>
<td>42. Whether or not mentors will supervise students to keep them on track and honest with their work</td>
<td>3.39</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Note: Survey Responses: Items #14-31. Prin = Principal, Super = Superintendent, M = mean, SD = standard deviation. 1 = Strongly Disagree, 4 = Strongly Agree.
Mean levels of agreement in this section varied less than either of the first two sections with a range of 3.27-3.55 for principals and 3.20-3.48 for superintendents.

Principals most agreed with items regarding who is responsible for the cost of online courses (item #37, M = 3.55, SD = 0.50) and having adequate computer equipment for students (item #35, M = 3.47, SD = 0.66). Over 53% of all principals strongly agreed (4) with these two items (Figures 4.21, 4.22).

![Bar chart showing responses to item #37](image)

Figure 4.21. *Percentage of principals’ responses to item #37, stating the issue of funding must be addressed before implementing an online course program.*
Figure 4.22. *Percentage of principals’ responses to item #35, regarding the issue of having adequate computer equipment for students*

Similarly, superintendents also agreed most with the policy addressing online course funding (item #37, M = 3.48, SD = 0.52). Over 49% of the superintendents strongly agreed with the issue must be addressed (Figure 4.23).
Figure 4.23. *Percentage of superintendents’ responses to item #37, stating the issue of funding must be addressed before implementing an online course program.*

In addition, superintendents most agreed with policies relating to the types of online courses counting toward graduation (item #40, \( M = 3.42, SD = 0.54 \)), and the eligibility requirements for students to enroll in online courses (item #33, \( M = 3.42, SD = 0.63 \)). Only 2% of superintendents disagreed with item #40 and nearly 8% disagreed with item #33 (Figures 4.24, 4.25). No superintendents strongly disagreed with either item.
Figure 4.24. Percentage of superintendents’ responses to item #40, addressing the issue of online courses counting toward graduation.
Figure 4.25. *Percentage of superintendents’ responses to item #33, addressing the eligibility requirements for students to enroll in online courses.*

There were no items in this section that principals or superintendents disagreed with (mean less than 2.50). Both principals and superintendents least agreed with the policy that students should be limited in the number of online courses they can enroll in each semester (item #36). Principals agreed with a mean of 3.27 (0.77) and superintendents agreed with a mean of 3.20 (0.65). Principals agreed more than superintendents (larger mean scores) on 9 of the 10 items in this section. Superintendents narrowly agreed more (M = 3.42, SD = 0.63) than principals (M = 3.36, SD = 0.72) only on establishing a policy stating the eligibility requirements for students to enroll in online courses (item #33).
Principals and superintendents answered most similarly involving policies that address the support of online learning programs by teachers and administrators (item #34) and the number of online courses accepted for credit toward graduation (item #41), both with a difference in means between the two groups of 0.01. The two groups answered most dissimilarly with the issue of having adequate computer equipment (item #35). The mean difference for this item was 0.13. The principals' mode for this item was 4 while the superintendent's mode was 3. The mean difference in responses between groups was 0.05 for items in this section.

**Administrator's Perceptions Sorted by Implementation Status**

Data was sorted by the principals' responses to item #1, the school's implementation status. Based on the responses, schools were coded as *adopter* (55%, N = 51), *considering* (13%, N = 12), or *not considering* (32%, N = 29) schools. Descriptive statistics were conducted on each of the three groups. These results were analyzed for trends and patterns to determine which items were most important to these groups.

**Description of Respondents and Schools**

Among the principals who responded to the survey in this study, the mean enrollment for schools not considering online learning (item #46) was, 605.9 (376.2) while considering and adopter schools had means of 524.8 (323.9) and 503.9 (267.0), respectively. Based on the sample in this study, the mean number of Advanced Placement courses offered (item #47) for not considering schools was 3.4 (4.3), while the means for considering schools was 2.4 (2.7) and 2.9 (2.7) for adapter schools. Schools considering online learning programs (item #44) had a mean of 6.6 (2.7) for the number of years
principals been in the position, while adopter or not considering schools had means of 7.8 (6.1) and 9.5 (8.1), respectively. No noticeable pattern was found for the number of school computers accessible to students (item #45) or schools’ student-to-computer ratios.

*Purposes of Online Learning*

Schools not considering online learning had a mean of 2.8 (0.8) on the item regarding that online learning programs provided opportunities to take remedial courses (item #4). Not considering and adopter schools had means of 3.4 (0.5) and 3.2 (0.8), respectively for the same item. Regarding the purpose to provide enhanced instructional services for special education students (item #9), schools not considering online learning had a mean of 3.1 (0.7) and those considering online programs had a mean of 2.9 (0.7), while adopter schools had a mean of 2.5 (0.9). The same trend emerged for item #12, that online learning provided an opportunity to develop the skills needed to learn and work in a technological society (item #12). Schools considering online learning scored a mean of 3.0 (0.6) and those not considering online programs had a mean of 2.9 (0.7), while adopter schools had a mean of 2.5 (1.0).

*Characteristics of Online Learning*

In relation to the degree to which online learning provides an opportunity to globally interact and share with students and experts (item #14), adopter schools agreed with a mean of 2.7 (0.7). Considering schools agreed with a mean of 3.2 (0.6) and not considering schools agreed with a mean of 3.1 (0.6). For item #28, schools considering online learning disagreed with a mean of 1.9 (0.7) that online presents an easy way to
pass courses. Not considering schools and adopter schools had means of 2.4 (0.7) and 2.3 (0.8), respectively.

**Administrative Issues to be Addressed**

As mean levels of agreement in this section varied less than the first two sections, no strong patterns emerged when sorted by implementation status. Item #42 involving the use of a mentor in order to supervise students to keep them on track and honest with their work was the only issue that appeared to show some separation in level of agreement. Those not considering online learning agreed with a mean of 3.6 (0.5). Considering schools agreed with a mean of 3.3 (0.6) and adopter schools agreed with a mean of 3.3 (0.5).

**Administrator's Perceptions of Online Learning – Open-ended Items**

**Purpose of Online Learning**

Principals responded with almost twice the number of written comments than superintendents. Principals provided 59 comments and superintendents contributed 31 comments across the three open-ended survey items (Table 4.6). Principals’ comments were fairly evenly divided among the three sections (purpose, characteristics, and issues) whereas the superintendents provided more comments addressing the purpose and issues surrounding online learning. The frequencies of comments listed by topic are included in Table 4.6.
Table 4.6

*Frequency of comments in open-ended items for principals (n = 58) and superintendents (n = 31), sorted by principal.*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Category</th>
<th>Principal</th>
<th>Superintendent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should only be used as an alternative</td>
<td>Purpose</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Need for a mentor</td>
<td>Issue</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Concern over student motivation</td>
<td>Characteristic</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Eligibility of students to take courses</td>
<td>Issue</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Lack of social interaction</td>
<td>Characteristic</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Concern over course timeline</td>
<td>Issue</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Could be used for remediation</td>
<td>Purpose</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Not to avoid a teacher</td>
<td>Issue</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Cost of courses</td>
<td>Characteristic</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>How credit is given for course</td>
<td>Issue</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Concern over honesty during course</td>
<td>Characteristic</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>NA</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Providing professional development</td>
<td>Issue</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Concern over technological hardware requirements</td>
<td>Characteristic</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Concern over student technology proficiencies</td>
<td>Characteristic</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>How to assess final grades</td>
<td>Issue</td>
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<td>0</td>
</tr>
<tr>
<td>Concern over student attrition</td>
<td>Issue</td>
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<td>0</td>
</tr>
<tr>
<td>General positive comments</td>
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Table 4.6 continued

<table>
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<th>Superintendent</th>
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<td>Concern over course quality</td>
<td>Characteristic</td>
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<td>3</td>
</tr>
<tr>
<td>Administrator not familiar with technology</td>
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<td>1</td>
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<tr>
<td>Where courses are taken</td>
<td>Issue</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Limiting the number of online courses a student may take</td>
<td>Issue</td>
<td>0</td>
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</table>

Regarding the purpose of online learning, principals and superintendents frequently commented that online learning opportunities should only be an alternative to the traditional classroom. There was a strong sense that online learning may have its place, but students are best served in a traditional learning environment. One principal stated, “Online education is fine for specific situations but it never [underlined] should replace a traditional education.” Another stated that the purpose of online learning was to serve as an “extension of the [traditional] classroom only.” Principals saw this as an acceptable learning alternative when it is used as “a remedial, as an alternative learning option, and as a distance-learning enhancement,” “An opportunity for students to make up failed coursework,” and an “Option for students who do not like the structure of a typical school day.”

The superintendents echoed strong sentiment regarding this topic as well. Superintendents’ most frequent comments reflected the feeling “the classroom is the best situation for our students,” and many had little interest in entertaining the concept much farther. Others more open to the concept felt it, as one superintendent stated, “[It] could
be an enhancement to traditional HS classroom experience, but should not replace.” Those providing online programs used them as “an alternative educational placement for those who have major difficulty in traditional classroom setting.” Another superintendent emphasized the purpose of online saying, “that is all it is: an alternative, instructional tool.”

There was similar evidence in the comments that superintendents supported the use of online learning programs for remedial and alternative purposes but again, only after traditional teaching methods were exhausted. This is seen with comments of the three superintendents who stated, “I believe [in] online learning, especially for remediation and credit recovery.” Another speaking to the restricted use of the program stated, “Very limited; only to make up failed courses.” The third echoed this sentiment saying, “…we provide online courses for students who can not make it in the regular academic setting.”

More superintendents than principals provided comments about how online learning should be used to better prepare students for their post-high school careers. Several superintendents felt the experience of taking an online course better prepared their students for college and a technology-rich world. "Many colleges offer [online] courses and H.S. students will be more prepared if they have taken a class online."

“Public schools will need to embrace online learning as an educational tool. This shift will be necessary to compete in today's diverse world.” Based on the perceived importance of the skill, one superintendent is planning to make the experience mandatory: “I believe it is critical that ALL of our students take an online course as a
graduation requirement - in fact, our district goal is for this policy to be in place by the '07-'08 school year.” The only principal to comment stated “students would need a certain amount of technology skill.” One principal believed the item in the section addressing the importance of having the necessary skills to learn and work in a technological society (item #12) “is not given enough value by those making the decisions.”

Characteristics of Online Learning

Principals supplied over three times as many comments regarding the specific characteristics associated with online learning. The major cause of this discrepancy was the number of principals' comments, and complete lack of superintendents' comments, involving student motivation and online learning. Principals frequently stated clearly and strongly their reservations in the motivation level required of students in order to be successful in an online environment: “Students need to be really motivated and most aren't,” “Many students that sign up may not have initiative to complete programs,” and “Requires students who are disciplined learners.” One principal felt “online learning is only for the top 1/3 of students.” The comment “Our experience has found many students taking online classes lack the motivation and self control to monitor progress,” demonstrates someone who is not presupposing about this characteristic, but has made an observation based on actual experience. Similarly, one principal witnessed low test scores from students who participated in online course:

At this point, in our area, students have not been successful in completing technology based courses like Virtual Learning Academy or TRECCA. OGT [Ohio Graduation Test] scores are well below passing for that type of student.
Superintendents did not comment on the motivation characteristic at all.

While superintendents provided few comments about items relating to specific characteristics of online learning, both groups voiced concerned over the lack of social interaction associated with online courses. Both student-student and student-teacher interactions were viewed as important and lacking in online learning environments. Simple statements like “Should support what is going on in school. The social part of school is important,” “Computers can not replace the social development of a student,” “Not as personable as actually being in class,” and “Should have more teacher to student interaction!” illustrate the concerns. One principal perceived the lack of social interaction as having a detrimental effect on the success of the student upon entering the work force: “[Online learning] Takes away communication (oral) skills our kids need in industry - resolving conflict / peer relations.” Only one of the eight respondents commenting on the topic voiced any confidence in the forms of social interaction online learning affords: “Student interaction can be enhanced by developing course chat rooms, blogs, and archiving student work.”

Issues to be Addressed

Comments regarding the need of a monitor to be present with online learners were most frequent in this final section of the survey. Principals provided twice as many comments (6) as superintendents regarding the issue. Across the entire survey, the number of comments on this issue was second only to the frequency of comments about the purpose of online learning being relegated to a strictly regulated, alternative learning option.
The perception that a monitor or mentor is necessary for students to be successful in online learning environments was closely tied to the perceived problems with motivation and independent learning in online courses. Principals in particular felt having a monitor present to keep students accountable in their online courses could help remedy these problems. One principal stated, “We have found that if students are monitored by a teacher, there is a huge increase in the success rate and amount of quality work done. Monitored means that attendance and hours spent with teachers are a must.” Another principal said, “If we did not have an instructor physically with the students during the day, courses would not get done.” Another added, “The greatest concern my superintendent has is having to hire someone to monitor students taking online courses.”

Superintendents were less specific in their connection between the perceived problematic characteristics of online learning and how providing a monitor may address the problems. One superintendent stated, “I would like these courses, at the high school level, to offer a facilitator who would meet with students on a regular basis and to have student cohort groups.” Another said, “I believe online learning…still needs follow up and support of a staff member which necessitates an additional cost.” There were six principals providing comments on the topic while superintendents provided three written responses.

In addition to the issue of providing a monitor, principals and superintendents commented on a number of other issues, with principals contributing a greater variety of comments than superintendents. Principals raised ten issues besides the mentoring issue while superintendents commented on three other issues related to offering an online
learning program. Both groups offered three or fewer comments for each of the remaining issues.

The quality of online courses was one superintendent’s concern stating, “Make sure the courses are not flaky courses and they meet our expectations.” Another superintendent concerned about state standards commented, “The quality of online courses as they align to Ohio Academic Standards should be reviewed.” One superintendent expressed concern about the quality of the online experience saying, “I had a group of students take an 'online' math course. Boring [underlined] was the word they all used.” The only principal to comment on the issue was more concerned with the quality of teaching than the quality of the course content.

Superintendents provided two comments related to the issue of financing an online program. One superintendent reiterated the fact of a limited budget by saying, “Who pays? Money is short in the public school.” The other superintendent spoke to the inequity of funding among public schools replying, “It would be nice if public education were funded adequately in order to allow more opportunity for all [underlined] students.” Two principals agreed with financial barrier of providing online courses saying, “Financial issues for schools are critical,” and “Finding additional financial resources in our budget to implement such a program.” One principal’s opinion acknowledged the financial challenge but stated, “Students who have a need for online learning options must not be denied for financial reasons.”

One of the two remaining comments provided by superintendents addressed issues related to limiting the number of courses students would be eligible to take for
graduation credits. Principals did not comment on the number of courses, but were more concerned with scheduling and course timelines. This is illustrated by a principal’s comment stating, “It has great potential, but small schools like us have severe scheduling restrictions to find openings.” Principals worried about course timelines said, “Needs a time limit on course completion,” and “One thing to consider is the timeline for students to take online courses.” Another principal stated, “Students should be required to complete work every week.”

More principals than superintendents expressed concern over students taking an online course for reasons other than lack of course availability at the school. Principals commented that students should not be taking the courses “to improve class rank and GPA,” “to avoid truancy laws,” “to avoid different teaching styles, convenience, or as a total reliance in place of education in the school setting.” Both superintendents and principals each provided one comment saying students should not be allowed to take an online course in order to avoid a particular teacher.

Only principals provided several comments relating to eligibility requirements for students to enroll in online courses. The topics related to eligibility included whether or not online courses counted towards extra-curricular activities, how the courses would be credited toward graduation, and the age and/or academic ability of participants. One principal stated that “…online learning is only for the top 1/3 of students,” while another felt only seniors should be eligible.

The remaining group of comments was provided by principals and covered a broad range of topics, with only one or two principals’ comments per any given topic.
Two principals had concerns about honesty and online courses. One of the principals stated, “Programs have great potential, but I worry about the honesty of both those taking the course(s) and offering them.” Two principals had concerns regarding the availability of technology. “Parents should provide equipment and Internet access!” claimed one principal while the other was concerned about technological complications associated with online learning.

The following comments provided by principals were unique in that they were reported by only one principal. How students would be assessed in the online environment and how “a variety of assessments would be required to meet the needs of all students” was a concern of one principal. There was a single comment about where online courses should be accessed: “Courses should be accessed and taken at home or outside of the traditional school setting.” Another principal was concerned with the ramifications of student attrition during an online course and what the consequences would be. Only one principal commented on the need for “in-service” or professional development to prepare those teachers who were interested in being involved with an online learning program.

Superintendents provided more positive testimony about experiences they had with online learning than did principals. Three superintendents made clear endorsements of their specific online learning programs: "Our Virtual [Learning] Academy is in its early stages but has been successful in meeting the goals we as a public district has established," and "Using our own, Virtual Learning Academy from Jefferson Co E.S.C. has let us keep our kids, control the learning, and promote personal teacher student
contact." The third superintendent voiced support for their online program saying, "Online learning opens doors to students and schools to widen their scope of course offerings." The one clearly positive comment toward online learning made by a principal stated, "Online learning has been a great help to our students."

Summary

This study explored the principals’ and superintendents’ perceptions of the purposes, characteristics, and issues surrounding online learning. This chapter presented the results of the study including the description of administrator demographics, school demographics; descriptive statistics of the quantitative survey data; and the results for the collection of qualitative survey data.
CHAPTER 5: Discussion and Recommendations

Summary

The Internet is nearly ubiquitous in instructional classrooms in the United States. This resource has presented school administrators with the option whether or not to offer online courses to their students. Such courses could provide opportunities to students they otherwise would not have available. The target population, Appalachian Ohio, is poorly represented in the literature. The overall goal of the study was to begin to understand if public high schools in Appalachian Ohio are utilizing Internet-based online courses and how principals and district superintendents feel about this educational resource.

The primary purpose of this study was to explore and describe the purpose or utility, characteristics, and issues surrounding online learning opportunities in Appalachian Ohio high schools, as perceived by district superintendents and high school principals. All Appalachian Ohio superintendents and high school principals were asked to participate in a survey comprised of three sections. Each section addressed one of three research questions. At the end of each section respondents also had the opportunity to respond to an open-ended item. This data was used to help validate the patterns identified in the closed-ended survey items and provided additional information that was not specifically addressed by the survey.

Use of Online Learning

In the current study, a demographic analysis revealed that 55% of the survey respondents reported offering an online learning program in their high school. An additional 13% were considering such a program. This level of participation is
considerably higher than the national average reported by Setzer and Lewis (2005) for the 2002-03 school year. They found approximately 20 percent of the schools used online learning during the 2002-03 school year, less than half of what the current study found for the Ohio Appalachian Region. They also found more usage in urban and suburban schools than in rural schools. Smith, Clark, and Blomeyer (2005) estimated participation in online courses would double by the 2005-06 school year. It would appear the current study substantiates their 2005 estimate.

The more recent data from Wells and Lewis (2006) shows the urban, suburban, and rural usage trends for distance learning (specifically online learning) may be reverting back to traditional distance learning patterns (Everett, 1999; Morabito, 1997). The data from Wells and Lewis which includes the 2005 academic year indicates rural schools are again more likely to provide online learning opportunities than urban or suburban schools (43 vs. 25 and 24 percent respectively). This may illustrate how important distance learning, and in this particular instance, online learning, is to rural schools; or at least more important than it is to urban or suburban schools. Their report of 43 percent of schools offering online courses is still nearly 25 percent less than the current study’s findings of 55 percent and more than twice the national percentages for urban and suburban schools.

The relatively high rate of participation may be the most unexpected and substantial finding of the current study. The extent to which schools in rural Appalachian Ohio were offering online learning opportunities was previously unknown. With only ancillary observational data and personal communications with regional schools, it was
presumed that Internet-based, online learning was relatively underutilized in the region. Perhaps the lag of use by rural schools during the 2002-2003 school year (Setzer & Lewis, 2005) and the considerable increase of use by 2004-2005 represents a more gradual adoption of the technology than occurred in urban and suburban schools.

**Non-response Bias**

According to Babbie (1998), a response rate of 50% is considered adequate, 60% to be good, and 70% to be very good. A response rate below 60 percent is generally considered unacceptable due to the significant role non-response bias has on interpretation of results and how confidently those interpretations can be generalized (Hager, Wilson, Pollak, & Rooney, 2003). The survey response rates were 74 percent for principals (N = 99) and 71 percent for superintendents (N = 91). Given the relatively high response rate, it can be cautiously concluded that non-response bias likely had a limited impact on the data set or on conclusions drawn from it.

Of all the principals who were requested to participate, 26 percent did not complete and return the survey. It is unknown if reasons for not responding were in any way correlated with high school online course offering status. The name of the survey could have dissuaded principals from completing and/or returning the survey if they saw the words “Online Learning” in the title. It could be argued that if non-respondents had little interest in online learning and therefore did not complete the survey, they may compromise a group of principals who do not offer online courses in their high school. If all non respondents represented “not considering” schools, the resulting online learning
participation level would be reduced from 55 percent to approximately 30 percent, which is still comparable with current national trends (Wells & Lewis, 2006).

**School Demographics**

Based on the sample in this study, adopter schools tended to have larger enrollments than considering or not considering schools. The relationship between the size of the school and participation in online learning may be a function of the number of students interested in online learning. If the number of students who would enroll in online courses is low simply because of a school’s relatively small size, administrators may not be able to justify the additional resources required to support an online learning program, even if they favored the concept. The median school size in the study’s sample was ‘medium’ (534 students) according to the categories of Wells and Lewis (2006).

In addition, schools not considering online learning opportunities had principals with more years experience in the position than adopter or considering schools. If the number of years a principle has held the position correlates to an older principal, then younger principals appear to be more likely to support online learning programs than older principals. Rosen and Weil (2001) have shown evidence of how age influences acceptance across a range of technologies (computers, computer games, computerized musical instruments, etc.). They found age to be an extremely important factor, with younger adults more likely to accept and adopt new technologies than their older counterparts.
Access to Computers

Access to computers connected to the Internet appeared not to be a serious barrier for the schools in the Appalachian Ohio region, but may be lagging behind other rural schools in the country. Parsad and Jones (2005) reported a mean student to computer ratio of 4.4 to 1 for U.S public schools in 2003 and 3.8 to 1 for rural schools (access to computers is improved as the student to computer ratio decreases). In 2005, the ratio dropped to 3.8 to 1 nationally and 3.0 to 1 for rural schools (Wells & Lewis, 2006). The current study found a mean student to computer ratio of 6.2 to 1, more than double the ratio for other rural schools in the nation (Wells & Lewis, 2006). The median score, which may be a better estimate of central tendency here, was 5.0 to 1, which is still considerably higher than 3.0 to 1. It is important to note that some schools in the region had very low ratios (1.5 to 1) while others had very high ratios (27.6 to 1). But the overwhelming majority of schools had student to computer ratios above the national average for rural schools.

A student to computer ratio of 5.0 to 1 is more consistent with Parsad and Jones (2005) rural school data for the 2000 school year. From 1998 to 2000, the ratio was halved and halved again by 2005 (Wells & Lewis, 2006). This could imply that schools in this study increased the number of available computers around the time the national student to computer ratio began to fall dramatically, and are still using those same computer systems. Even though the student to computer ratio was higher than national ratios, it does not appear to be perceived as a barrier for online learning opportunities. No administrators identified computer availability as a problem in their schools, though they
may question the quality of their computer technology. This may be a point that could be affected by self-reporting bias. It may not be socially desirable to admit that access to technology is an issue. As with all self-reporting studies, there are limitations due to the knowledge of group or groups being questioned. There may be another group who may have better information about the availability of computers. If the self-reporting bias is not influential, and if access to technology prevented participation in online learning programs, one would expect larger mean and median student to computer ratios, as well as comments specifically addressing the problem.

Purpose of Online Learning

Based on the strong agreement by superintendents and principals that the purpose of online learning is to give students the opportunity to broaden courses offered by the school, and to offer a wider variety of Advanced Placement courses, it may be expected that the schools offering the fewest number of traditional Advanced Placement courses would be most involved with online courses. This was confirmed when the data were sorted by adopter, considering, and not considering schools. Administrators of adopter schools are employing online learning opportunities in order to broaden their course offerings and to offer more Advanced Placement courses. This aligns well with other research that has shown these two purposes are more strongly supported by administrators in rural than suburban or urban school districts (Setzer & Lewis, 2005).

The number of Advanced Placement courses offered at the schools in this study also coincides with the percentage of schools offering Advanced Placement courses nationwide. According to The College Board’s Report (2006), 68% of public high
schools offer at least one Advanced Placement course. The current study has shown 63% of the principals responding to the survey said they offered at least one Advanced Placement course at their high schools. This is somewhat surprising given that rural districts typically offer fewer, if any, Advanced Placement courses compared with urban or suburban districts (Commission on the Future of the Advanced Placement Program, 2001). The College Board’s Advanced Placement equity policy statement “encourages the elimination of barriers that restrict access to AP courses for students from ethnic, racial, and socioeconomic groups that have been traditionally underrepresented in the AP Program” (College Board, n.d.). Other reports from Texas (Klophenstein, 2004), California (Zarate & Pachon, 2006), and North Carolina (Darity et al., 2001) substantiate how students in rural school districts often do not have access to Advanced Placement courses. It is encouraging that Appalachian Ohio high schools are offering Advanced Placement courses at rates comparable with national figures, despite being a predominantly rural region.

There was a slight trend towards adopter and considering schools to offer fewer traditional Advanced Placement courses than not considering schools. If schools have a selection of traditional Advanced Placement courses, they likely have little need to offer the same courses online. One might expect this trend to be stronger, but administrators also made it clear they felt online courses could be utilized for purposes other than solely Advanced Placement. Administrators were just as interested in using online learning to broaden their course offerings and for remediation; two purposes that may influence
administrators’ decision to implement an online learning program, regardless of the number of traditional Advanced Placement courses offered.

It is understandable how this overlap of purpose would blur the trend between adopter and considering schools and the number of traditional Advanced Placement courses offered at those schools. Further research is needed to investigate precisely which online courses adopter schools are utilizing, the number of active courses per semester or year, and the number of students enrolled in the courses.

*Characteristics of online learning*

*Student Disposition and Academic Achievement*

The item in the second section of the survey most agreed upon regarded the characteristic that online learning requires independent and responsible learners. The terms “independent” and “responsible” are often associated with successful online learning experiences (Keegan, 1996; Smith, 2001; Wedemeyer, 1981). They are also two factors affecting motivation levels (Curry 1991; Aragon, Johnson, & Sahik, 2001). It seems appropriate that several principals commented on the need for students to be highly motivated learners in order to be successful in online courses. Based on the way comments were phrased, it was clear some of the principals spoke from actual experience with students and online courses. Though it is surprising no superintendents provided comments about the characteristic, it is proposed that principals in general have more direct contact with students and thus, are more familiar with the particular skills and aptitudes students must possess in order to succeed in the online environment.
Though superintendents did not comment at all about motivation, the direct comments provided by principals and the strong agreement by both groups of administrators on the item in section two of the survey indicates this is one of the larger points of contention. All of the principals’ comments included some skepticism about their students’ motivation level when it comes to completing and succeeding in online courses. The survey instrument did not differentiate between the motivation required to be successful in traditional classes and online classes. Perhaps administrators felt the students in question, because of motivational issues, would not be successful in the traditional classroom either. Assuming administrators in general felt higher motivational levels would be required of students in order to be successful in online courses, we can consider whether administrators simply perceive online courses to require more motivation or whether online courses actually require higher levels of motivation.

Certainly, student motivation is a concern, whether in the traditional classroom or online environment. There is evidence the community of learners created in an online course can improve student motivation and help foster the social interactions experienced in the traditional classroom (Vonderwell, 2003). Regardless of the learning environment and the effectiveness of the course content, if learners lack the necessary motivation, they will not learn (Ally, 2004). This is also reflected in the generally indicated “no significant difference” in academic achievement between comparable traditional and online courses (Falck et al., 1997; Goc Karp & Woods, 2003; Kearsley, 2000; Gorski & Caspi, 2005; Hinnant, 1994; Jordan, 2002; Kozma et al., 2000; Mills 2002; Ryan, 1996). Students that achieve in the classroom achieve online and those that struggle in the classroom generally
struggle online. Those who develop online courses should strive to use intrinsic (Malone, 1981) and extrinsic (Keller, 1983; Keller & Suzuki, 1988) motivation strategies in order to best serve students' needs. Older online courses traditionally lacking components that fostered extrinsic motivation have been supplanted with engaging multimedia activities, limited screens of text, and several avenues for communication with teachers and students (Burgess, 2003).

Only recently have online course designers made a dramatic move from predominantly text-based online courses to include more multimedia-rich, interactive components that strive to engage and retain students’ attention (Conrad, 2002a; Burgess, 2003). The National Association of State Boards of Education (2001) has stated, “When designed well, interactive technologies are inherently motivating.” Online courses have been developed, even over the last three to five years, with the knowledge that interaction increases student involvement and motivation (Aragon, Johnson & Shaik, 2002; Smith, Clark & Blomeyer, 2005). Perhaps school administrators worried about their students’ success in online courses are not familiar with the design and presentation of the most recently developed online courses. More research is needed to reveal administrators’ perceptions of the “look and feel” of today’s online course environment (amount of screen text, interactive activities, communication with others, etc.) in order to better understand their concern with student motivation.

*Online Learning as an Alternative*

The data collected from item #30 in section two of the survey revealed administrators were fairly evenly split on whether they perceived online courses to be an
appropriate alternative to the traditional classroom setting. The open-ended comments made it clear that administrators have strong opinions both for and against the use of online learning. Though some of the comments spoke of success about their online learning program, the majority of administrators made it clear that online learning was only to be used as an alternative and not a replacement for traditional courses.

The positive comments regarding the use of online learning came from administrators who were reporting on experiences involving their own online learning programs. From several of the comments, there appeared to be strong feelings that the traditional classroom is the best situation for students, regardless of the alternative at hand. More research is needed to decipher whether these perceptions are due to the specific alternative offered, in this case online learning, or are independent of the nature of the alternative learning environment.

Social Interaction

The current study revealed administrators’ strong negative perception toward the lack of social interaction in online courses. Again, it is unknown if this is a misconception based on outdated perceptions of online learning or based on direct experiences with online learning. More research is needed to understand what types and amounts of communication administrators believe occur in online courses. The question is not whether interaction occurs in online courses, but whether the type and amount of communication that occurs are acceptable alternatives to those found in the traditional classroom.
There is ample evidence to suggest that though the communication modes are different in online courses, they are important to students’ social development (Ally, 2004; Hurst & Thomas, 2004; McInnerney & Roberts, 2004). When students are engaged in online discussions with their peers, they have the opportunity to develop social and academic skills as they evaluate each others’ viewpoints and perspectives (Brogan, 2000). Some even argue online learning is a superior way to develop “soft skills” and social interaction (Hurst & Thomas, 2004). Many of the administrators in the current study had the perception that online learning lacks the important social interaction found in the traditional class setting.

It has been common to cite the lack of social interaction as one of the major barriers toward adopting online learning programs (Litke, 1998; Muilenburg and Berge; 2001; Smallwood & Zargari, 2000). Again, this may be more due to outdated conceptions of online courses as the technology has evolved, even if those conceptions are just a few years old. But as noted above, advancements in the technological capabilities and the improved implementation of those tools has begun to ease the magnitude of this barrier (McInnerney & Roberts, 2004). Perhaps if more administrators were better acquainted with the current status of online learning, there would be fewer perceptions of it lacking the social richness students learn to develop in traditional school settings.

**Issues and Policies Surrounding Online Learning Programs**

**Use of a Mentor**

There was strong agreement among superintendents and principals in the closed and open-ended items that problems with student motivation level and social interaction
could at least be reduced, if not resolved, with the use of an on-site mentor. Several administrators commented that the use of a mentor was essential for ensuring students stayed on track and completed their work. Administrators’ lack of confidence in the students’ ability to be independent and responsible learners could be abated with the use of a mentor who would not necessarily teach any of the content, but would simply be available to check on student progress and handle simple questions. Several administrators who had direct experience with online courses in their schools felt students would not have been successful without their use of a mentor.

Utilizing a mentor would likely entail scheduling at least one dedicated class period per day where students would meet to work on their online courses while the mentor was present. Based on administrators’ comments, this type of arrangement would not only improve student success in the online course, but may also address the perceived lack of social interaction with online courses. If students are in a setting where all are working on online courses, it is likely that more traditional classroom social interactions would occur. Not only would students have the opportunity to interact with remote students and teachers, but they would also have the chance to talk with their “local” peers about their online experiences, even if they are not enrolled in the same course. It is understandable why some would argue that online courses, if structured properly, may actually increase the types and amounts of social interaction beyond what is experienced in a traditional classroom (Vonderwell, 2003).

It is notable that stronger support for the use of a mentor was not found in the literature, for either or both of the reasons discussed above. From the closed and open-
ended survey items, administrators felt the need for a mentor was an important component of a successful online learning program. It is unclear why this import was not represented in the literature. Perhaps administrators in this region perceive a greater need for monitoring in order to compensate for the perception that their students have limited amounts of self-direction and regulation. More research is needed to understand why administrators emphasized the importance of incorporating a mentor in an online learning program, and whether or not this perception is based on differences in students’ levels of self-directed, independent learning.

Financial Burden

At the onset of the study, it was suggested that the financial burden of implementing an online learning program could be a barrier restricting districts from participating. Given the relatively high percentage of high schools that reported using some form of online learning (55%), the relatively low agreement (especially by superintendents) with the survey item regarding the financial burden online learning incurs on schools, and only three comments related directly to funding such a project, it can be proposed financial hardship is not the primary barrier preventing participation. Administrators agreed this is an issue requiring clear policy stating who is fiscally responsible for the online courses (item #47), but only one superintendent and two principals made direct comments stating their financial concerns.

Administrators must weigh the cost of offering online courses in order to best serve their students’ needs against potentially losing students to districts where those needs are better served. As with most programs, an online learning program will likely
incur some amount of financial burden on the school. The current study has shown that administrators do not perceive this burden to be unjustified or unmanageable. Perhaps this is because they realize the cost of retaining students through offering such a program is less than the cost of losing the student to another district where the desired courses are offered. Regardless if the student leaves for another traditional school or a virtual school, the revenue that accompanies the student is lost. Additionally, administrators may see the costs of offering an online program offset by the increased revenue associated with attracting students, like homeschoolers, to their district (Setzer & Lewis, 2005). Additional research specifically focusing on funding models of adopter schools is needed to tease out factors related to the cost and benefit analysis contributing to the decision making process.

The model of online learning implemented may greatly affect the amount of financial burden placed on the school. As discussed in Chapter 2, there are a variety of options, which all have varying amounts of overhead and expense for the school. Some of the larger models require upfront support contracts and/or a minimum number of students committed to participate while smaller-scale models only require enrollment and textbook fees with no minimum number of participants. Given the strong perception that a mentor be available for online students, providing this resource may be seen as a prohibitory expense. There was a single principal who did comment that providing a mentor was a serious concern for their superintendent. A reason for the schools not offering online learning programs could be, at least in part, the result of some financial barrier. Additional research focusing solely on not considering and considering schools is
needed to begin understanding the degree financial burden discourages administrators from offering an online course program.

**Recommendations for Successful Implementation**

In many areas of the country the need for highly qualified teachers, especially in rural areas, is one reason schools are considering online education (Watson & Ryan, 2006). Online course providers can supply teachers who meet the definition of “highly qualified” in their states, including any required certification (Watson & Ryan, 2006). As discussed in Chapter 2, there are several different models of implementation for online learning programs. It would be difficult to generalize which of the models discussed would be most appropriate for the entire population in the current study, and in fact, there likely is no single best model for all high schools in the region. Using the results of the current study, several components of an effective and successful online learning program can be suggested, regardless of the larger model employed.

**Only as an Alternative**

First, it is clear high school administrators feel the online courses should only be used as an alternative; to broaden the scope of courses offered that would otherwise not be available to students. There was strong sentiment that the traditional classroom is the best place for students for a number of reasons including: social development, teacher support, learning styles, and student achievement. Online courses should only be an alternative to the traditional classroom, when traditional courses are not offered by the school or for remediation for a course previously taken in the traditional classroom.
Additionally, 90% of administrators agreed or strongly agreed that online learning was an appropriate media for delivering courses to students who not by choice are homebound.

Assess Student Disposition

Secondly, administrators provided considerable evidence they are concerned about students’ ability to succeed in online courses. Administrators did not think online learning was an “easy out” for students to pass a course. Principals in particular felt students needed to be independent and responsible learners in order to be successful in online courses. Several administrators offered comments doubting the ability of their students to have the motivation and self-directed learning skills online courses require. One principal stated that online learning is only appropriate for the most gifted students. In addition, administrators felt online learners must have the technological skills to be successful. These perceptions all point toward a policy by which students would have to be approved by a teacher, counselor, or principal before enrolling in an online course. This may help reduce the attrition rate and poor performance of students who, in the eyes of an adult educator, are less suited for an online learning experience.

Utilizing a Mentor

Lastly, there was no survey item dealing specifically with the need for a mentor who would aid in keeping students on track during an online course. Administrators did make it clear in the open-ended comments that this was a critical component of their online learning program. Some went as far as to say their students could not be successful without a mentor present. Providing a set time each day where online students can gather at one place and have the support of a mentor is important for student achievement. This
not only helps to keep students on task, but also fights the isolation sometimes experienced by online learners (Marcel, 2003; McInerney & Roberts, 2004). In addition, this environment would also help support and develop social skills some argue are lacking in online course environments. Students not only have the support through face to face interaction with the mentor, they would also have the opportunity to discuss their experiences with other students.

Directions for Future Research

This was an exploratory study which created many more questions than it answered. The primary goal was to begin to understand superintendents’ and principals’ perceptions and uses of online learning in Appalachian Ohio high schools. The research questions intended to reveal the superintendents’ and principals’ perceptions of the purpose and characteristics of online learning, and issues surrounding online learning which need to be addressed when implementing an online learning program.

Given the relatively surprising results regarding the number of high schools offering online learning opportunities, this study has produced a number of avenues for future research. These can be divided into two general areas: research focusing on adopter high schools and research targeting those schools not offering online learning opportunities (considering and not considering schools). As there was little data to inform the author about the use of online learning by the schools in the population, the current study and associated instrument was not constructed nor intended to answer questions of finer resolution. More specific questions based on the outcome of the current study would clarify the effectiveness of specific online learning usage patterns.
Adopter Schools

For adopter schools we have little to no information regarding how high schools are providing the online courses in Ohio’s Appalachian region. The data provided in the open-ended items provides some insight. Respondents listed the Virtual Learning Academy, Tri-Rivers Educational Computer Consortium, and Jefferson County Educational Service Center in their comments as sources for their online learning programs. Further investigations of usage patterns could include: identifying the content providers that schools are using to provide online courses, determining the mean cost to offer the course, identifying the subjects being offered by the schools, determining the mean number of courses offered per semester/year, and determining the mean number of students enrolled in each course offered.

It is known from the current study that eligibility requirements and the types of courses (core, Advanced Placement, elective) were important issues for administrators, especially superintendents. Further investigation of adopter schools could include detailed descriptions of what requirements, if any, students must fulfill to be eligible to enroll in online courses. If students are eligible, it would also be helpful to know the types of courses in which students are allowed to enroll. Based on the data from the current study, there is strong support by principals and superintendents alike to utilize online courses to broaden the scope of course offerings in general and Advanced Placement courses in particular. It would be beneficial to know what types of courses schools are offering and whether or not there are restrictions on the types of online courses which count towards graduation.
The current study identified the use of a mentor to be an important component of student success in an online course, even though it was not emphasized in the literature or specifically addressed in any of the closed-ended survey questions. For adopter schools, it would be helpful to know how many of the online programs utilize a mentor, determine the responsibilities and tasks of the mentor, and whether or not the use of the mentor incurred an additional financial burden on school resources. Do schools using a mentor meet with students every day or every week, and is there a specific time and place reserved at school for online students and mentor to meet together and complete online course work? More information regarding how a mentor is incorporated in the online program, and how well that incorporation is working, is needed in order to make better recommendations for other schools in the Appalachian Ohio region.

Several administrators reported negative experiences with online learning. A line of research focusing on those schools that have tried online learning with untoward results may reveal what is and is not working in those particular environments. Those administrators, especially principals and teachers, who have direct experience watching and interacting with students who have taken online courses, know the problems encountered during the process. The barriers to online learning they could identify may provide unique insight into areas where program improvements could be made or reveal situations where online courses are inappropriate.

The current study provided no information regarding the academic achievement of students who have taken online courses through their high school’s online learning program. A detailed investigation of students who have successfully completed online
courses would help indicate what types of implementations have worked well in the high schools. For students who were high achievers in online courses, it would be beneficial to know: if those students were described as having the characteristics necessary to excel in online courses (highly motivated, disciplined, and self-directed; Marcel, 2003; Smith, 2002; Smith, Clark, & Blomyer, 2005); did they work on their courses on a regular dedicated schedule; what percentage of the coursework was done primarily from a school computer, from a home computer, or from other locale; how important was support from a mentor, parent, peer, or other person in their success; what type and amount of interaction occurred with the online course teacher and classmates and in what ways, if any, did these interactions positively contribute to the course.

At the other end of the spectrum, it would be just as beneficial to identify students who have taken an online course and either withdrew before completion or experienced low achievement. By considering responses to the same list of questions above for situations resulting in low achievement, correlations could be made between achievement and the variables described in order to identify those variables which are most likely to affect achievement.

Considering and Not Considering Schools

High schools not offering online programs at the time of this study (considering and not considering schools) provide another branch of viable research. We have some indication from the current study why administrators have decided not to participate: the perception that the traditional classroom is the best learning environment for students, administrators’ perceptions of online courses lacking components important to cognitive
and social development, perceived lack of student motivation to be successful in online courses, not enough student interest or too few interested students, distrust in the curriculum or student ethic, and administrators who are unfamiliar with the technology. Research aimed specifically at these schools to identify the full scope and depth of reasons for not participating may help other schools avoid potential pitfalls and assess whether or not they are positioned to offer online learning opportunities.

Target Populations

There are several groups not considered in the current study that could provide valuable information as to why online courses should or should not be offered to high school students. Each deserves focused attention. Future research projects could specifically target the following groups, all of which may provide a unique perspective on the topic: educational service centers, board of education members, students, teachers, counselors, and parents. This data would help create a more complete picture of the advantages and disadvantages of a particular online learning program in a particular environment. For practical reasons, the current study could not take into account all these sources of information. It aimed only to survey two groups of administrators who likely have significant influence on decisions made within schools and school districts (Coffland & Strickland, 2004; Glatthorn, 1997; Shuldman, 2004; Ubben & Hughes, 1997).

In some ways, the intent of this study was to explore whether or not online learning opportunities were available to Appalachian Ohio public high school students; and if not, why. More schools were found to offer online learning opportunities than was
expected. The percentage of adopter schools in the study was relatively larger than the national average for rural schools. Even though there were more than expected ‘adopter schools,’ it was clear from the open- and closed-ended items that online learning opportunities should only be used as an alternative to the traditional classroom learning environment. There was evidence that superintendents and principals approved of online learning opportunities when traditional classes were not available for students, to provide a wider variety of Advanced Placement classes, for homebound students, and for remediation. But again, these should only be provided when traditional courses are not available or practical. Much more research is needed to understand what is and is not working for schools who offer online learning opportunities, and the specifics regarding number of courses offered, frequency of course offerings, student completion rates and achievement, among others. This study has opened the door to many paths for additional research.
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Students. Report prepared for the North Carolina Department of Public Instruction.


Hodas, S. (1993). *Technology Refusal and the Organizational Culture of Schools*. Horse Horse Lion Lion, Seattle, WA.


Senge, P.M., Kleiner


Zigerell, James (1984). *Distance Education: An Information Age Approach to Adult Education*. The National Center for Research in Vocational Education, The Ohio State University, Columbus, Ohio.

APPENDIX A

Electronic communication permitting the use of Figure 3.1.
Scott,

Here is a new version that you can use. Let me know if you need any changes made. It won't take any time so don't hesitate to ask. The emf version usually looks best if you are inserting into Word.

Darren

Scott Robison wrote:
> 
> Darren,
> 
> Any luck with the picture? I'm supposed to give the dissertation to
> committee tomorrow.
> 
> Thanks,
> 
> Scott
> 
> Scott Robison
> IT Support Specialist
> College of Education
> 215 McCracken
> Ohio University
> Athens, OH 45701
> 740-593-4451
> 
> --

Darren Cohen
GIS Project Manager
Voinovich Center
Ohio University
Bldg 22, The Ridges
Athens, OH 45701
(740) 597-1753
APPENDIX B

*Electronic communication permitting the use of researchers’ instruments.*
Scott - Yes, I give permission for you to use my survey, in your edited version. My dissertation is copyrighted (2003). I have not published my survey elsewhere, although a Catholic Journal is currently looking at my dissertation.

I do ask that your study indicate how you utilized my survey and my dissertation and cite me appropriately.

With regard to Dr. Augustine-Shaw, I looked in the KS Directory of Schools for 05-06. She is still the superintendent at:
Mulvane USD 263  
122 N 1st Ave, Box 130  
Mulvane, KS 67110  
316-777-1102  
dausustine-shaw@usd263.k12.ks.us

You asked for a few additional comments. I was very pleased with my return rate of 66%. I did an initial mailing on 3/21/03 and a follow-up to non-responders on 4/10/03. As a high school administrator, I would advise you to contact your principals no later than late April. All months are busy for school administrators, but May is especially brutal! Your survey could easily be pushed aside during that month. This is my opinion, but one borne out of years of experience.

Also, I'm glad to see you gave responders an even number of choices (4). One of my professors stressed this with us. When you do an odd number (like the usual 5), responders often gravitate toward the middle, basically an answer that tells you very little about his/her opinion.

I re-attached your survey here so that my dissertation advisor at KU might also see it.

I would be interested in seeing your results. Good luck with your study there at the University of Ohio.

CONFIDENTIALITY NOTICE: This message is from Rebecca Heidlage. The message and any attachments may be confidential or privileged and are intended only for the individual or entity identified above as the addressee. If you are not the addressee or if this message has been addressed to you in error, you are not authorized to read, copy, or distribute this message or any attachments. I ask that you please delete this message and any attachments and notify the sender by return email.

Dr. Rebecca Heidlage, Associate Principal St. Thomas Aquinas High School  
11411 Pflumm Road  
Overland Park, KS 66215-4816  
913-319-2420
Scott – Thanks for contacting me & Good Luck! I had pretty good luck with the response/return rate through the process I used so you might take a look at that to see if it fits your needs. Setting parameters for the actual implementation of on-line learning is an important piece so you might think about clarifying #35 in a way that fits your initiative and to see if better results would be obtained (i.e., setting a start/end time for the class or taking a different angle on the structuring of the class important to teachers and the quality of the experience/accountability). Just a thought. Citing my work is fine. ☺ Thanks and have fun!

Donna Augustine-Shaw, Ed.D.
Superintendent of Schools, U.S.D. #263
122 N. 1st
PO Box 130
Mulvane, KS  67110
316-777-1102
316-777-1103
APPENDIX C

Letter sent to educational and research professionals requesting their review of survey tool before sending it out to superintendents and principals.
March 7, 2006

Dear

Hello! My name is Scott Robison and I am a doctoral candidate at Ohio University. I am very interested in documenting the perceptions of, and experiences with online learning in Appalachian Ohio high schools. In this context, online learning refers to complete courses delivered to students via the Internet. This study will help determine the role online learning plays in the region’s high schools, the factors facilitating and inhibiting online learning, and the needs of schools before implementing online learning programs.

As you are an educational leader and expert, I would appreciate your willingness to review and comment on the enclosed survey before it is mailed to all district superintendents and high school principals in the Appalachian Ohio counties. Your feedback is essential for ensuring the survey is clear when it is distributed.

Please review and include your comments on the back of the survey regarding the clarity of the items and/or suggested modifications. Please return the survey with your comments in the enclosed stamped envelope before March 14.

Thank you for time and effort with this!

Sincerely,

Scott Robison
Information Technology Specialist
College of Education
Ohio University
Athens, OH 45701
740-593-4451
APPENDIX D

_Initial letters notifying recipients they were to soon receive a survey and inviting their participation._
March 31, 2006

Dear Principal:

This is an advanced notification for a questionnaire you will receive in the mail in the next several days. I am the Information Technology Support Specialist for the College of Education at Ohio University. I am administering a questionnaire to examine the perceived utility of online learning offered through public high schools in the Appalachian Ohio region as part of my dissertation. I am currently working on a program that will provide regional high schools an economical way to offer online courses through their brick and mortar buildings, thereby retaining ownership of students and the funding they bring to your school.

As the questionnaire should only take 15-20 minutes to complete, I would greatly appreciate your time in participating. Your responses will be confidential and the results of the study will be made available to you during the summer 2006. I am requesting that the questionnaire and consent form be returned in the self-addressed envelope by Friday, April 21.

Thank You!

Scott Robison
IT Support Specialist
College of Education - Ohio University
Athens, Ohio 45701
740-593-4451
robison@ohio.edu
March 31, 2006

Dear Superintendent:

This is an advanced notification for a questionnaire you will receive in the mail in the next several days. I am the Information Technology Support Specialist for the College of Education at Ohio University. I am administering a questionnaire to examine the perceived utility of online learning offered through public high schools in the Appalachian Ohio region as part of my dissertation. I am currently working on a program that will provide regional high schools an economical way to offer online courses through their brick and mortar buildings, thereby retaining ownership of students and the funding they bring to your schools and district.

As the questionnaire should only take 15-20 minutes to complete, I would greatly appreciate your time in participating. Your responses will be confidential and the results of the study will be made available to you during the summer 2006. I am requesting that the questionnaire and consent form be returned in the self-addressed envelope by Friday, April 21.

Thank You!

Scott Robison
IT Support Specialist
College of Education - Ohio University
Athens, Ohio  45701
740-593-4451
robison@ohio.edu
APPENDIX E

Principal and Superintendent Online Learning Surveys.

NOTE: The surveys were distributed with a larger font and smaller margins, but displayed here with formatting constraints. Also level of agreement was not abbreviated as below.
Principal Online Learning Survey

Online learning (courses delivered via the Internet, through your school) has been successfully used in Appalachian Ohio districts to supplement the traditional curriculum by allowing schools to offer courses that otherwise would not be available students. Offering online courses through your school may help in retaining students considering attending a school that does offer the courses he/she desires to take. In addition, homeschoolers in your area may enroll in online courses through your school. Both situations result in increased state funds for your school.

Item #1 (circle one letter):
I would describe our status with online learning as:

a) Not offering online learning options for students in my high school
b) Considering online learning options for students, but not yet implemented
c) Currently offering online learning options to students in my high school

Please respond to the following items using the scale at right (circle number):
SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

To what extent do you agree or disagree that the PURPOSE of online learning is to provide:

<table>
<thead>
<tr>
<th>Purpose</th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. An opportunity to take courses not offered through your high school</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. An opportunity for a student to avoid a course scheduling conflict</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. An opportunity to take remedial courses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. An opportunity to take a wider variety of Advanced Placement courses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Greater individualized instruction to better meet varying learning styles of students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. To provide an alternative learning environment for students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Instructional services for homebound students (i.e., at home, but not by choice)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Enhanced instructional services for special education students (including gifted students)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. An opportunity for home-schooled students to take courses through your school</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. A flexible learning opportunity for students to take courses (anytime, anyplace)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. An opportunity to develop the skills needed to learn and work in a technological society</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Is there anything else you would like to comment on regarding the purpose of online learning? (use reverse side if needed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Respond to the following items using the scale at right (circle number):

**To what extent do you agree or disagree that online learning:**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>Provides an opportunity to globally interact and share with students and experts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.</td>
<td>Increases inequities by relying on students' ability to access technological resources</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16.</td>
<td>Provides an opportunity to interact with other local high school students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17.</td>
<td>Incurs an unjustified financial burden on local high schools</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18.</td>
<td>Diminishes parental involvement in students' educational experience</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19.</td>
<td>Incurs an unreasonable financial burden on parents/students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20.</td>
<td>Requires independent and responsible learners</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21.</td>
<td>Discourages teacher-student interactions in the learning process</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>Requires students to have technological skills in order to be successful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23.</td>
<td>Best serves older students (e.g., juniors and seniors)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24.</td>
<td>Provides an opportunity to prepare for online learning experiences encountered after high school graduation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25.</td>
<td>Isolates students from one another in the learning process</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26.</td>
<td>Broadens students' learning opportunities, beyond what the school offers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27.</td>
<td>An opportunity to use technology to improve education</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28.</td>
<td>Presents an easy way for students to pass courses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29.</td>
<td>Detracts from the building of community in schools</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30.</td>
<td>Is an appropriate alternative to the traditional high school classroom educational experience</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31.</td>
<td>Is void of diversity issues related to language, geographic location, economic and cultural background</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

32. Please comment on other characteristics of online learning you feel should be addressed: (use reverse side if needed)
Respond to the following items using the scale at right (circle number):

**To what extent do you agree or disagree schools must address the following issues BEFORE IMPLEMENTING an online learning program:**

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. Policy stating the eligibility requirements for students to enroll in online courses (G.P.A., grade level, learning style, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. Gain the support of the online learning program by teachers and administrators</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. Adequate computer equipment for students to take online courses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. Policy limiting the number of online courses students can enroll in each semester</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. Policy addressing who is responsible (district, school, parents/students) for the cost (enrollment fees, books) of online courses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. How schools will manage the academic records for students taking online courses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. Whether or not schools will provide teachers who are trained and willing to teach online courses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. Policy addressing the types of online courses (core, elective, Advanced Placement, etc.) that count toward students’ graduation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. Policy addressing the number of online courses accepted for credit toward graduation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. Whether or not mentors will supervise students to keep them on track and honest with their work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

43. Please provide any additional comments regarding issues that must be addressed before implementing an online learning program through your school (use reverse side if needed):

---

44. **The total** number of years I have been a secondary school principal is: ____________________.
45. The number of computers with an Internet connection in my building accessible to students: ____.
46. The enrollment of my high school (grades 9 through 12): ____________________________.
47. Number of traditional Advanced Placement (AP) courses offered at my school: ____________.
48. Were you previously aware that students could take online courses from school rather than at home? ______

Please check the box if I may contact you to discuss your responses in more detail. □

Thank you for your time!
Superintendent Online Learning Survey

Online learning (courses delivered via the Internet, through schools in your district) has been successfully used in Appalachian Ohio to supplement the traditional curriculum by allowing schools to offer courses that otherwise would not be available students. Offering online courses through your school may help in retaining students considering attending a school that does offer the courses he/she desires to take. In addition, homeschoolers in your area may enroll in online courses through your district. Both situations result in increased state funds for your school.

Item #1 (circle one letter):
I would describe our status with online learning as:
   d) Not offering online learning options for students in my high school
   e) Considering online learning options for students, but not yet implemented
   f) Currently offering online learning options to students in my high school

Please respond to the following items using the scale at right (circle number):
SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

To what extent do you agree or disagree that the PURPOSE of online learning is to provide:

2. An opportunity to take courses not offered through your high school 1 2 3 4
3. An opportunity for a student to avoid a course scheduling conflict 1 2 3 4
4. An opportunity to take remedial courses 1 2 3 4
5. An opportunity to take a wider variety of Advanced Placement courses 1 2 3 4
6. Greater individualized instruction to better meet varying learning styles of students 1 2 3 4
7. To provide an alternative learning environment for students 1 2 3 4
8. Instructional services for homebound students (i.e., at home, but not by choice) 1 2 3 4
9. Enhanced instructional services for special education students (including gifted students) 1 2 3 4
10. An opportunity for home-schooled students to take courses through your school 1 2 3 4
11. A flexible learning opportunity for students to take courses (anytime, anyplace) 1 2 3 4
12. An opportunity to develop the skills needed to learn and work in a technological society 1 2 3 4
13. Is there anything else you would like to comment on regarding the purpose of online learning?
   (use reverse side if needed)
Respond to the following items using the scale at right (circle number):

To what extent do you agree or disagree that online learning:

14. Provides an opportunity to globally interact and share with students and experts  
15. Increases inequities by relying on students' ability to access technological resources  
16. Provides an opportunity to interact with other local high school students  
17. Incurs an unjustified financial burden on local high schools  
18. Diminishes parental involvement in students' educational experience  
19. Incurs an unreasonable financial burden on parents/students  
20. Requires independent and responsible learners  
21. Discourages teacher-student interactions in the learning process  
22. Requires students to have technological skills in order to be successful  
23. Best serves older students (e.g., juniors and seniors)  
24. Provides an opportunity to prepare for online learning experiences encountered after high school graduation  
25. Isolates students from one another in the learning process  
26. Broadens students' learning opportunities, beyond what the school offers  
27. An opportunity to use technology to improve education  
28. Presents an easy way for students to pass courses  
29. Detracts from the building of community in schools  
30. Is an appropriate alternative to the traditional high school classroom educational experience  
31. Is void of diversity issues related to language, geographic location, economic and cultural background  
32. Please comment on other characteristics of online learning you feel should be addressed:  
(Use reverse side if needed)
Respond to the following items using the scale at right (circle number):

**To what extent do you agree or disagree schools must address the following issues BEFORE IMPLEMENTING an online learning program:**

33. Policy stating the eligibility requirements for students to enroll in online courses (G.P.A., grade level, learning style, etc.)
   SD  D  A  SA
   1  2  3  4
34. Gain the support of the online learning program by teachers and administrators
   SD  D  A  SA
   1  2  3  4
35. Adequate computer equipment for students to take online courses
   SD  D  A  SA
   1  2  3  4
36. Policy limiting the number of online courses students can enroll in each semester
   SD  D  A  SA
   1  2  3  4
37. Policy addressing who is responsible (district, school, parents/students) for the cost (enrollment fees, books) of online courses
   SD  D  A  SA
   1  2  3  4
38. How schools will manage the academic records for students taking online courses
   SD  D  A  SA
   1  2  3  4
39. Whether or not schools will provide teachers who are trained and willing to teach online courses
   SD  D  A  SA
   1  2  3  4
40. Policy addressing the types of online courses (core, elective, Advanced Placement, etc.) that count toward students’ graduation
   SD  D  A  SA
   1  2  3  4
41. Policy addressing the number of online courses accepted for credit toward graduation
   SD  D  A  SA
   1  2  3  4
42. Whether or not mentors will supervise students to keep them on track and honest with their work
   SD  D  A  SA
   1  2  3  4
43. Please provide any additional comments regarding issues that must be addressed before implementing an online learning program through your school (use reverse side if needed):

44. The total number of years I have been a superintendent is: ___________________________.
45. The approximate enrollment of high school students in my district (grades 9 through 12): _______.
46. Were you previously aware that students could take online courses from school rather than at home? _______

Please check the box if I may contact you to discuss your responses in more detail. □
Thank you for your time!
APPENDIX F

Principal and superintendent survey packet cover letters requesting their participation in the surveys.

NOTE: The superintendent and principal cover letters were only one page, displayed here with formatting constraints.
April 7, 2006

Dear

My name is Scott Robison, and I am the Information Technology Support Specialist for the College of Education at Ohio University. As part of my research and the online course program I am developing for area high schools, I am conducting a survey of high school principals and district superintendents across Ohio’s twenty-nine county Appalachian region regarding perceptions and experiences regarding Internet-based high school courses.

I will use the survey to identify current and intended uses of online learning, as well as attempt to identify key concerns of administrators regarding the use of this method of teaching and learning in education. Research has shown that the significant factor in technology innovation and implementation in schools is the disposition of administrators toward technology.

Your input as school principal is very important. I intend to share the results of this study with you, educational leaders of this region, and with the Ohio Department of Education. With your help, we can address the inequities between alternative forms of education offered by schools in our region and other areas of the state and country.

I have enclosed a letter from Dr. Richard Fisher, Executive Director of the Coalition of Rural and Appalachian Schools (CORAS), who is a strong supporter of regional school districts and this project.

Please complete the 15-20 minute survey and return it along with the signed consent form (all yellow sheets) in the self-addressed stamped envelope by April 14, 2006. The surveys are coded for administrative purposes only. All information will be kept confidential. Neither your name nor your school will be identified in the research findings. By reading, signing, and returning the enclosed informed consent form, you indicate your consent to participate in this study. This research study has been approved by Ohio University and the Office of Research Compliance. If you have questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, Ohio University, (740) 593-0664. If you would like additional information concerning this study before, during, or after its completion, please feel free to contact me directly.

Thank you for your time and effort,

P.S. Respondents of four randomly drawn returned surveys will each receive a 512mb USB drive for storing and transferring your important computer files!
Scott Robison, M.S.
Principal Investigator
Instructional Support Specialist
Ohio University – College of Education
Athens, Ohio 45701
740-593-4451
robison@ohio.edu

Dr. Teresa Franklin, Ph.D.
Faculty Supervisor
Associate Professor
Ohio University – College of Education
Athens, Ohio 45701
740-593-4561
franklit@ohio.edu
April 7, 2006

Dear

My name is Scott Robison, and I am the Information Technology Support Specialist for the College of Education at Ohio University. As part of my research and the online course program I am developing for area high schools, I am conducting a survey of high school principals and district superintendents across Ohio’s twenty-nine county Appalachian region regarding perceptions and experiences regarding Internet-based high school courses.

I will use the survey to identify current and intended uses of online learning, as well as attempt to identify key concerns of administrators regarding the use of this method of teaching and learning in education. Research has shown that the significant factor in technology innovation and implementation in schools is the disposition of administrators toward technology.

Your input as district superintendent is very important. I intend to share the results of this study with you, educational leaders of this region, and with the Ohio Department of Education. With your help, we can address the inequities between alternative forms of education offered by schools in our region and other areas of the state and country.

I have enclosed a letter from Dr. Richard Fisher, Executive Director of the Coalition of Rural and Appalachian Schools (CORAS), who is a strong supporter of regional school districts and this project.

Please complete the 15-20 minute survey and return it along with the signed consent form (all yellow sheets) in the self-addressed stamped envelope by April 14, 2006. The surveys are coded for administrative purposes only. All information will be kept confidential. Neither your name nor district will be identified in the research findings. By reading, signing, and returning the enclosed informed consent form, you indicate your consent to participate in this study. This research study has been approved by Ohio University and the Office of Research Compliance. If you have questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, Ohio University, (740) 593-0664. If you would like additional information concerning this study before, during, or after its completion, please feel free to contact me directly.

Thank you for your time and effort,

P.S. Respondents of four randomly drawn returned surveys will each receive a 512mb USB drive for storing and transferring your important computer files!
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Dr. Teresa Franklin, Ph.D.
Faculty Supervisor
Associate Professor
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Athens, Ohio 45701
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APPENDIX G

Letter of support for survey packet
Online Learning Survey - Letter of Support

Dear Superintendent/Principal,

The Coalition of Rural and Appalachian Schools (CORAS), an advocate for improving the educational opportunities available to young people in the region, encourages superintendents and principals to complete and return the enclosed Online Learning Survey.

The purpose of the survey is to locate existing online learning programs in Ohio, determine current and future uses of online learning and identify major barriers educators face regarding the implementation of this technological innovation. Your input as a school administrator is extremely important. By completing the survey you will provide information that will give us an excellent opportunity to highlight the educational needs of the Ohio Appalachian region related to expanding online learning opportunities for students.

Online learning is increasingly being used by public schools, especially rural schools, to extend the learning opportunities for students. A major selling point for online learning is that students are able to take advanced courses, as well as core courses, at times and places convenient to the student. Online learning also offers some financial benefits for your school district. They include: (1) students are able to take online courses through their home school and the school district retains all state funding; (2) schools can increase course offerings without additional teachers; and (3) the opportunity exists to attract students who may currently be homeschooled or enrolled in post secondary option programs.

The Coalition of Rural and Appalachian Schools does not endorse a specific online learning approach or provider. However, CORAS does support the collection of data that can be used as a planning tool that may ultimately assist schools in selecting among the various online learning alternatives.

Your efforts to improve the lives of children, and your support for public education in rural Appalachia Ohio, are truly appreciated. Thank you for assisting with this survey.

Sincerely,

Richard Fisher
Executive Director
APPENDIX H

Reminder card sent to non-respondents
April 20, 2006

You recently received a survey regarding your perceptions and experiences with online learning in Appalachian Ohio high schools. Your input is very important. Please take a few minutes to complete and return the survey. Your time and effort is very much appreciated.

Thank you!

Scott Robison
College of Education
Ohio University
robison@ohio.edu
APPENDIX I

*Letter sent to winners of incentive gift.*
Congratulations!

Thank you for taking the time to fill out and return the Online Learning Survey you were sent several weeks ago. As promised, four respondents were to be awarded a special thank you gift. Fortunately, your survey was one of the randomly drawn returned surveys!

Of the more than 260 surveys mailed to the 29 Appalachian Ohio Counties, 71% of district superintendents and 74% of high school principals completed and returned their survey. This was a great response and you are to be commended.

Thanks again you for your time and effort and enjoy your award!

Scott Robison, M.S.
Principal Investigator
Instructional Support Specialist
Ohio University – College of Education
Athens, Ohio 45701
740-593-4451
robison@ohio.edu
APPENDIX J

Survey consent form.

NOTE: The survey consent form was only one page, displayed here with formatting constraints.
Ohio University Survey Consent Form

Title of Research: ONLINE COURSES IN APPALACIAN OHIO HIGH SCHOOLS: PERCEPTIONS AND EXPERIENCES OF SUPERINTENDENTS AND PRINCIPALS

Principal Investigator: Scott Robison, M.S.
Co-Investigator: Teresa Franklin, Ph.D.
Department: College of Education

Federal and university regulations require signed consent for participation in research involving human subjects. After reading the statements below, please indicate your consent by signing and returning this form.

Explanation of Study
This research will investigate the experiences and perspectives of offering online (Internet-based) courses to their students. Online learning is becoming increasingly common in high schools across the country. Over half of the country’s K-12 schools offer some form of online learning. A greater proportion of rural than urban or suburban schools use online learning as an alternative to those offered in traditional formats. That said, it is unknown why so few schools in the Appalachian Ohio region offer online courses. This is the main focus of the study.

A survey will be used to collect the data and will take approximately 15-20 minutes to complete.

Risks and Discomforts
There are no identifiable risks or discomforts, given the respondents’ understanding that all information will remain confidential.

Benefits
The participants will benefit from the findings of the study as they understand how their school stands in relation to other regional schools regarding experiences and perceptions of online learning.

Confidentiality and Records
All data will be reported on a group basis and no results will be linked to any individual responses. All records will be secured by the primary investigator.

Contact Information
If you have any questions regarding this study, please contact Scott Robison at robison@ohio.edu, 740-593-4451, or Dr. Teresa Franklin at franklit@ohio.edu, 740-593-4561

If you have any questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, Ohio University, (740) 593-0664.
I certify that I have read and understand this consent form and agree to participate as a subject in the research described. I agree that known risks to me have been explained to my satisfaction and I understand that no compensation is available from Ohio University and its employees for any injury resulting from my participation in this research. I certify that I am 18 years of age or older. My participation in this research is given voluntarily. I understand that I may discontinue participation at any time without penalty or loss of any benefits to which I may otherwise be entitled. I certify that I have been given a copy of this consent form to take with me.

Signature ______________________________________________ Date ________________

Printed Name ____________________________________________
APPENDIX K

IRB Approval Form
A determination has been made that the following research study is exempt from IRB review because it involves:

Category 2 - research involving the use of educational tests, survey procedures, interview procedures or observation of public behavior

Project Title: Online Courses in Appalachian High Schools: Perceptions and Experiences of Superintendents and Principals

Project Director: Scott Robison

Department: College of Education

Advisor: Teresa Franklin

Rebecca Cale, Associate Director, Research Compliance
Institutional Review Board

Date: 3/6/06

The approval remains in effect provided the study is conducted exactly as described in your application for review. Any additions or modifications to the project must be approved by the IRB (as an amendment) prior to implementation.