The Opportunities and Challenges of Distance Education

in Secondary Family & Consumer Sciences Programs

by

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ABSTRACT

This study analyzed the opportunities and challenges of distance education for secondary family and consumer sciences programs. Comparisons are made between traditional face-to-face classrooms and asynchronous online educational experiences through an expanded literature review. Implications for both the learner and the instructor are examined with advantages and disadvantages highlighted. Based upon the research, it appears that on-line classes can be effective for some coursework. Online learning has been embraced as an avenue for personalizing the learning experience of students, but it should not be entered into without attention to the standards for best practices outlined by professional organizations.

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Chapter I: Introduction

The concept of distance education is not new, however technological advances have impacted the method of delivery. Beginning with correspondence courses through the postal service in the 1890s, the need for an alternative means of instruction was recognized. As technology changed, so did the formats for distance education. Radio, television, and video conferencing have been utilized to support learning (Matthews, 2002; Mehrotra, 2001; Mupinga, 2005). These methods offered mostly one-way communication with limited interaction with considerable time delay between the student and instructor. "The Internet is changing the very nature of society in ways unparalleled since the industrial revolution" (Aggarwal & Bento, 2002, p.59). The advent of the Internet and the digital revolution of the mid-1990s have advanced the next era of distance education – on-line learning.

The current trend in distance education is the creation of online learning programs. An emerging theme in offering course delivery has become anytime, anyplace, any subject (Discenza, Howard, & Schenk, 2002). Higher education institutions have incorporated distance learning through the Internet at an amazing rate. By 2001, approximately 90 percent of all two- and four-year institutions had distance education offerings for students (Bower & Hardy, 2004). Distance learning has been identified as the most significant phenomenon occurring in higher education today (Clark, 2007; Johnson, 2003; Smith, Clark, & Blomeyer, 2005) and web-based education is fast becoming the new method of teaching (Khosrow-Pour, 2002). At the collegiate level, online learning has gone beyond being a trend and has become "an accepted and permanent part of our teaching mix" (Hoffman, 2004, p.23). On-line learning has

trickled down to the secondary level. 38 states have established state-led online learning programs and 18 states housed 147 virtual charter schools serving over 65,000 students in 2006 (Watson, 2007). Susan Patrick, president of the North American Council for Online Learning (NACOL), notes in the report that the state of Michigan became the first state to require high school students to take at least one online course for graduation.

Statement of the Problem

Clearly secondary schools are interested in offering distance education opportunities to students, but the success that has been experienced at the post-secondary level does not necessarily translate into the world of secondary education (NEA, 2002). While some educators may conclude that distance education is the answer to many of the problems facing public education, others would point out that distance education would also create new problems. There have been political and philosophical objections raised and some question whether distance learning is socially desirable (Roblyer & Roblyer, 2006). While some stakeholders argue that distance education is a passing phase, others perceive it to be a method that has revolutionized the realm of education (Bower & Hardy, 2004). Concerns have been raised about the quality of instruction as well as student learning (Bender, 2003; Cavanaugh, 2004; Ouzts, 2006). Specific areas of concern include the level of student maturity, course structure, level of personal interaction, and methods of assessment (Bender, 2003).

Purpose of the Study

The purpose of this study is to identify the opportunities and challenges of distance education in secondary family and consumer sciences education and consider the applications for this curricular area.

Research Questions

1. Why the trend towards distance education?

2. What are the misconceptions about distance education?

3. What are the implications for the learner?

4. What are the implications for the instructor?

5. What are the applications for family and consumer sciences education?

Definition of Terms

Active learning "type of learning activity in which learners are engaged and

instruction is matched to learners' understanding, level of progression,

and interest" (Dooley, 2005, p. 269)

Asynchronous "not occurring at exactly the same time, people communicating

via asynchronous means receive, compose, and send their messages

when they deem convenient" (Broadbent, 2002, p. 211)

Authentic assessment "a method of determining whether learning objectives have

been met in which learners engage in activities similar to those that might

Take place in the real world outside formal schooling" (Cunningham &

Billingsley, 2003, p. 204)

Blog short for weblog, "creates an online journal or diary of comments, either

from a single blogger or from multiple members of a blog group"

(Neidorf, 2006, p. 25)

Distance education "process of delivering instructional resource-sharing

opportunities to locations where the learner and the instructor do not

physically meet at the same place or time" (Dooley, 2005, p. 276)

Hybrid course " a blend of on-line learning with face-to-face teaching" (Dooley, 2005, p. 281)

On-line " in direct communication with a computer" (Mantyla, 1999, p 153)

Portfolio " a collection of work that exhibits the learners' process, progress, and achievements" (Dooley, 2005, p. 289)

Scaffolding "supporting learning through providing the instructional support and conceptual frameworks that help the learner to learn difficult concepts or skills" (Cunningham & Billingsley, 2003, p. 210)

Synchronous "a type of communication in which those communicating do so at the same time" (Pratt, 1999, p. 191)

Virtual schools educational organizations that offer formal instruction through Internet- or Web-based methods" (Smith, et. al., 2005)

Limitations of the Study

A major limitation of this study is that much of the existing research focuses on college and university applications of distance education (NEA, 2002; Ronsisvalle & Watkins, 2005; Smith, et. al, 2005). Though online learning has become increasingly prevalent in secondary schools, little data exists. Evidence on student achievement is just beginning to be collected. "Care must be given when generalizing adult research to the K-12 student population" (Rice, 2006, p. 440).

Chapter II: Literature Review

Explaining the Trend

Traditionally school was characterized by the physical presence of teachers and students together (Russell, 2004). Distance education is any formal approach to instruction in which the majority of the instruction is conducted without the physical presence of an instructor (Mantyla, 1999; Mehrotra, 2001; Simonson, Smaldino, Albright & Zvacek, 2006). The biggest difference between previous distance education formats and web-based distance education is the ability for interaction without physical proximity (Monolescu, Schifter, & Greenwood, 2004; Simonson et. al., 2006)). Many instructors utilize a hybrid or blended course approach. This method incorporates face-to-face instruction with a web-based component (Bender, 2003). "The proportion of courses that are taught entirely online is still comparatively low. While the numbers are growing, it is much more common for a blend of delivery methods to be used" (Inglis, 2007, p. 437). Distance education, often referred to as online learning, e-learning, web-based education, or virtual education can come in many forms. This paper will focus on asynchronous learning, which can be defined as a web-based experience that is accessible to the learner at any time from any place (Aggarwal & Bento, 2002).

Online learning is still in its infancy though schools have existed for thousands of years. Fundamental changes in society are occurring such as diversity awareness, technology advancements, and desire for twenty-four hour information availability. The public has grown used to a global communication network and having immediate access to information. Education that reflects these changes is expected (Davis & Roblyer, 2005). The concept of online learning is changing the nature of traditional public

classroom instruction more rapidly than any other initiative and we are seeing significant growth in distance education programs (Davis, 2005; Durrington, Berryhill, & Swafford, 2006; Mehrotra, 2001; Pape, 2005; Simonson et. al, 2006). Most educators have recognized the potential for connection, information, and communication available through the Internet (Comeaux, 2002) and are interested in developing that potential. Distance education is no longer a future possibility, "it is a current reality creating new opportunities and challenges for educational institutions; a reality offering students expanded choices in where, when, how, and from whom they learn" (Mehrotra, 2001, p. ix).

Factors that have been important in stimulating an interest in distance education include the expansion of technology not only in schools, but in society as a whole; the increasing legislative requirements for all students to receive a high-quality education from highly qualified instructors; parental and political demands for more education options; and concerns about shortages of teachers in certain disciplines and geographic areas (Zucker & Kozma, 2003).

Equity and access were two concerns that spawned the initial growth in online learning. The strong interest in expanding opportunities and providing equal opportunities for all learners has a history in small and rural schools (Smith, 2005). In the U.S. Department of Education's National Education Technology Plan (NEPT), providing every student access to e-learning is listed as an action goal. Additionally, encouraging the use of e-learning to meet No Child Left Behind (NCLB) requirements is also a goal (U.S. Dept. of Ed, 2005).

Some of the strongest pressures for changes in education are coming not from educators, but from students. The new generation of students is coming to expect more active ways of seeking knowledge (Palloff, 1999). Students are demanding 21st century education that is: independent of time and space; oriented toward goals and outcomes; centered on the learner; geared towards active, hands-on learning; and able to accommodate differences in skills (Aggarwal & Bento, 2002). "Learner focused education has become a preferred approach to teaching…Students become more engaged in the learning process and their critical thinking skills are enhanced" (Saiki, 2007, p. 54). Students also appreciate and benefit from the convenience and flexibility of online learning. It is advantageous not to have to spend the time or money getting to class (Bender, 2003).

Public education is embracing online learning today, just as a century ago when educational institutions and practices are modeled on "prevailing industrial examples of work and organization. Particularly in the United States where an overriding intended effect of formal education is to prepare students to fill roles within the prevailing economic system" (Hantula & Pawlowicz, 2004, p. 143).

Online education is one tool school boards and administrators could use to create learning based on rigor, relevance, and relationships. Web-based instruction is seen as an avenue to assist students in preparing to be lifelong learners. Students have opportunities to study topics in depth, collaborate with industry mentors, and develop independent learning skills (Pape, 2005). Job skills, like computer literacy, are necessary for the 21st century and are becoming increasingly valuable (Mantyla, 1999). As our economy becomes increasingly knowledge-based, the demand for workers with technology skills

has grown (Bower & Hardy, 2004). Experiences with asynchronous learning have the potential to prepare learners for adult roles and being better prepared to balance work and family obligations.

E-learning is already a major component of education and training beyond K-12 in post-secondary education and corporate training Many educators think that online learning will equip students with skills to be lifelong learners that will serve them well throughout their lives (Bender, 2003). Secondary schools are being encouraged to incorporate online learning into instructional design, delivery, and implementation in order to prepare students for success in higher education and the world of work (NACOL, 2006).

In the fall of 2006, the state of Michigan adopted legislation and developed guidelines for online learning that require students participate in an online experience as part of requirements for graduation (Michigan Dept. of Education, 2006a). Initially, the State of Michigan appears to have strong support for online learning. However, upon further review, details of the guidelines note that the definition of an online experience is very broad and includes webquests, blogs, educational gaming, and online research. Also, the online experiences must total a minimum of 20 hours and can be collected across grades 6-12 (Michigan Dept. of Education, 2006b). What on the surface appears to be progressive legislation supporting distance education is merely a requirement for integrating technology. Courses that simply incorporate Internet components such as websites, e-mail, threaded discussions, and chat rooms are technology supplemented classroom based courses. These types of activities have been termed web-enhanced

courses but are distinctly different from web-based courses in which the majority of the interaction occurs electronically (Mehrotra, 2001).

At first glance, distance education appears to be a major deviation from current educational methods. If on-line learning is done well, there is no significant difference between distance learning and traditional classroom learning. Studies that have compared student performance using final grades as the indicator and course satisfaction using student evaluations of instruction ratings support that on-line courses are as effective as traditional face-to-face methods (Hauck, 2006; Russell, 1999; Simonson et. al, 2006). When students have been polled, their perception is that learning is not more effective using the Web (Kumar, 2002). Learning theories and principles that have been found to be successful in the traditional classroom "remain constant regardless of the delivery mechanism" (Mehrotra, 2001, p. 29).

A concern about distance education is that the American public will abolish the current educational system. School will turn into clicks and mortar (Weller, 2002). Just as "home video did not mean the death of cinema" (Weller, 2002, p. 163), distance education does not spell the end of teacher facilitated classrooms. It allows more choice for the consumer.

Distance education has been utilized to:

- Offer coursework not otherwise possible (e.g due to low enrollment)
- Access instructional expertise or material otherwise unavailable
- Present instructional material in a format better suited for some students' learning needs
- Maximize educational opportunities beyond traditional school hours

- Eliminate travel time between instructional locations

- Offer instruction to hospitalized, incarcerated, homebound, and other students physically unable to travel to a school site

- Provide services to students who may not function well in a social setting

- Offer services to home schooled students

- Permit students to set their own learning pace (NFES, 2006-803)

School districts who offer distance education options most frequently cite being able to offer courses not otherwise available at the school as a reason to support distance education. Distance learning demographics are highest in rural and small schools. "Instead of replacing conventional schools, virtual schools have expanded curricular options and extended teaching resources for students in those schools" (Clark, 2007, p. 484). Meeting the needs of specific groups of students and offering Advanced Placement courses were also frequently noted. Reducing scheduling conflicts, addressing growing populations and limited space, and generating more district revenues were also reasons reported (Setzer & Lewis, 2005).

Misconceptions about Distance Education

Palloff & Pratt (2001) warn:

"As academic institutions rush headlong into online distance learning, at least

two key assumptions are being made. It is assumed that teachers will know

how to teach in the online environment and that students will instinctively

know how to manage the learning process...the opposite is true. Faculty

need training and assistance in making the transition to the online environment,

and student also need to be taught how to learn online. " (p. 107)

Teacher preparation programs recognize that there is a need for teachers who are prepared to teach at a distance. Iowa State University is developing a pre-service teacher education model program to train personnel to teach K-12 virtual school students (Davis & Roblyer, 2005).

Because online learning is outside of the realm of direct experiences for many policy-makers and parents, many misconceptions exist. The public has expressed skepticism and even cynicism about how well an online class can teach students, especially among those who feel uncertain about technology (Bender, 2003). "Schools are responsive to local public demands for education reforms like integrating the latest technology into education, but slow to institutionalize such changes" (Clark, 2007, p. 485)

In his report for NACOL, John Watson of Evergreen Consulting Associates identifies some of the most common misconceptions. These include:

- Online learning is just a high-tech version of the old correspondence course.
- Online students spend all of their time in front of a computer.
- Online learning is essentially "teacher-less."
- Online courses are easy to pass – and easy to cheat in.
- Online learning is only good for highly motivated, highly able students (or conversely, only for dropouts and students in need of remediation).
- Online students are isolated from their peers and short-changed on important socialization skills.
- Online learning is much cheaper than face-to-face instruction. (Watson, 2006)

While some online programs may reflect these views, as more research is being conducted the findings indicate that most programs have the opposite as true.

Disputing the Misconceptions

#1 - Just a high-tech version of the old correspondence course

Most online courses have a high degree of communication and are very interactive.

This is a big shift from the correspondence courses of the past (Bender, 2003).

#2 – Students spend all their time in front of a computer

While many students spend substantial time at the computer regardless of taking an

online course, courses do utilize a variety of materials to complement content available

online (Bender, 2003; Hanna, et. al., 2000; Hardy & Bower, 2004; Mehrotra, et. al, 2001;

Turner, 2004)).

#3 – Essentially teacher-less

Most online teachers report that teaching online is more labor intensive than teaching

in the traditional classroom (Byington, 2002; Hardy & Bower, 2004; Palloff, 1999;

Wright, 2004). There seems to be an expectation that "the technology will do the work

for us" (Hoffman, 2004, p.1). The building blocks of learning are organized information,

interaction, nurturing, and clear communication. Technology does not create these

elements. Good instructional design combined with solid, interactive teaching is the

means to achieving them (Broadbent, 2002). Developing course content and structure

and continually updating and maintaining the availability of material is time consuming.

Instructors must spend substantial time preparing the syllabus, study guides, instructional

units, reference lists, links to Websites, assignments, and assessments. The labor-

intensive nature of teaching at a distance does not stop once the course has been

designed. Faculty is expected to maintain contact with all learners; provide detailed,

personalized, and timely feedback; and offer individualized consultation and guidance

and these activities create additional demands on time (Hardy & Bower, 2004; Mehrotra, 2001). Online learning is far from being teacher-less.

Additionally, the teacher's role is changing from that of expert on the topic passing along information to assisting students in building literacy skills so they can ask questions, define inquiry, research multiple sources, authenticate sources of information, process and synthesize data and information, draw conclusions, and develop action plans based on their new knowledge (Pape, 2005). On-line learning provides a significant shift from teacher-centered to student-centered learning, from passive to active learning. The instructor's role is less about informing the student and more about assisting the student. The instructor becomes a mentor, coordinator, and facilitator of learning who guides discussion and provides interactive learning experiences (Hardy & Bower, 2004; Mehrotra, 2001).

#4 – Easy to pass and each to cheat in

Assessment and grading does not go away when teaching in an online format. The concern that students are more apt to submit work that is not their own is addressed quite easily. Because of the personalized approach and individual attention received by students, teachers are very in tune to authenticity of work produced. Instructors are able to recognize a change in work quality and notice irregularities in communication patterns (Johnson, 2003; Watson, 2007). Many instructors assign an introductory essay to assess writing skills, gauge computer experience, and gather demographic information. (Turner, 2004). Cheating in online courses requires energy and planning, and may be more easily detected by the instructor (Johnson, 2003). Some online courses are labor intensive and require daily attention. It would be difficult to find someone willing to take on the task of

completing assignments if they were not enrolled. Policies related to academic honesty and consequences of plagiarism are usually made clear in advance.

#5 – Only good for highly motivated, highly able students

The typical consumer of distance education has historically been remote and isolated learners (Matthews, 2002). Other early adopters of online learning as an alternative to the traditional classroom have included students who are home-schooled, have health conditions, are at high-risk for dropping out, or have competing personal commitments (Ronsisvalle & Watkins, 2005). As noted by the then director of the Office of Educational Technology for the U.S. Dept of Education, Susan Patrick, students enrolled in virtual schools tend to be high performers who want to take advanced courses, or the may be students who are struggling with behavioral challenges, special needs, or physical limitations (Andrade, 2005). Online programs are mandated to follow federal and state laws regarding students with disabilities. Support services for special education students, modification of curriculum, and accessible design are necessary (Boyd & Moulton, 2004). Student support, both technical and academic, is critical to making online programs effective (Watson, 2007). Most programs identify a mentor or learning guide for the student and often this is a parent. Senator Sue Windels of Colorado, chair of the Senate Education Committee, believes that "to be successful in an online program, you have to have the 'mom factor'; - a very dedicated parent willing to oversee your work" (Andrade, 2005, p. 15).

#6 – Students are isolated from their peers and short-changed on important

　　　socialization skills

Social isolation is a potential result of an increase in use of technology, especially

when technology replaces traditional social interaction (Hantula, 2004; Watson, 2007).

To combat the issue of potential lack of socialization online students are highly

encouraged to seek out enrichment experiences through the school or community. Many

course projects require collaboration and conferencing which help develop socialization

skills. Groups, virtual teams, workgroups, and committees are formed to incorporate and

practice necessary communication skills. "Students live in an age where virtual teams are

an increasingly important reality of everyday life" (Shields, Gil-Egui, & Stewart, 2004,

p.120). Instructors commonly integrate various communication tools such as e-mail and

threaded discussions and require participation as part of a course grade. The

interpersonal dimension of the teacher-student relationship as well as the student-student

relationship is not only possible but potentially improved through computer-mediated

communication in an online teaching environment because of more frequent and personal

contact (Comeaux, 2002). Many online learners report that they end up knowing their

co-learners better than had they been in a class and been physically present with each

other (Hanna, 2000).

#7 – Much cheaper than face-to-face instruction

Often cost savings is one of the benefits of distance education touted. "When online

learning first became a major focus of interest for educational institutions, it was widely

believed that delivering courses online offered a major opportunity to reduce costs"

(Inglis, 2007, p. 437). In financially tight times with ever deepening budget cuts, brick-

and-mortar schools will have to make every effort to find creative and cost-effective solutions to continue providing the same quality of educational opportunities for their students. Distance learning is often looked to as one of these solutions. The National Education Association issued a manual that contended that online instruction is almost always more expensive than traditional, face-to-face instruction (Carr, 2001). The document was written to try to dispel the notion that dollars spent on faculty salaries could be decreased if a move was made to online courses.

On-line courses take both financial and human resource investments. One estimate approximated that to convert one hour of a class to a web-based equivalent would average 18 hours of development time. Using a standard 45 hour class and a fifty dollar per hour salary, including fringes, this would cost $40,500 (Boettcher, 2000). Of course, an institution can spend as much or as little as it chooses, but the resulting classes will differ in effectiveness and return on investment.

In addition to faculty salaries for development, additional costs are incurred for technology (infrastructure and software upgrades), support (in the form of a help desk and maintenance), and faculty training. The costs associated with the development of online distance education materials dictates that the materials be used as many times as possible to maximize the return on investment based upon the costs to produce these materials (Robinson, 2004).

Using per-pupil expenditures, the figures for distance education and traditional public school settings are quite comparable. (Watson, 2007; Zucker & Kozma, 2003). As of 2002, the reported per-pupil instructional expenditures from the National Center for Education Statistics were at $4,755 as a national average (St. John, 2007). It is important

to note that virtual schools typically do not provide many of the services available in the traditional settings (i.e. health, guidance, gymnasiums, fields, theaters, and laboratories). Also, students taking one or two online courses while still enrolled in public school actually represent an added cost to the school, not a substituted expense (Zucker & Kozma, 2003). "Variable costs are likely to increase because of the additional time taken to communicate in the written word, rather than the spoken word. Fixed costs are likely to increase because of the additional investment in infrastructure and support services" (Inglis, 2007, p.446).

Implications for the Learner

Opportunities

A student who has an interest in taking an online course may find it appealing for a variety of reasons. Flexible scheduling and working at an individualized pace from a convenient location are frequently cited (Kumar, et. al, 2002; Matthews, 2002; Podoll & Randle, 2005). According to Gibson (1998), what all distance learners want and deserve is:

- Content that they feel is relevant to their needs
- Clear directions for what they should do at every stage of the course
- As much control of the pace of learning as possible
- A means of drawing attention to individual concerns
- A way of testing their progress and getting feedback from their instructors
- Materials that are useful, active, and "interesting"

Providing an opportunity for students who do not feel comfortable speaking up in class, either due to language barriers, intimidation, or shyness, to have a voice is noted as a benefit of online instruction. For some learners, the traditional classroom may be overwhelming. A student may have a feeling of security in the anonymity of an online course, "rather than feeling embarrassed about making a certain remark when others are watching them in a campus class" (Bender, 2003, p.90). . Electronic communication seems to be less threatening than the pressures of speaking up in class. These students are more confident contributing comments online (Klassen & Vogel, 2003). Online forums tend to be considered a safe venue for asking questions that otherwise might go unasked (McFann, 2004).

Personality of the learner certainly plays a role in the perception of the online experience. Introverts tend to do particularly well online. By removing facial and body cues, introverts can easily establish a presence online and exhibiting characteristics of themselves that might otherwise have gone unnoticed (Palloff & Pratt, 2001). Time for thought and reflection is a luxury for the introvert and can enhance the learning process. Additionally, these students do not have to compete with the more extroverted students in order to be a part of the discussion.

The element of personal choice is a strong incentive for enrolling in online classes. Student learning is being personalized and is able to be extended beyond the traditional school day (Tucker, 2007). The learner can logon at an optimal time in their personal schedule rather than crowding between other activities (Bender, 2003). Formulating a response without classroom interruptions is also noted as a benefit of the online environment. Students have time to think and respond at whatever time best suits them

which has the potential to increase understanding (Podoll & Randle 2005; Weller, 2002). Learners are able to take their time, work when they are at their best, and reread especially if they missed information the first time (Bender, 2003). The continued availability of class discussion in a class forum area was found to be beneficial. Discussion questions and comments could be revisited at anytime. "The main points of the discussion were not wiped off the blackboard, taken away on a transparency never to be seen again, or forgotten on handouts stuffed in backpacks" (Byington, 2002, p.199).

Challenges

Learners who are independent, prefer working alone, and are confident about their abilities are expected to have the greatest success (Johnson, 2003). Not all learners will be comfortable or successful in an online environment. "Students perceive that virtual education programs place a heavy demand on students to be self-motivated and disciplined" (Kumar, 2002). E-learning requires self-directed, motivated, and independent learners with some level of competence and comfort in computer literacy (NSDC, 2001). Motivation seems to be a typical characteristic of successful distance learners. Few people learn at a distance if they're not really committed to learning (Gibson, 1998).

The autonomous learning style demanded by online courses necessitate a high degree of motivation. Strong study skills and habits should be in place before entering the world of distance education (Cavanaugh, 2007). For some students, staying on task as well as simply keeping up is problematic. "Studying any place, any time may become studying at no time for those who lack the academic discipline" (Zucker & Kozma, 2003, p.5).

An online learner must quickly establish comfort with the technology, comfort with predominantly text-based communication, and comfort with a higher level of self-direction than in a traditional classroom (Conrad & Donaldson, 2004). Online courses have a strong dependence on the printed word. "The ability to communicate in writing is crucial as currently this is the primary medium for communication" (Garrett & Francis, 2004, p. 249). The reading level of the student is an important factor for success in an online class. Since much of the interaction is written, a low literacy level could be a disadvantage to the learner. (Cavanaugh, 2004; Garrett & Francis, 2004; Hanna, 2000).

Learners may find being confronted by the large quantities of text stressful. There tends to be an ongoing cycle of reading and posting of messages when engaged in group discussions. Reading and responding to all the posts may be time consuming and confusing as well as perceived as busy work (Garrett & Francis, 2004; Wickersham & Dooley, 2006). Additionally, students often feel self-conscious about their writing ability. As the level of frustration increases, the level of commitment to participate in the group decreases, and students may drop out of the discussions completely, missing many important learning opportunities (McFann, 2004).

Communication between online learners appears to be more limited on the secondary level than at the post-secondary level. Most of the interactions that occur tend to be between teachers and students with little in-depth discussion among students (Zucker & Kozma, 2003). Student-to-student interaction takes time to develop. In an online format, it takes longer to get to know and build rapport with the other learners. Strong evidence exists "that students perceive interaction, student-to-student and student-to-instructor, to suffer as a result of virtual education" (Kumar, 2002, p. 140). An inability to meet and

discuss poses challenges for group dynamics (Durrington et. al, 2006). Rolling enrollments in high school courses also makes communication more of a challenge (Roblyer & Roblyer, 2006).

While introverted personality types tend to do well online, extroverts who are used to establishing themselves through verbal and social connections may have more difficulty. Extroverts also tend to process ideas out loud and can become frustrated in the asynchronous environment due to the absence of immediate feedback (Overbaugh & ShinYi, 2006; Palloff & Pratt, 2001; Zucker & Kozma, 2003).

Participation is part of the assessment in an online course. The quality of the responses is used to measure student learning (Kachel, 2005; Wickersham & Dooley, 2006). "If interaction is not an integrated, essential, and graded part of an online learning environment, the majority of students will never use it at all, and those who start to use it will generally decide that nothing is going on there and will stop using it" (Moallem, 2002, p.176). One e-learning student noted, "When I study online, there is no sitting in the back of the class. The instructor forces us to participate" (Broadbent, 2002, p.30). Unlike face-to-face courses where students can be in attendance and sit through the class period, in online courses there is no 'showing up'. They cannot sit passively. They must interact (Johnson, 2003). More attention and active participation is usually required in the online environment compared to the traditional classroom (Hoffman, 2004). Many online learners report spending more time on online courses than on traditional courses, in part out of interest and in part out of necessity (Zucker & Kozma, 2003).

One of the biggest differences for learners in distance education is that they have a greater responsibility for their learning than they would have in a traditional classroom

(Conrad & Donaldson, 2004; Mantyla, 1999; Simonson, et. al, 2006; Zucker & Kozma, 2003). "Due to the lack of an actual physical presence in a classroom, it is imperative for students to actively engage in communication with other students and the instructor" (Podoll & Randle, 2005, p. 18). There is a need for students to be more assertive in order to make their needs known to the instructor as non-verbal clues do not exist (Garrett & Francis, 2004).

Lack of time management skills and undefined educational goals have been identified as primary reasons for non-completion of online courses. Distance students in their late teens and early twenties are more at risk of non-completion because older students may be better able to work independently (Mehrotra, 2001). The characteristic of independence or self-direction is most frequently associated with success in e-learning (Guglielmino & Gugliemino, 2003). High school students are less experienced in both online courses and in structuring their own learning environment. Because of their lack of experience, additional monitoring and support, such as scaffolding, must be built into online course formats for this age group (Cavanaugh, 2007; Roblyer & Marshall, 2003, Smith, et. al., 2005).

Some studies suggest more than half of potential e-learners either never take advantage of e-learning possibilities or never finish their first program. There are several reasons for this statistic – poor course design, poor motivation, lack of relevance, other contstraints – but often the failure is due to the fact that the learners were simply not prepared to become e-learners (Piskurich, 2003). Unfortunately a high percentage of students who enroll in online courses earn poor grades or simply drop out (Zucker & Kozma, 2003; Mehrotra, 2001). Failure or dropping out is at a higher rate, up to 60-70%

of those enrolled, than traditional education classrooms (Roblyer & Roblyer, 2006). One reason for this can be a higher percentage of at-risk students being enrolled in distance education. Being uncomfortable using technology and difficulty accessing materials online can intensify a lack of interest, aptitude, or support (NFES 2006-803). Technical support is a critical factor in online course success and timely support to alleviate technical issues is necessary (Roblyer & Marshall, 2003; Watson, 2007).

Student performance and completion may vary based on a number of factors. Student readiness, curricular choices, content presentation, instructor-student interactions, local supervision and support, assignment and assessment rigor, and grading practices will affect performance (NFES, 2006-803). Students with good technical skills, effective interpersonal skills, and strong intellectual skills are most successful (Byington, 2002). Several guides, questionnaires, and assessments are available to help learners determine if e-learning is a good fit for their learning needs. Research indicates that questions about organizational skills, study habits, achievement beliefs, time management skills, technology skills, and reasons for wanting to take an online course are all relevant (Kachel, 2005, Mupinga, 2005, Roblyer, & Marshall, 2003).

Implications for the Instructor

Opportunities

Online teaching is best suited to those instructors who have the following characteristics:

- Prepared to spend more time developing materials and working with new methods
- Enjoy intellectual challenge

- Have the ability and willingness to learn new technology

- Have the ability to communicate clearly

- Ability to facilitate discussions

- Enjoy engaging in frequent & personalized student feedback

(Bender, 2003; Broadbent, 2002; Kachel, 2005; Schifter, 2004).

Instructors motivated to teach in a distance education environment are most interested in expanding teaching opportunities and see teaching at a distance as an intellectual challenge. Faculty members must be willingly involved as they are not highly interested in release time, merit pay, or other monetary rewards (Schifter, 2004). Commitment and sustained interest by faculty are critical factors in online course satisfaction from students (Lee, 2005). Online teaching appeals to instructors who are interested in professional development and want to discover new and diverse ways of teaching (Bender, 2003). Many have found that the changes required to teach in the online environment successfully also work in the face-to-face classroom. Using collaborative, interactive, active learning methods can enhance the traditional classroom experience of students (Palloff & Pratt, 2001) as well as being more thoughtful about teaching and communication (Bender, 2003).

Challenges

"Not every athlete can become a coach, nor does every teacher have the attributes to become an online facilitator" (Kachel, 2005, p.16). Distance education presents some challenges to even the most accomplished teacher. "We have learned that online teaching is challenging, it is not for everyone, and it requires careful preparation" (Zucker &

Kozma, 2003, p.104). One of the biggest challenges to overcome is the method of communication. Over 90 percent of communication occurs at the nonverbal level through eye contact, listening, and facial expressions. Instructors used to leading face-to-face discussions may have difficulty adjusting to the absence of body language and verbal cues.

Faculty time and workload are often barriers to implementing online courses. A common complaint about online instruction is the amount of time required (Bender, 2003; Comeaux, 2002; Orellana, 2006). It can be tempting for administrators to overload courses and increase enrollments (Orellana, 2006). They forget to monitor class size because there are no limitations due to physical space. Often, online teaching is viewed as a quick way to get content to learners. Many teachers see it, at first, as a potential time saver. This is not the case. The tasks of establishing a course framework and rethinking curriculum to adapt it to the online environment are time consuming and challenging (Hanna, 2000). It is suggested that faculty have reductions in obligations while teaching online courses. At least 50% of the instructor's time may be necessary at first (Kyrish, 2004). Although there is agreement that adapting a course to an online environment is labor-intensive, there is also agreement that the effort and risk involved is worth it (Comeaux, 2002).

Course design was cited as the most critical factor in creating an online interactive learning environment (Moallem, 2002; Olliver, 2004). Simply providing access to information is not the same as ensuring an enriching learning experience. Even when an instructor has taught a course on campus, adapting it for a distance learning mode requires careful thought and planning at least one or two semesters before offering it as

an online course (Mehrotra, 2001). Often those new to teaching online attempt to adapt courses by simply uploading and using previously developed lecture notes and PowerPoint slides (Ouzts, 2006). It is not acceptable to take existing face-to-face class material, post it one a Web site and claim the offering of an online course (Olliver, 2004). A good online experience requires more than just good content.

In order to do a good job of constructing online courses, faculty need to be provided with professional development related to both technical and curricular aspects of distance education (Cunningham & Billingsley, 2003; Kyrish, 2004; Mehrotra, 2001, Olliver, 2004, Palloff & Pratt, 2001; Watson, 2007). One danger is that too much attention is focused on the technology and not enough time is spent on the human element in distance education. "There is sometimes the impression gained that all human effort involved in learning and in the achievement of excellence has been removed by information technology and knowledge management" (Emurian, 2002, p. 125). Institutions must be willing to support their instructors by investing in instructional development and training so that they can be productive and effective through the use of technology (Bower & Hardy, 2004).

Lack of adequate instructor training is considered to be a significant barrier to adopting distance education courses. In the Guide to Teaching Online Courses the National Education Association states that most of the 86,000 new teachers who enter the profession each year begin without online teaching skills. According to the same document, online teachers should be expected to demonstrate the following skills:

- Understand the language of online education

- Revise/write course documents in Content Management Systems (CMS)

- Use CMS elements effectively to facilitate course design

- Design, evaluate and deliver online course to appropriate online design and content standards

- Use technology to support course design

- Revise course document to maintain accuracy and currency

- Incorporate Internet resources into course documents

- Communicate an appropriate online tone during course delivery

- Foster student-to-student discussion

- Foster student-to-student collaboration

- Provide appropriate and timely feedback to students

- Participate and be present in an online course, meeting student needs and school expectations for teacher presence

- Intervene appropriately when students misbehave online

- Communicate appropriately with students in one-on-one and group settings

- Communicate with students, parents, school administrators, and other teachers via a variety of online and traditional means

- Provide course materials to students in a timely manner

- Track whether students are registered/enrolled in the course

- Keep track of student participation in online course

- Provide students with basic technical support services, recognizing which issues should be forwarded to technical support teams

"Instructors are more willing to take on courses if they perceive adequate training is provided for them (Lee, 2005).

Some instructors have difficulty adjusting to the learner-center model of distance education (Simonson, et. al., 2006). Much of the web-based instruction initially was based upon "behaviorism, viewing the learner as an empty vessel waiting to be filled" (Morphew, 2002, p.14). It is necessary to create an environment that is participant centered and takes the focus off of the technology and the instructor and onto the content and the learners (Hoffman, 2004). Actively involving students in learning is a concept based on the teachings of Socrates and emphasized by John Dewey and Jean Piaget. This teaching method has been referred to as constructivism and calls for students to engage in problem solving and critical thinking (Morphew, 2002; Pickard, 2003). Constructivist theory is considered to be the dominant approach in online courses and has been influential in shifting to the emphasis on the role of the learner and the individual in education (Conrad & Donaldson, 2004; Morphew, 2002; Weller, 2002).

To ensure quality and promptness of coursework, instructors must create an organized, detailed syllabus and timeline and provide rubrics for assignments. The more information students have about completing assignments, the fewer problems the students and instructor will experience during the course. Students need structure and detail to help them stay organized and on task (Gibson, 1998; Simonson, 2006).

Interactivity is one of the most interesting features of online education, but can be difficult to facilitate. The guiding principles necessary in the traditional classroom are the same; instructors need to create a safe, tolerant, respectful, supportive climate for sharing and discussing ideas. (Durringtion et. al, 2006; Forret, 2006). In a physical setting the instructor is able to use voice quality, mannerisms and other non-verbal cues to assist in facilitating discussions. These are unavailable in the online context.

Engaging students in discussion of key topics or issues enhances their learning and keeps them feeling connected to the course, the instructor, and one another. Interaction is fundamental to the educational process. The idea of give-and-take is crucial to allow students to delve deeper into the content of a course (Bento & Schuster, 2002; Burke, 1994; Comeaux, 2002; Moallem, 2002; Neidorf, 2006). "Engagement in reading, writing, discussing, and reflecting – the building blocks of active learning. It is less important what combination of technologies is used; what matters is the effectiveness of instructional strategies in fostering student learning" (Mehrotra, 2001, p. 224).

Learning occurs as a result of interaction – with the content, instructor, and peers. The interaction with peers makes learning most engaging and relevant. In order to master new skills and knowledge, learners must engage with the content of a course, interact with an instructor who can help them make personal meaning of the material, and validate and deepen their new knowledge through peer dialogue (Neidorf, 2006).

Online students could respond several times daily, possibly in lengthy posts and consequently, the online instructor requires more and more time online (Bender, 2003). Maintaining sufficient student contact is noted as one of the more demanding components of online instruction (Discenza, 2002). Bento & Schuster (2003) assert:

"With the increasing popularity of student-centered and constructivist

approaches to education, student participation in class discussions is

being considered not just something 'nice to have', but an essential part

of the teaching and learning process. As we move from traditional to

virtual classrooms, the challenge of understanding and nurturing such

participation becomes even greater." (p. 156)

Consistent, timely communication is essential to a successful online experience (Johnson, 2003). One of the dangers of online learning is that participants feel isolated, so the online instructor becomes the central human contact point. This is connection is needed to reduce the impression that the student is learning from a computer (Hoffman, 2004). A primary task of the online instructor becomes facilitating students' learning and motivation and fostering interaction among students (Olliver, 2004).

Prompt and helpful feedback regarding progress toward the goals and objectives of the course contributes to student success. Some complaints from students include the lack of personal attention and lack of timely feedback from instructors (Mehrotra, 2001). "When a professor shows interest…by commenting on students' ideas and insights, students feel valued and encouraged to participate more" (Johnson, 2003, p. 113).Clear and constant communication is necessary and is the foundation of successful distance learning courses. Dr. Miriam Luebke of Concordia University in St. Paul, MN notes that staying up-to-date is vital (Johnson, 2003).

Applications for Family & Consumer Sciences Education

Some of the high school courses offered in an online format include those in career and technical education. Food marketing, principles of marketing, retailing, entrepreneurship, and business computer information systems, parenting, personal finance, and nutrition are just some examples of online courses. Secondary students are more likely to enroll in language arts, health and physical education, mathematics, social studies, science, and foreign language offerings (Mupinga, 2005, Zucker & Kozma, 2003). Data collected from 2002-03, found the following enrollment percentages:

23% social studies

19% language arts

15% mathematics

12% natural/physical science

12% foreign language

3% general elementary school curriculum

4% computer science

14% other

These percentages are based on the estimated 327,670 enrollments in distance education courses in 2002–03. The detail may not sum to totals because of rounding (Setzer & Lewis, 2005).

Family and consumer sciences (FCS) education promotes the learner-centered, interactive, constructivist approach that has been discussed as key to online course success. It would seem that family and consumer science professionals might be most poised to take on the challenge. Guidelines for best practice in a family and consumer sciences classroom were suggested by Ashby, Conkin, and O'Connor (2000) and include:

- Units are framed around practical problems faced by individuals and families

- Variety in types of activities used

- Teachers use open-ended, non-judgmental questions to seek the points of view of students, to understand students, present concepts, and discuss thinking processes

- Students are aware of the importance of critical thinking and are asked to justify or give reasons for their responses

- Teachers are less directive so that students take more initiative and responsibility for themselves and their actions

" Family and consumer sciences has always emphasized authentic learning experiences and materials" (Pickard, DeBates, & Bell, 2003, p. 6). Authentic learning engages students in 'real world' applications of knowledge and skills (Olson, Bartruff, Mbererngwa, & Johnson, 1999). "Authentic classroom tasks, therefore, prepare students for life, not just a test" (Burke, 1994, p. xv). Authentic assessment has only been broadly emphasized as part of the constructivist theory for a little more than two decades.

Dr. Howard Gardner's theory of multiple intelligences caused educators to examine alternate methods for demonstrating learning. Approaching curriculum in a variety of means to help learners flourish and find meaning in their acquired knowledge was stressed (Campbell, Campbell, & Dickinson, 1996). Educators recognize that individual demonstration of learning can take many forms. Individually or through collaborative efforts, performance tasks or project-based assessments allow multiple ways for achievement to be evaluated. Projects are developed over time and can display progress in addition to applying skills in a more relevant context. Teaching students to produce unique objects instead of reproducing knowledge on a test develops and enhances critical thinking skills. The instructor is able to test applications, not memory. (Burke, 1994, Simonson, et. al., 2006). Successful online courses are utilizing article reviews, demonstrations, role plays, journals, interviews, learning logs, discussions, and portfolios (Bender, 2003; Hanna, et. al., 2000; Hardy & Bower, 2004; Mehrotra, et. al, 2001; Turner, 2004)

Learning by doing is recognized as an effective means. Performing tasks allows students to apply what they have learned, engages them in active learning, and prepares them for the world of work (Mehrotra, et. al, 2001). Courses needing to teach to the psychomotor domain have some challenges in an online environment. It is a struggle attempting to teach "hands-on" skills that are usually taught in a lab setting. Lab studies tend to be a key component of the curriculum in physical science, engineering, applied art, and technical fields and may not transfer well (Dooley, Lindner, & Dooley, 2005; Palloff & Pratt, 2001).

One of the major difficulties in the distance learning environment is the development of an alternative to laboratory experiment. The development and production of multimedia substitutes and the use of simulation and modeling can replace a great deal of the traditional laboratory experiment curricula (Mehrotra, et. al, 2001; Ouellette, 1999; Watson, 2007). Other alternatives might include: eliminating labs, forwarding experimental kits directly to the learners, substitute lab work with video demonstration material or PowerPoint slides, or arranging for the use of local (in terms of the learner) laboratory facilities and supervision (Dooley, et. al, 2005; Palloff & Pratt, 2001).

Another strategy that can help compensate for the lack of hands-on practical experiences in the classroom is workplace experience. Occupational courses in family and consumer science lend themselves to this option. One study found no difference in student achievement measures of online campus students when the courses utilized workplace experience as a key component of student learning and skill development (Benson, Johnson, Taylor, Treat, Shikareva, & Duncan, 2005).

The need for certain classes to have direct interactions with people or objects (such as laboratory equipment, machines, etc.) is "not successfully reproduced in netcourses-and may never be" (Zucker & Kozma, 2003, p. 100). "e-Learning approaches are best suited to knowledge domains where the steps to mastery and the assessment of competence are precise and non-controversial" (Emurian, 2002, p. 128).

Recommendations relevant to any course, online or traditional, were made by Watson (2007) and include: engage students in learning activities that address various learning styles, provide students with opportunities to engage in critical thinking, provide appropriate teacher-to-student interaction, and accommodate students with disabilities.

Having addressed the first recommendation of activities that address various learning styles, critical thinking opportunities are next. Family & consumer sciences has a reputation for integrating practical problems that require the use of process skills to guide the learner to a higher level of thinking (Ashby, et. al, 2000). A major process skill essential to FCS is practical reasoning, "a problem-solving process in which students consider the context of the problem (historical, social, emotional, economic, cultural, political or religious)" (Pickard, et. al, 2003, p. 8).

Getting to know students personally through questionnaires, conversations, conferences, and other interactions helps teachers understand what motivates and interests students. One-on-one interactions tell students they are important and have worthwhile contributions to make. FCS instructors recognize that having someone who really cares about each student's success helps to motivate students to achieve (Pickard, et. al, 2003).

Accommodating for disabilities is also not new for family and consumer science professionals. Course materials for distance learners with disabilities need to be made accessible and be compliant for EEN students (Cavanaugh, 2004; Mehrotra, et. al, 2001). Individual Education Plans (IEPs) are familiar to those in FCS. Many students with special needs are included in classes and modification of materials is done on a regular basis (Reese, 2003).

Despite the strength of family and consumer sciences education content, many districts face the possibility of eliminating courses due to teacher shortages and budget cuts. Family and consumer sciences has strong multidisciplinary academic components as well as life skills components. Online courses may be an avenue to continue offering some classes that would be appropriate to transfer to an online format.

Some FCS professionals are experimenting with this option. Roxie Godfrey of Mount Vernon High School in Alexandria, Virginia teaches an online course called Life Planning. She shared her innovative program at the 98th Annual American Association of Family and Consumer Sciences in Reno, Nevada in June of 2007. The online life planning course is titled "Hopping to It" and includes the following modules: life management plan, personal development, communication skills, families, nutrition/wellness, financial management, consumer education, fashion, housing/interior design, and careers. The on-line format of the course is relatively new so little data is available for analysis at this time.

An introductory food science course offered through the University of Idaho is a required course for several majors, including Family and Consumer Sciences. A recent study compared the performance of traditional classroom students and on-line students in

this course. The results support the conclusions of Russell (1999) in that there was no significant difference in effectiveness of delivery methods (Culbertson and Smith, 2003). This may be an indicator that family and consumer sciences curriculum can be taught effectively in an online format. However, it must be noted that the research was conducted at the college level and may not translate to the secondary level.

Chapter III: Critical Analysis

Limitations

A major limitation of this study is that much of the existing research focuses on

college and university applications of distance education. Though online learning has

become increasingly prevalent in secondary schools, relatively little data has been

collected. One of the special challenges of research at the secondary level is because the

students are minors there is a need for parental consent to conduct research.

Conclusions

The number of secondary school students accessing distance education courses has

increased annually. And there is no indication that this trend will change in the near

future. As the demand from parents and students increases, more school districts are

implementing procedures and policies for the development of courses. At the state and

federal level, current legislation has been focused on supporting distance education

initiatives by providing expanded learning opportunities for students of diverse needs.

Many misconceptions about distance education prevail in the general population and

more information about the realities of distance education is necessary. One of the major

hurdles to overcome is the idea that the technology will do the work and the teacher's

role is minimized. Quite the opposite has been proven to be true. Distance education can

be very time and labor intensive for the educator. Technology support services are also

very critical for making distance education effective. An infrastructure that is lacking

and inadequate training are two key areas for frustration during implementation. In order

to help parents, administrators, and the community make good decisions in relation to distance education they need to have more solid data at their disposal.

Learners tend to find appeal in the flexible scheduling and individualized pace that distance education can offer. Many students however, are not prepared for the increased responsibility for their own learning. Due to a lack of maturity and lower degree of autonomy needed for independent learning, secondary students may struggle with this format. Differences between child and adult learning styles must be taken into account when studying the research. Independence, self-direction, and motivation are key personality characteristics that must be taken into account when determining which students would be good candidates for distance education. There are a number of assessments available to help learners determine if distance education is a good fit for their learning needs.

Not all instructors are not necessarily suited for teaching via distance education a there are a number of challenges. One of the most crucial elements for a successful experience is having professional development related to both the technical and curricular aspects of distance education. Training and development of competent instructors should not be overlooked. The National Education Association has a pair of publications that focus on online courses and offer valuable guidance.

Interactivity is one of the most interesting features of asynchronous distance education, but can be very difficult to facilitate. Consistent, timely communication is necessary in order to avoid participants feeling isolated. The student-teacher connection is cited as a vital component to student success but there is a delicate balance between not enough communication and becoming overwhelmed by communication. Actively

engaging students in problem solving and critical thinking is preferred over simply posting lecture notes and PowerPoint slides. Instructors are encouraged to utilize a variety of techniques to promote student participation and assess learning.

Career and technical education courses have ventured into the distance education realm. The guideline for best practices in family and consumer sciences education support the core beliefs on effective online education set forth by the National Education Association in their Guide to Teaching Online Courses (2002) which include:

- Courses should be instructor led

- Courses should be student-centered

- Learning should be collaborative in nature

- Coursework should maximize participation flexibility while providing a framework for student pacing

- Courses should foster information, communication, and technology skills necessary for success in this century, such as 21st Century and ICT learning skills

- Course format, expectations and instructions should be clear and concise

- Activities and assessment should account for different learning styles

- Courses should use the latest best practice

One of the most difficult aspects of the distance learning environment is creating an alternative for the many "hands-on" skills that are usually taught in a lab setting. The need for some courses to have direct interactions with people or equipment may make them less suitable for distance learning, but alternatives do exist for some. Introductory level courses that may be more content laden or upper level courses that may be less instructor driven might be considered for online opportunities.

Family and consumer science educators are beginning to experiment with online course delivery. As development continues, data can be collected to gauge the effectiveness of the instructional method.

Recommendations

Districts and teachers should know that there are numerous resources available to assist them in constructing an online course delivery system. There is no need to reinvent the wheel. Before launching into distance education course delivery, school systems should consult the National Education Technology Standards for Administrators (ISTE, 2007). Some necessary conditions noted for online education success include:

- A shared vision among school personnel, parents, and the community

- Available technical assistance for maintaining and using technology

- Shared knowledge of content standards and curriculum resources

- A commitment to student-centered learning

- A system for continual assessment and accountability for technology and learning

The National Education Association (2002) also provides guidance in the seven criteria set forth in their comprehensive framework for online courses. They offer a detailed rubric for analyzing the quality of distance education and focus on curriculum, instructional design, teacher quality, student roles, assessment, management and support systems, and technological infrastructure.

Continued research will need to be conducted in a sustained, systematic approach to gather data related to K-12 distance education. At the present, very little research has been done in this area. As the numbers of schools utilizing distance education continue

to grow, this must be a priority in order to improve effectiveness, affordability, and satisfaction.

In addition, a number of other questions surface about distance education as well.

- Who should legislate distance education?

- Who has oversight responsibilities?

- How should programs be evaluated?

- How will intellectual property rights be handled?

- How should instructors be compensated for teaching in a distance education format?

- How will we provide for equity in access?

As others continue to study this topic, these questions will be discussed and will cause the educational community to reflect and think critically about a variety of issues. More resources will need to be allocated locally and nationally to address the many opportunities and challenges in distance education.

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