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Implications on Rural Adult Learning in the Absence of Broadband Internet

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ABSTRACT

The purpose of this study was to establish a deeper understanding of the educational needs of rural-based learners within the context of online learning opportunities. It was hoped to ascertain whether rural learner's needs differ in terms of learning choices from that of their urban counterparts. The basis for the urban examples is based totally upon available literature. This study is particularly interested in identifying predictors for why rural learners choose to participate in online based adult and community education using a case study approach. Seven themes were identified during this study and are presented as a model for potential predictors of formal and informal online learning in rural communities.

HISTORICAL PERSPECTIVE

Broadband Internet holds great potential for the expansion of successful adult literacy and learning programs for several key reasons. First, it can increase the effectiveness and efficiency of practitioners and improve learner's experience by minimizing isolation and supporting connections between dispersed and diverse groups. Secondly, and perhaps more importantly, those learners who would not otherwise take courses are afforded the opportunity to do so due to enhanced connectivity between adult education sites and potential participants (Learning with Technology, 1999). But is broadband Internet accessibility critical to the premise that technology holds such great promise for adult literacy and adult education in general? Certainly learner flexibility in terms of scheduling and convenience would support this argument. The alternative to rich, multimedia instructional videos delivered via the Internet requires participants to attend a learning center or produce media like DVD's for distribution. Neither alternative possesses the convenience factor for the learner or the learning facilitator. Younger adults are beginning to utilize iPods® and smart phones to listen to instructional material made available by high school teachers and college professors (Duke Center for Instructional Technology, 2006). There is also a smaller segment offering video over handheld devices which translates into even greater flexibility yet (Malan, 2006). Are *baby boomer*, working adults likely to use such technology? The answer is probably no, however as the population ages this likelihood increases as people's fear of technology diminishes. The most notable point is the trend toward applications of technology that require high bandwidth for successful implementation.

Adult education professionals are beginning to leverage the Internet at a faster pace and research indicates an increased usage of the Internet specifically by adult literacy teachers (Rosen, 1996). Those citizens with low-income levels and in rural areas have less access to such services due to cost and availability issues and therefore are encountering an artificial barrier restricting their ability to succeed (Rosen, 1996; Fulton, 2001; Kruger, 2003). There is little doubt that lack of accessibility to the Internet for low-income learners seem to be a significant issue (Rosen, 1996). If low-income earners are indeed unable to afford high-speed Internet or even see its value for potential learning opportunities then there may be a direct correlation between the lack of access to technology and the perpetuation of illiteracy.

Cyril Houle establishes in his 6 Credos that adults are mature and understand what they need to learn and that the educator is accountable for assessing that need and to provide learning opportunities. He also states that educators should be willing to adapt their methods and andragogical approaches to match the requirements of learners and that adult education espouses as a core value the improvement of their generalized institutional processes (Houle, 1996). Implied in these basic principles is that adult educators must be open to new approaches that fit the need of the learners. This may require considerable and continuous training on the part of the adult educator especially in specific areas of technology.

Even at the turn of the 20th century, John Dewey's contended that all members of society needed a critical technological literacy to compete in changing environmental and social crises and challenges faced by government, industry, and the general public. The first thing to understand about technology is that people have a role, as citizens in a democracy, in deciding the ways in which technologies will be used in society (Dewey, 1915). Applying this principle to adult education today it could be surmised that all educators are responsible for effecting social change as it relates to both literacy in general and information literacy. From this perspective then, adults must be motivated to understand technology and how its use relates to their success or failure in a fast-paced society. Jane Addams, a social reformer and colleague of Dewey, challenged the techno-rational efficiency of industry's position and concluded that the educator must demonstrate to the average worker their place in a democracy, as members of society their responsibilities and how they can influence the industrial and social settings (Braundy, 2004). So even though she mildly disagreed with her colleague in the approach, she clearly understood the implications of individual responsibility to adapt to change and the educators duty to empower that change.

More recently, there is considerable research on the *digital divide* and how those specifically in rural areas can be afforded low cost, high speed Internet connectivity. A significant obstacle in rural America is convincing constituents that there is both a need for broadband and a cost feasible solution available. Local communities must ultimately determine their own motivations for such investments (Clement, Holbrook, & Staman, 1996), with assistance from governmental and private organizations, and educational institutions. Many perceive traditional libraries as one key to a comprehensive solution to the rural broadband issue but adult learner's needs must be considered before such assumptions can be asserted (Vavrek, 1995). After all the vast majority of libraries in rural areas are staffed with a single person, have a limited selection of books and even fewer professional journals and operate on a total budget of $21,000 (Chute, 1994).

If lifelong learning is to be impacted by the introduction of broadband Internet, it must certainly be a conscientious effort by a collection of agencies, community groups and motivated individuals. The Faure Report contends that "every citizen should have the means of learning, training and cultivating one's self" and further to position themselves "differently relative to their education" (Candy, 2002). Certainly broadband Internet affords an opportunity for democratization of information and may lend itself as an agent of adult literacy to larger segments of the population of as it is deployed. The concept of information literacy is also widely recognized as a second ominous issue even when and if broadband is generally available. According to the American Library Association's Presidential Commission on Information Literacy, a person is information literate when they are able to recognize when information is required and are capable of locating and analyzing that information (Candy, 2002).

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OBSTACLES TO BROADBAND

Competition

The issues surrounding implementing broadband Internet to rural America are more complex that one might imagine. Beyond the political wrangling for funding and "turf" control, there are other and perhaps more difficult issues lurking. Politicians are often concerned with only constituents in their district, or are under pressure from lobbyists who have only a particular company or industry's best interest at heart as opposed to the citizenry. Telephone, cable and other companies are too often embroiled in deregulation issues which boil down to control over certain geographic regions (Pressler, 2006). But national surveys performed by the NTIA do indicate that providers of DSL and cable are correct in their assertion that the interested consumer base is too small or disinterested to rationalize the expansion into rural areas (Grubesic, 2003). Bellsouth who covers large areas of Kentucky recently announced and increased commitment to wireless Internet availability but still continues to expand into markets where choices already exist (Rush, 2006; Walker, 2006). Further examination of this issue might lead one to conclude that state and local governments will need to be involved as in the cases of Virginia, where Internet service demand is aggregated in with governmental agencies, or Maryland and West Virginia who share resources like statewide fiber networks (Strover, Oden and Inagaki, 2001). West Virginia recently secured a $37.9 million loan to build a fiber-to-the-home telecommunications network. This network will connect more than 1,100 businesses and in excess of 12,600 homes to state of the art broadband Internet technology (Communication Workers of America, June 27, 2007).

Costs

People's ability to pay for broadband Internet access perhaps ranks as one of the chief barriers for achieving saturation of coverage in rural areas (Grubesic, 2003; ConnectKentucky, 2006). Minimum wage earners and those living on low, fixed incomes are naturally going to be most concerned with basic living necessities and expensive Internet access is not well received. Competition or the lack thereof has a dramatic impact on low income earners ability to afford high-speed access especially in rural America (Grubesic & Murray, 2004). This means that other solutions like affordable wireless access are going to be necessary as viable options. According to Jeannine Kenney, senior policy analyst for Consumers Union (Banos, 2006), "Fudging the facts won't provide high-speed Internet access to those who need it most. If the FCC is content to let cable and phone companies control the broadband market, then consumers need a third option; wireless broadband that is less expensive and which doesn't depend on DSL or cable modems. It offers the best and perhaps now the only way to close the digital divide."

Culture

Perhaps some of the most difficult barriers to overcome are not technical in nature, but have more to do with human nature (Turner, Thomas and Reinsch, 2004). Perceptions by those in rural areas are often driven by traditions that are not entirely trusting of technological advances and fail to understand the potential of, in this instance, high-speed Internet (Obilade, 2001). People often see this advances as necessary for the improvement of public education but

do not have any notion of the potential beyond K-12. Perhaps being perceived by their peers as a technical "geek" or as one who "thinks they are smarter than everyone else" is also an inhibitor (Ball, 2005). Convincing people of the value proposition is closely related to the cost of Internet access as evidenced by the ConnectKentucky (2005) Technology Assessment Study. According to this study on one Kentucky County, 12% of households reported that they do not own a computer, 38% indicated that they do not need the Internet and another 8% said that it is too expensive. Additionally, 34% of those polled indicated that broadband was either too expensive or unavailable to them. Even when people can afford broadband, this doesn't automatically mean that they will subscribe. Culture plays a significant role in such decision-making. For example, many senior citizens are intimidated by technology and often barely know how to send and receive email. As previously discussed those who struggle to read might avoid computer technology. There are numerous reasons that disabled Americans, certain religious-oriented, and even some minority groups might avoid active, persistent use of the Internet (Crabtree & Roberts, n.d).

Geography

Finally, considerable technological considerations become apparent when one examines the deployment of broadband capability. Mountainous terrain creates issues even with wireless proposals; and in wired solutions many miles of cable must be attached to utility poles or buried which is expensive. Often residents simply live too far from the necessary equipment for DSL service or the terrain isn't suitable for current wireless connectivity (Dern, 2005). Even satellite reception requires a clear view of particular regions of the sky which isn't always viable in mountainous or heavily forested regions. Wireless communications in some form may offer the most hope for serving the largest number of consumers for the least cost according to Joe Mefford, statewide director of broadband deployment for ConnectKentucky (personal communication, October 8, 2006). In a subsequent conversation with Mr. Mefford, he confirmed that AT & T is not likely to expand DSL coverage further into rural areas because their statewide goals for coverage have already been achieved (personal communication, May, 11, 2007).

State of Accessibility

Broadband availability in rural areas continues to be a major topic of concern among many people. Several grassroots organizations including the Wireless Communication Association International, and the Rural Broadband Coalition were created for the sole purpose of closing the Digital Divide for rural Americans. Most states and often small towns have found that they are on their own when comes to servicing their constituents. In many cases, current telecommunication providers have been contacted and deals established to provide service. In other cases, utility cooperatives, government owned cable or telephone companies, and private citizenry groups have succeeded in establishing high-speed options for consumers. Government should support efforts to offer broadband to the masses, but in some cases special legislation is required to pave the way. In Kentucky, the Supreme Court rendered an August 2005 decision that severely hindered rural electric cooperatives from providing any service other than that of electricity (Cross, 2005). Reacting relatively quickly to this decision the Kentucky Legislature passed three separate bills that allowed these organizations to once again offer services like Internet, long distance telephone, and propane.

In Texas, a small community decided to make a $200,000 investment in the future and converted their power lines into data lines as well. The recent FCC ruling that utility companies could run high-speed Internet access through existing electrical outlets broadband over power lines or BPL may become another viable alternative for rural communities. According to John Smith, of e-Business news, Flatonia Texas, population 1,400, took matters into their own hands when no one would provide them with broadband services. Customers will be able to connect to the Internet through their power lines at 4 megabits per second, about the same speed as cable or high end DSL service with BPL equipment in development that will go as fast as 90 mbps (University of Kentucky School of Journalism and Telecommunications, 2005).

A case study focused upon a single rural Kentucky county was conducted and therefore the information regarding subsequent high-speed Internet access is for that state. According to ConnectKentucky, as of May 2007, 92% of all households have access to broadband Internet (ConnectKentucky, 2007). The goal is to achieve 100% by the end of 2007. There are concerns over these statistics however, like what constitutes broadband and does *available* imply *affordable*? Researching the ConnectKentucky Web site, there are no references to define broadband in specific terms and no evidence that affordability is a key issue for low and fixed income families. Further investigation indicates that the strict FCC definition is not being used, but instead alternatives like satellite and fixed wireless are ConnectKentucky's preferred solutions to the dilemma and that private funding is the strategic direction employed.

As late as February 2006 the nation's largest telephone and cable companies proposed to transform the current free and open nondiscriminatory Internet into a privately managed service with tiered service levels and subscription plans would further hinder online experience specialty amongst lower income individuals (Chester, 2006). Using these new subscription plans the number of downloads streaming media and even e-mail messages would be limited. However, in April 2007 ConnectKentucky released job growth rates in the IT sector that were three times that of the national average. In the same release this organization claims that 92% of Kentucky homes now have access to broadband (ConnectKentucky, 2007). This seems in direct opposition to a Federal Communications Commission investigation initiated in April of 2007 as to where the broadband services are being provided to all Americans in a timely and reasonable fashion (Rash, 2007). In an attempt to tie this information together, it is interesting to note that the Green River Area Development District [GRADD], comprised of several Kentucky counties, selected a wireless provider from Hendersonville, Tennessee to implement a fixed wireless broadband system. Several other counties adjoining this district have also elected to participate using their own coal severance money for infrastructure leaving one to wonder if the 92% figure cited by ConnectKentucky should be trusted. Further, two other plans were rejected; one due to higher costs and the third due to the proposed use of satellite broadband in the proposal (Mayse, 2006). The demand for broadband Internet is apparently present across this eight county region; the question is whether the supply is adequate. If 92% of people already have access to high-speed Internet then why are local county leaders so willing to spend precious funds on this service as opposed to clean water initiatives, and additional public safety services?

Information Literacy

Another issue that must be confronted is the concept of information literacy. Information literacy is the user's ability to comprehend the information once it is available (Fulton, 2001). Consider as an example an untrained individual being exposed to large volumes of information on how to build an engine. The mere fact that the information is available doesn't mean that

someone can understand and utilize it even with proper context. This issue further complicates the implementation of broadband to all people. Once high-speed Internet is available to these underserved areas what guarantees are there that the utilization of the service will be effective? Distance education, telemedicine, electronic business, agricultural resources and interactive judicial services (E.g. Internet arraignment) only just a few of the opportunities to both the public and private sectors but awareness and training are key to the success of many of these initiatives. One such program currently available in Kentucky is known as REAP or Rural e-Learning Agriculture Program. The primary purpose of REAP is to assist farmers in the Commonwealth that formally depended upon tobacco to earn a living (Commonwealth of Kentucky Technology News, 2003). In many instances free or low cost equipment and training is being provided in an effort to re-tool these farmers, and the delivery of bandwidth intensive instructional videos and other services exemplify the need for high-speed to this segment of the population. What are the implications to these farmers to having access to broadband? According to a survey conducted by the University of Kentucky (2005), about 76 percent of farmers in Wyoming and New England use the Internet, and those in New England are most likely to do farm business online. Only 30 percent of Kentucky farmers are online and it is very likely that literacy issues will be discovered as programs like REAP unfold. But what about the lifelong learner who is not interested in pursuing new skills for career related reasons. There are many people who learn to aid them in personal hobbies like quilting, or because they perceive that this desired knowledge will assist them at home. In rural life skills not necessarily valued by others become almost required to survive. Examples are farmers who need to repair their machinery, or those who need to weld, pull electrical wire or even basic plumbing skills.

Knowledge Sources for Lifelong Learning

There are numerous sources for lifelong learning in rural areas, and certainly many of these facilities are already broadband connected. Adult and community education centers typically have DSL and some are even equipped with fiber optic connections affording very fast Internet capability. Other lifelong learning alternatives include public and private educational institutional libraries, public libraries, churches, boys and girls clubs, and many other organizations. Even social guilds dedicated to gardening, crocheting, quilting, and chess afford learning opportunities to those on in serious pursuit of growth. How does high-speed Internet accessibility affect these types of informal learning options? Libraries have traditionally demonstrated a definitive impact due the sheer volume of information available in the form of books, journals, and numerous other resources and now include access to online databases like EBSCOhost, Infotrac and LexisNexis. Lippincott (2005) posits that the *net generation* learner may view the Web as the "information universe" (Lippincott, 2005, p. 57) which is opposition to views by most librarians and academicians.

Certainly one must not assume that a *cookie cutter* approach to needs assessments for rural communities should be pursued. No doubt county residents will have commonalities with urban counterparts and with other rural communities. There will also be clear differences in needs, motivations and underlying assumptions for lifelong learning decisions between rural residents and others. An understanding of these criteria should prove useful as a starting point for constructing a model for Internet implementation as a tool for lifelong learning. There is little doubt that adult learning in formal settings already uses the Internet, what is questionable is the extent to which it is leveraged in these settings and perhaps just as importantly in informal settings. It is noteworthy that incidental learning occurs constantly and regardless of the setting

and that new knowledge creation is not only possible, it is probable. High-speed Internet solutions are vital to assist in bridging any divides that exist between those groups who are connected to the information super highway and those who are not. It remains to be seen if any real inroads can be afforded by simply offering broadband access, but it is certain that little progress is attainable in reaching any conclusions as long as divisions remain. Is this problem really a Gordian knot that requires a sharp, quick sword, or will this issue continue to be debated while many rural residents fall further behind the technological *eight ball*?

METHODOLOGY

This case study used a qualitative-quantitative methodology using a pragmatic approach which allows for the use of both deductive and inductive reasoning (Tashakkori and Teddlie, 1998). The specific approach used is described as a parallel mixed method design where the quantitative data (surveys) and the qualitative data (interviews) are collected simultaneously and then "analyzed in a complementary manner" (Tashakkori and Teddlie, 1998, p. 47).

The questionnaires did not ask for any names or other personal information that might be used to identify the subject. Basic demographic data was collected regarding general area of residence (zip code) gender, income range, age range, the level of attained education, ethnicity and race. The McVay e-readiness survey (McVay, 2000) was customized slightly and used to address the participant's readiness for online learning experiences. There are thirteen items on the instrument and participants record their responses on a 4 point Likert scale. This survey has been used in several studies (Smith, 2005; Smith, Murphy and Mahoney, 2003) and its reliability and validity is established by a study performed specifically on the instrument (Smith, Murphy and Mahoney, 2003). This study concluded that the McVay e-readiness survey is reliable with a Cronbach alpha of 0.83, although it did suggest work be performed on specific questions to "yield a better contribution to the reliability of the instrument" (Smith, Murphy et al, 2003, p. 63). The Smith (2005) study resulted in a Cronbach alpha of 0.79 which again is sufficient to assume reliability, with the understanding that reliability coefficients are difficult to state appropriately because they are dependent upon the group being tested (Gay and Airasian, 2003). Written permission was obtained from the author to use the McVay e-readiness survey in this study.

First, interview responses were coded to help identify "meaningful patterns of response" (Hague, 1993, p.47). Coding is defined as "the process for categorizing qualitative data and describing the implications and details of these categories" (Trochim, 2001, p. 160). Open coding techniques were used initially to help establish the categories. Selective coding was used to place interview results into the appropriate categories. Constant comparative analysis is the scheme utilized as the coding process to "unitize" and to "categorize" (Tashakkori and Teddlie, 1998, p. 123) the narrative text collected from interviewees. Questionnaire responses will be presented in this study as descriptive statistics (Gall, Gall and Borg, 2003) and should be representative of the county of study. The data collected from these questionnaires was used in collaboration with the interview findings and available broadband Internet coverage data to arrive at conclusions. Because of the types of data collection methods being utilized, interviews and questionnaires, and also due to the inclusion of some of the participants in the research process, data triangulation (Patton, 1987) is used as the primary preventative technique to ensure construct validity (Yin, 2003). A parallel mixed analysis (Tashakkori & Teddlie, 1998, p. 127) of interview results and questionnaire statistics, as well as any inclusion of current trends and

relevant literature will assist in reducing researcher bias and increasing the truthfulness of the description of this specific phenomenon (Denzin, 1978).

After transcribing the interviews, notes were placed in the margins of transcripts to identify thematic labels. One example is all interviewees referred in some way to a generation of people that were left behind amidst radical technological change. Once all themes were identified and labeled, they were transferred to rows in a spreadsheet with each assigned a short description. Columns headers were assigned to the respondents and the process of noting which themes were in common began. Initially, fifteen themes were identified but that number was later reduced to seven. The themes that were eliminated were consolidated into the remaining themes during the initial analysis. This process consisted of numerous iterations of reviewing interviews notes and transcripts as relationships were identified between each theme.

FINDINGS AND DISCUSSION

This case study describes prevailing attitudes for an individual rural community in south central Kentucky, related to use the general e-readiness for online learning strategies dependent upon broadband Internet. Three research questions were the focus of this research.

1. How will Internet-based, online course delivery methods be received by adult learners in this rural setting?
2. How does broadband Internet impact adult informal learning in rural areas?
3. What role do local government officials play, and what level of responsibility and liability should they accept as related to technology resources that impact the viability of community-based learning?

Seven themes were identified after an analysis of interview transcripts and questionnaire data. The seven themes are:
1) Importance of high-speed Internet availability,
2) Attraction of professionals to the area,
3) The "missing generation",
4) Common solutions & working together,
5) Lack of vision for online learning,
6) Changing cultures and demographics, and
7) State & local government's role and regulatory policy.

Each of the interviewees indicated an awareness of the importance of broadband Internet as the impetus to achieve specific economic and personal growth objectives as well as educational improvements. This pattern was among the easiest to identify primarily due to the topics discussed during the interviews, but also because each of the interviewees had personal experience with the needs expressed collectively by the community. The elected leaders all indicated that business and industry, as well as individuals are now looking for high-speed Internet as a basic service in the area as one determinant when deciding whether to relocate to a community. The importance to individuals was indicative in one response that described an acquaintance that has bought and sold homes using the Internet. The lack of access speed was also reported as at least one primary cause of many residents who choose not to use the Internet at all, as summed by "This is primarily because people may have high-speed access at work and

then go home to dial-up, then because of heightened expectations from their Internet access at work they are disenfranchised by the much slower speeds." At least two respondents compared broadband Internet deployment to the electrification efforts in the United States in the 1930's and 1940's, while others concentrated on its importance to economic growth and stability.

Most respondents also recognized the need for attracting people from outside the county which would likely have a positive, cumulative effect on the economy as well as attitudes toward online learning. According to one respondent when referring to working professionals, "*they would build a nice home if they can have high-speed Internet service because they can work at home. They know that life in the county is beautiful but without high-speed Internet service they just can't do it.*" Drawing such professional types to the area would impact the economy by expanding the property tax base, increasing employment opportunities, increase occupational tax revenues, enhance views on online learning due to previous exposure, and would assist in closing existing gaps in technological knowledge. Such professionals are also likely to expect governmental innovations such as electronic tax payment systems, other municipal-based online services, and current information concerning fiscal, regulatory, and administrative policies (Phang, Sutanato, Kankanhalli, Tan, & Teo, 2006; Atkin & Jeffres, 1998).

The Internet only became widely available in the 1990's, and high-speed Internet sometime later. The computer revolution that began at the very end of the 20th century caught many adults unprepared and in many cases unwilling to invest the time necessary to learn key skills. Children growing up with computers and subsequently the Internet are dealing with this and other technology differently simply because they were raised with the advances. Computers are now routinely used in schools and many homes have computers. This theme emerged because several respondents identified most people in a particular age group as deficient in computing and Internetworking skills. The age varied slightly but seemed to consist primarily of older *baby boomers* in what was labeled by one respondent as a "lost generation." The concept of lost generation is not a new one as considerable interest continues to be generated in learning style differences between baby boomers, generation Xers, and millennials (Oblinger, 2003). Baby boomers are considered those born 1946 through 1964, genXers from 1965 through 1980, and millennial learners post 1980, with each group having formed their own unique perspectives regarding technology (Aviles, Phillips, Rosenblatt, & Vargas, 2005). Not surprisingly, Gen-Xers and millennial learners are generally less resistant to technology because it is considered a normal and integral part of the environment in which we live.

This clash of the generations may be the cause of those more comfortable with computers and the Internet contending that public schools remain inadequate in the application of technology (Oblinger, 2003). Younger learners also use the newest forms of technology to communicate like iPods and MP3 devices, and text and instant messaging. The logical conclusion may be that such tools should be used to help these young people learn (Aviles, Phillips, et.al, 2005; Oblinger, 2005; Dillon-Marable & Valentine, 2006) in formal settings as well as those already in use. There also remains a significant barrier in that many people simply do not see a computer as a justifiable expense. This was perhaps partially reinforced by examining the questionnaire results with twelve (12) *No Computer* responses. While the number of questionnaires is insufficient to draw reliable statistical conclusions, this is a seven percent (7%) no response rate.

Considerable time was spent discussing comments on beliefs about people and what drives decision-making. The belief expressed is that when facing a common problem and provided with common information that most people will arrive at a single solution. Eventually

funding is an issue and the whole concept of value proposition was discussed during several interviews. It was indicated that as the county budget was being prepared, it was obvious that money is perhaps the single largest issue the county faced. Although getting high-speed Internet throughout the county is "probably a big investment", all respondents felt it one worth making. As leaders of the community, it was generally accepted that it is their job to convey to people the worthiness of this goal. The problems faced is the legacy from prior administrations in the form of declining occupational tax base, and a budgetary process often performed privately causing distrust among citizenry. While discussing how the community might fund broadband Internet and laptops for K-12 student's initiatives, it was apparent that like mindedness might be ambitious. The overwhelming consensus among the respondents was the clear need for broadband Internet coupled with reluctance by many in the community to invest any money into such a project. Another respondent believed that people in this small, rural community would much rather relish in their shared families histories than to invest in a way that will insure continued viability of the area.

Each respondent expressed the need for expanded online learning by adults in the community, but never communicated specific needs. The general frame of reference was that of improved status through job acquisition or promotion. One elected official did note that as adults we should never stop learning, while others doubted whether many *older* adults would invest the time unless required to do so. One respondent did have a vision for learning beyond vocational based need. The concept was integrated with the "social clubs mentality" that many people in this rural community valued.

Only one respondent felt that local government should be in the business of either providing broadband Internet service, or at least subsidizing its existence. Because these people are all on the same leadership team, one would expect more discussion on this topic. The reasons most given by those who do not believe that local government should be involved were that private business possesses the need human and financial capital, and that the public sector should not be competing with the private. One respondent stated, "*I think there are some things that local governments don't really need to be competing against the private sector...the phone companies can do a better job than we could.*" This is also a prime example of a reference to DSL service as being the only alternative for high-speed access. One dissenting voice felt strongly that local government must play a critical role in this area.

Figure 1
Broadband Internet as the foundation with the seven related themes affecting community e-readiness

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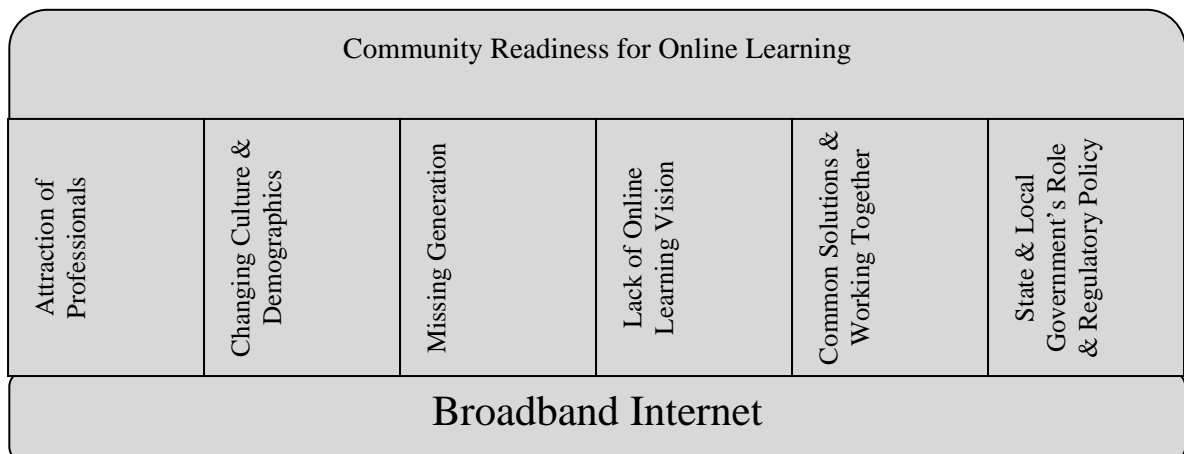
The model depicted in Figure 1 presents broadband Internet as the foundational cornerstone with seven thematic categories that have significant influence on the readiness and acceptance of online learning in this rural community. Broadband Internet is necessary for online learning acceptance but shouldn't be considered the lone solution. Each of the themes discovered during research must also be addressed to foster positive attitudes and acceptance of learning via the Internet.

CONCLUSION

If what we know can really be described as a function of the communities in which we participate (Wood & Judikis, 2002; Nelson, 1993) and not just our own individual thinking process, then the reasoning for empowering rural areas becomes more persuasive. High-speed Internet is certainly only one potential influencing factor for an educated rural community (Thompson, 2002). The rationale for broadband Internet deployment into all areas of the United States is simple; provide access, train the public and measure effects so that adjustments can be made as needed. Educational attainment, social differences and income levels lower than metro-America are current distinctions between rural and urban areas (Mills & Whitacre, 2003). If technology is to support and meet the goals of communities by increasing the capacity of residents, associations and organizations to foster and sustain positive change (Pinkett, 2003), then rural America cannot be left out of the broadband plan. Simply providing broadband Internet to all people will not eliminate the Digital Divide (Servon, 2002). The digital divide is not going to "fix itself", nor will it simply disappear. Concerted efforts by both Federal, state and at times local governmental bodies are necessary to assist in bridging the gap. Private companies, although critical to the process, are unable to resolve this issue because of commitments to constituents demanding higher profits and returns on investment, and the uncertainty caused by territorial boundary disputes among traditional providers including telephone companies. Legislative bodies at the federal and state levels along with the executive leadership must transcend the normal political process of claiming successes and then accepting credit, We must instead learn from past successes like the electricity and telephone extensions into rural America in the late 19th and early 20th centuries. Ethical dilemmas are always multifaceted depending upon one's point of view. If one is on the privileged side of the divide then the tendency is to resist the use of public funding to assist less served areas. If you are on the underprivileged side of the divide then arguments that imply choice decides levels of service are likely to resonate bitterly. The issue that remains is that of equal access to broadband for rural Americans and the educational, economic and social opportunities that accompany this challenge.

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