Internet Use in the Texas-Mexico Initiative

**Jorge Adrian Garcia**, Undergraduate Research Assistant  
**Gary J. Wingenbach**, Assistant Professor  
**Manuel Piña, Jr.**, Professor and Coordinator of International Activities  
**Wayne T. Hamilton**, Director of the Center for Grazing lands and Ranch Management

Texas A&M University  
Department of Agricultural Education  
2116 TAMU  
College Station, Texas 77843-2116  
Phone: 979-862-1507  
FAX: 979-845-6296  
Email: g-wingenbach@tamu.edu

**Abstract**

Internet use to enhance education and for research purposes has increased in lesser developed countries. Many countries, such as Mexico, have realized added benefit from high speed connections and increasing access and availability. However, Internet use for agricultural research purposed in northeast Mexico may not have progressed as much as it has in other countries. The purpose of this study was to analyze Internet use among students and faculty members participating in the Texas-Mexico Initiative through the Center for Grazinglands and Ranch Management. This study utilized qualitative research methods. Data were collected through interviews (one-on-one and focus groups). Internet access was available, but mostly for middle and upper class individuals or those students enrolled in a university. In the university setting, undergraduate students used the Internet mainly for personal reasons, such as e-mail, chats, and games. Graduate students used the Internet primarily for research reasons. Widespread availability to Internet resources beyond the university setting posed a barrier to its use among all participants. According to individual interviews, the best way to remove or diminish obstacles to using the Internet is through continued education. Universities in northeast Mexico were doing their best to improve computing facilities to encourage students and faculty to do more research using the Internet.
Introduction

There has been much discussion about computer usage in education, and how computer technologies increase the effectiveness of studies and research. This change can be seen in the United States due to the accessibility of the Internet. However, what effect does the Internet have on research and education in lesser developed countries? There is an increase in communication technology used to deliver instruction in agriculture, but the lack of understanding prevents the expansion of use for this technology (Chizari, Movahed, & Lindner, 2003).

An earlier study conducted in Botswana showed that information technology was useful for research management, with respondents agreeing it was moderately to highly useful (Subair & Kgankenna, 2002). How does the lack of technology or its effective use hinder research? There is limited use for research if the people who need it most are not able to access it. As research is completed, it can be easily accessible worldwide via Internet. Even in underdeveloped countries, Internet accessibility is now attainable. But, why is Internet use not as common in these countries?

Chizari, Movahed, and Lindner (2003) stated that while the Internet has fairly widespread adoption and use in educational institutions in developed countries, educational institutions in developing countries fail to enjoy the same usage; this is especially true in underdeveloped countries including Iran. The reason why, is still unclear.

Texas A&M University and three universities in northeast Mexico (Universidad Autónoma de Tamaulipas, UAT, in Ciudad Victoria, Tamaulipas; Universidad Autónoma de Nuevo León, UANL, in Monterrey, Nuevo León; and Universidad Autónoma Agraria Antonio Narro, UAAAN) started the Texas/Mexico Initiative. The initiative provides an opportunity for institutions from both countries to work together in collaborative agricultural research projects.

Texas A&M University has been involved in international research and development projects for many years. In 2000, eight bi-national agricultural development projects were initiated between the Texas A&M University Center for Grazinglands and Ranch Management (CGRM) and the Technical Consortium of Northeast Mexico (Consortio Técnico del Noreste de México Asociación Civil; Consortium) (Piña, 2001). The Consortium is a legally constituted and recognized organization composed of five universities, research and development governmental and non-governmental organizations, and producer associations from northeast Mexico. Texas A&M University has been collaborating with the Consortium informally since 1992 and formally since 1997 (Piña, 2001).

Purpose and Objectives

The purpose of this study was to analyze Internet use among students and faculty members participating in the Texas-Mexico Initiative through the Center for Grazinglands and Ranch Management. The objectives guiding this study were to:

1. Determine Internet use for research and communication between professors and students.
2. Identify possible obstacles that might deter individuals from using the Internet.
3. Seek methods to reduce obstacles to Internet use.
Methods

This study utilized qualitative research methods. Data were collected through interviews (one-on-one and focus groups). The sample consisted of students, professors, and agricultural producers associated with the Texas Mexico Consortium. The study was completed in collaboration with the Texas Mexico Initiative through the Center for Grazinglands and Ranch Management. Through the initiative, a student exchange program was conducted to aid in institutional development and sustainability. A tape recorder was used during the interviews. The same set of questions was asked during each individual interview. Three main questions guided the interviewing process.

1. How often do you use the Internet and what is its availability for research purposes?
2. What are the major obstacles to using the Internet?
3. How can these obstacles be removed or diminished?

Qualitative data obtained from interviews were analyzed using inductive data analysis, including two essential sub-processes: coding and categorizing. Coding allowed identification of information units or single pieces of information that stand by themselves that are interpretable in the absence of additional information. Categorizing is a process whereby previously coded data are organized into provisional categories on the basis of “look alike” characteristics (Lincoln & Guba, 1985).

Trustworthiness (similar as validity and reliability in quantitative research) of this study was established by using “thick description techniques” (Lincoln & Guba, 1985). “Thick description” involved providing enough direct citations from the interviews so that readers could see where the conclusions were drawn. Interviews were conducted in Spanish, and the researcher translated the interviews for the study.

Findings

Internet use for research and communication between professors and students.

Throughout the travels in three different cities, it was apparent that Internet access was available. The problem was that the Internet was available mostly to middle and upper class individuals, or those students enrolled in a university. One UANL student from stated, “We have Internet available, but it is not helpful for us to do research with because it is too slow or it is only available on campus.” Computers are available on the university campuses, but many times this was the only way students had computer access.

Primarily, there was evidence that the Internet was used mainly for personal reasons, such as e-mail, chats, and games. Differences were noted between professors and graduate students. One UAT professor stated that most of her work and research was conducted via the Internet because of her lack of resources.

Internet use varied according to economic status and educational level. For example, undergraduate students rarely used the Internet, yet graduate students increased their usage primarily for research reasons. There were no complaints from any of the students or faculty about the availability of computers with Internet access. Students and faculty have very good access to fast connections on campus, but problems arise when they return home where their Internet connections are much slower and unreliable. Many students only had Internet access on campus.
Possible obstacles that deter Internet use.

When asked the first question, individuals provided a glimpse of the obstacles facing Internet use. One important obstacle to Internet use was the lack of widespread availability. The UANL had a computer lab with over 900 computers, all with broadband Internet connections. They also had wireless connections available in different points throughout campus. One UANL professor stated that “…many students have not had access to the Internet and do not know how to use it. They [students] are unaware of how to take advantage of the information and other uses it has available to them.”

A barrier at UAAAN was that a large percentage of students were from rural communities or from the southern part of Mexico, where not only computers and the Internet were not as readily available, but many of them did not have access to electricity. Students from lower income families were not able to afford home computers and some did not have time to learn about it in school because of their studies or work-related obligations.

Another important barrier was the hesitancy to adopt new technologies. Many individuals knew about the Internet, but their customs (traditions) kept them from accepting it as a source of information.

Methods to reduce obstacles preventing Internet use.

According to individual interviews, the best way to remove or diminish obstacles to using the Internet is through continued education. Through education, professors and students may realize the benefits of using this technology in their studies and research. Some of the participants agreed that the barriers will not be eliminated entirely because some producers they worked with were too traditional and suspicious of new technologies.

Some professors did not use the Internet because they believed in old educational and research methods. A UAT professor stated that many of his colleagues did not use the Internet because they did not want to take the time to learn it. They preferred doing research by going to the library and finding it themselves. Also, some did not have very good Internet connections in their offices and refrained from using computers. A director for UANL commented while discussing Internet use that he has not had Internet in his office in over two months. He hoped it would be fixed soon but was not concerned, stating, “I don’t have e-mail but it’s not like I use it anyway. The telephone works just fine.”

Conclusion

As times change, so do information technologies. In most cases, these changes are to our benefit, but not so when considering the Internet. The Internet has allowed us to connect to each other worldwide and has made communication much easier. Internet availability has helped researchers better themselves by accessing studies conducted thousands of miles away. However, in order to evaluate the impact of Internet use in developing countries, a longitudinal study should be conducted.

In previous research, it was found that the World-Wide-Web offers great potential for new forms of collaboration. There is, however, a need to learn how to make best use of this new resource (Parker, Wallis, Halama, Brown, Cradduck, Graham, Wu, Wagenaar, Mammone, Greenes, & Holman, 1996). In this study, it was observed that different obstacles such as insufficient access to Internet, fear of adaptation to change, and lack of education on using the Internet for research purposes, hampered its widespread use among participants in
the *Texas-Mexico Initiative*. It was apparent that individuals who used the Internet for research purposes were those with higher education. Students with a master’s degree appeared to use the Internet for research more than did undergraduate students. While many professors used the Internet, it appeared that usage was highest among junior faculty members.

Universities in northeast Mexico were doing their best to improve computing facilities to encourage students and faculty to do more research using the Internet. University officials were installing faster and more reliable connections. Yet, some participants believed the Internet was not the best tool they had to gather information and/or conduct research. One UAT professor stated that even though he had connections in other countries, he was old-fashioned and still believes there is nothing better than the old-fashioned telephone when contacting others.

There is limited evidence to determine if the changes made by these universities will encourage more Internet use and adaptation of information technology. To better understand the barriers to Internet use in Mexico, a long-term investigation should be conducted. Further research will allow investigations in the changes made once individuals are taught how to use the Internet and how it can best benefit them. This study generated more questions than it answered. The Internet was available at northeast Mexican universities, in many cases, at no expense and with relatively good connections. But the question remains unanswered: Why is there not increased use in this information technology tool for disseminating agricultural research to the public?

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