

Southern Illinois University Carbondale  
**OpenSIUC**

---

Dissertations

Theses and Dissertations

---

12-2009

# A Critical Analysis of Rural Teachers' Usage of Online Communities

Sherri A. Snider

*Southern Illinois University Carbondale*, [sherrisnider@frontier.com](mailto:sherrisnider@frontier.com)

Follow this and additional works at: <http://opensiuc.lib.siu.edu/dissertations>

---

## Recommended Citation

Snider, Sherri A., "A Critical Analysis of Rural Teachers' Usage of Online Communities" (2009). *Dissertations*. Paper 81.

This Open Access Dissertation is brought to you for free and open access by the Theses and Dissertations at OpenSIUC. It has been accepted for inclusion in Dissertations by an authorized administrator of OpenSIUC. For more information, please contact [opensiuc@lib.siu.edu](mailto:opensiuc@lib.siu.edu).

A CRITICAL ANALYSIS OF RURAL TEACHERS'  
USAGE OF ONLINE COMMUNITIES

by

Sherri A. Snider

B.S., Eastern Illinois University, 1981  
M.S., Southern Illinois University, 2001

A Dissertation  
Submitted in Partial Fulfillment of the Requirements for the  
Doctor of Philosophy Degree

Department of Curriculum and Instruction  
in the Graduate School  
Southern Illinois University Carbondale  
December 2009

DISSERTATION APPROVAL

A CRITICAL ANALYSIS OF RURAL TEACHERS'  
USAGE OF ONLINE COMMUNITIES

By

Sherri A. Snider

A Dissertation Submitted in Partial

Fulfillment of the Requirements

for the Degree of

Doctor of Philosophy

in the field of Curriculum and Instruction

Approved by:

Dr. D. John McIntyre, Chair

Dr. Joyce Killian

Dr. Mary Wright

Dr. Barbara Hagler

Dr. Christie McIntyre

Graduate School  
Southern Illinois University Carbondale  
October 28, 2009

## **AN ABSTRACT OF THE DISSERTATION OF**

Sherri A. Snider for the Doctor of Philosophy degree in Curriculum and Instruction, presented on October 28, 2009, at Southern Illinois University Carbondale.

### **TITLE: A Critical Analysis of Rural Teachers' Usage of Online Communities**

MAJOR PROFESSOR: D. John McIntyre, Ed.D.

The purpose of this study was to analyze data related to rural teachers' use of online communities. Rural teachers are often isolated in their practice and sometimes have difficulty connecting with other teachers with their same assignments or needs due to their professional setting. As Internet availability increases and online communities proliferate, teachers have more opportunity than ever to seek personal and professional support in virtual relationships when face-to-face ones are not easily available.

In small schools such as the ones included in this study, teachers can become burned out as they perform the difficult task of teaching with few colleagues in their department or grade level to turn to for support. One interview subject said that she and the only other person with the same teaching assignment didn't always have time to communicate and often had to use their lunch period to do so. Another said that she felt very isolated because there were only three of them with the same grade level assignment. The most telling comment came from one high school teacher, "I am the foreign language department."

In spite of these expressed feelings of isolation, this study's results do not support widespread use of online communities by these particular rural teachers to help fill their personal and professional needs. The only online communication technology widely used was email. At a minimum, every subject in this study had access to a high-speed Internet connection, functional technology, administrative support, and training. With this type of support already in place, further study is needed to discover what would increase awareness and use of online communities by this group of teachers. Additionally, similar studies in different rural school settings might show different results. Comparisons of study findings between rural schools in different geographic locations would be revealing. Such comparative studies could help inform administrators and online community developers who wish to better meet the needs of rural teachers.

## DEDICATION

I would like to express my gratitude to those who supported me in completing this project. My parents, Russell and Shirley Snider, have always supported my academic endeavors and even helped by driving me on some of the long commutes to Carbondale so that I could get much needed rest. My sister, Tammy Harmon, provided a sympathetic ear and even came to my oral defense to ease my nervousness. My dear friend, Beth Kinkade, patiently listened to my academic musings and encouraged me over pizza more often than I can count.

Thank you to my committee chair, Dr. McIntyre, for helping me clarify my topic and for providing much needed advice and calm wisdom when I needed it. Thank you to Dr. Killian for encouraging me to try new and difficult things. Thank you to Dr. Barbara Hagler for her attention to detail, Dr. Christie McIntyre for her gentle suggestions, and Dr. Mary Wright for her mathematical input. Thanks to Mohan Pant in the stats lab for his clear and simple advice on all things statistical.

I especially want to thank my colleagues at East Richland Middle School for their support and patience. Thanks to Julie Clodfelter and Jodi Hout for covering numerous classes so I could get to Carbondale on time.

Finally, I need to thank all those busy teachers who filled out surveys and spent much time on the phone completing interviews. Without their contributions, this study would not have been possible.

## TABLE OF CONTENTS

<u>CHAPTER</u>	<u>PAGE</u>
ABSTRACT.....	i
DEDICATION .....	iii
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
CHAPTERS	
CHAPTER 1 – Introduction.....	1
Statement of the Problem.....	3
Research Questions.....	4
Significance of the Study .....	4
Assumptions and Limitations .....	5
Definitions.....	6
Summary.....	7
CHAPTER 2 – Review of Related Literature.....	8
Isolated in a Connected World.....	8
Online Mentoring.....	9
Teacher Professional Development and Continuing Education .....	14
Collaboration and Community Building.....	18
Factors Affecting Online Community Use .....	24
Conclusion .....	25
CHAPTER 3 – Methodology.....	27
Introduction.....	27

Population and Sample .....	27
Sampling Methods .....	28
Instrumentation .....	28
Data Collection Procedures.....	34
Rationale for Data Collection Method.....	36
Data Analysis .....	38
Summary .....	40
CHAPTER 4 – Findings .....	41
Introduction.....	41
Response Rate.....	41
Research Question 1 and Discussion .....	43
Research Question 2 and Discussion .....	46
Research Question 3 and Discussion .....	59
Research Question 4 and Discussion .....	61
Research Question 5 and Discussion .....	64
Research Question 6 and Discussion .....	70
Summary .....	74
CHAPTER 5 – Discussion, Conclusions, Recommendations .....	76
Introduction.....	76
Discussion of Research Question 1 Findings.....	77
Discussion of Research Question 2 Findings.....	80
Discussion of Research Question 3 Findings.....	83
Discussion of Research Question 4 Findings.....	85



Discussion of Research Question 5 Findings.....	86
Discussion of Research Question 6 Findings.....	90
Recommendations.....	91
Summary.....	94
REFERENCES .....	96
APPENDICES .....	101
Appendix A – Survey.....	102
Appendix B – Interview Guide.....	106
Appendix C – Survey Results.....	108
VITA .....	116

## LIST OF TABLES

<u>TABLE</u>	<u>PAGE</u>
Table 1: Interview Subject Selection Criteria.....	36
Table 2: Number of Certified Personnel per School.....	42
Table 3: Frequency of Professional Usage .....	43
Table 4: Frequency of Personal Usage .....	45
Table 5: Age and Gender .....	47
Table 6: Subject Matter Teaching Assignment.....	48
Table 7: Grade Level Teaching Assignment .....	49
Table 8: Years of Experience.....	50
Table 9: Professional Reasons for Using Online Communities.....	60
Table 10: Hindrance to Using Online Communities.....	65

LIST OF FIGURES

<u>FIGURE</u>	<u>PAGE</u>
Figure 1: Online Communities Discussed in Chapter 2.....	3

## CHAPTER 1

### INTRODUCTION

The business of educating children is a complex one. While many aspects of schooling have remained the same for hundreds of years, many others are changing rapidly. On the whole, students still meet in classrooms, sit at desks, and look to the teacher for guidance much as they always have (Ryan & Cooper, 2007). At the same time, computer technology has changed everything. Students of all ages now have access to a world of information, and that information is increasing at a dizzying rate.

Teachers must scramble to keep up. Those teachers who have been practicing their craft for a number of years look back on their teacher preparation courses with a smile, realizing how little that coursework prepared them for today's students. However, those more seasoned teachers have something that money cannot buy—experience. Newer teachers graduate with more technical knowledge and the latest pedagogical dogma, but have little classroom experience. Gathered into one faculty, teachers from all levels of experience and preparation come together for the common purpose of educating children.

Teachers face other pressures. They must prepare their students to make the cut on high stakes tests, design curriculum that will engage the disengaged, and research ways to address the diverse needs of the learners in their classrooms. They must carve out the time to design lessons, meet with concerned parents, and complete required paperwork. All of this must be balanced with the demands of family life and personal

obligations. One place to find help in dealing with these difficult issues is in a supportive group of other teachers. No one understands the stress of teaching like other teachers.

In rural settings, establishing supportive relationships with other teachers in similar teaching situations can be difficult. A teacher in a small, rural high school may be the only subject matter expert in the building (Falvo, 2003). Other teachers in the same building may understand the culture of the school, but may not understand the difficulties involved in teaching an academic subject other than their own. Mentoring relationships for new teachers may be possible, but ideal matches based on common teaching settings may be impossible. Even experienced teachers often look outside themselves for information and support in practicing their craft. No one person knows everything there is to know about teaching and learning. We need each other.

Where should teachers turn when help is unavailable at their teaching site? The Internet is one answer. In addition to the wealth of information available on the worldwide web, communication technologies are rapidly evolving that facilitate online interaction and collaboration. Many online communities already exist to meet the specific needs of teachers. With Internet access, help is a mouse click away. Figure 1 lists the online communities discussed in Chapter 2 of this study.

The forums listed in Figure 1 were designed and utilized for specific purposes and incorporated user friendly technologies so community members were able to participate with little or no training. Numerous other online communities exist with similar user friendly interfaces. Some are subscriber based, while others are free and open to any interested user. Additionally, many colleges and universities are now offering coursework for professional development and continuing education requirements online

so that practicing teachers may complete them at their convenience. Many such courses require participation in some form of online forum by class members.

<b>Online Community</b>	<b>Purpose</b>
Connect-ME	Mentoring and support forum for math teachers
Helpmate	Forum for undergraduate education majors to participate in tutorial sessions
Lighthouse Project	Mentoring forum for 1 <sup>st</sup> year teachers
FarNet	Communication forum for rural New Zealand teachers
NASPE-L (National Association for Sport and Physical Education Listserv)	Listserv for physical education teachers
Blackboard	Computer-mediated communication forum
Nicenet	Mentoring forum for undergraduate special education majors
SENCo	Discussion forum serving special needs coordinators in the United Kingdom

*Figure 1. Online Communities Discussed in Chapter 2*

Internet technologies also exist that allow general communication for whatever reason. Although available outside specific online community forums, they are often incorporated into forum structures. Some examples are chat rooms, instant messaging, email, podcasting, and blogs. Some of these services are subscriber based, and some are open to any user willing to register. Internet technologies such as these can be utilized by individuals or groups who wish to set up their own communities at whatever level of formality agreed upon by users. If such technologies are available to the casual Internet user, why can they not be used to provide professional support for teachers?

### Statement of the Problem

Teachers are in the serious business of educating children, and the stresses associated with teaching are many. Teacher attrition and isolated teacher practice

continue to be problems, and teachers need support to overcome them. Rural teachers are especially isolated in their practice (Falvo, 2003). However, most teachers in the United States have access to the Internet and could turn to virtual communities for support. This study examines usage patterns of online communities by rural teachers.

### Research Questions

Using an analysis of survey and interview responses, this study attempts to answer the following questions:

1. How often do rural P-12 teachers use online communities for personal and professional reasons?
2. Are certain demographic characteristics associated with the use of online communities?
3. For what purposes do rural teachers use online communities?
4. What types of online communities do rural teachers use to meet their personal and professional needs?
5. What are some perceived hindrances or enablers to online community usage by rural teachers?
6. How do rural teachers utilize online communities for mentoring support during their first years of teaching?

### Significance of the Study

The attrition rate for teachers with three to five years of experience is 20-30% (AFT, 2001; Brown, 2003). New teachers list lack of support more often than low salary as their reason for leaving the profession (AFT, 2001; Joftus & Maddox-Dolan, 2002). In response to this problem, the American Federation of Teachers (AFT) recognizes that

induction programs are essential for new teacher success and cites research that shows teachers who didn't participate in an induction program were twice as likely to leave during their first three years of teaching as those who received some type of formal induction (2001).

Mentoring is one answer to the problem of new teacher attrition. However, implementing mentoring programs is expensive for school districts and time consuming for participants. Facilitating ideal matches in mentoring relationships where partners teach in the same building and are experts in the same subject matter area is often difficult, especially in rural schools (Odell & Huling, 2000). On the other hand, communication with a supportive mentor as part of an online community is available to any teacher with Internet access.

More experienced teachers also have issues that might be ameliorated by participation in a supportive online community. Computer technologies are facilitating the explosion of available knowledge, students are more technology savvy than many of their teachers, states are requiring continuing education for recertification, and government regulations are mandating their students to pass high stakes tests. To stay current, educational practitioners need access to the resources that a supportive community could provide. Rural teachers may not have access to such resources locally, and the Internet is a natural outlet for those with connectivity.

#### Assumptions and Limitations

This study makes the following assumptions:

- (1) Study subjects were certified by the state of Illinois.



- (2) Study subjects who returned the survey or participated in telephone interviews were representative of those teaching in Richland County, Illinois.

This study has the following limitations:

- (1) Study subjects were limited to those teachers practicing in Richland County in southeastern Illinois.
- (2) The assessment instruments were developed by the researcher.

### Definitions

For the purposes of this study, certain terms are defined as follows:

*Asynchronous communication:* Online communication that takes place between users one at a time using such technologies as email, discussion boards, and weblogs (blogs).

*Community of practice:* A group of people with common goals and social and cultural practices created for the purpose of common learning.

*Computer-mediated communication (CMC):* Any communication that occurs through two or more networked computers.

*File transfer protocol (FTP):* An Internet protocol used for file sharing.

*Internet:* Global system of interconnected computer networks.

*Internet forum:* Online bulletin board that manages user-generated content.

*Online community:* A group of people with common purposes that communicate primarily through Internet technologies.

*Professional learning community:* A group, usually educators, formed for the purpose of enhancing professional practice.

*Rural:* A non-urban setting with limited population and services, especially geographically distant from a university with a teacher education program.

*Synchronous communication:* Real-time communication and collaboration facilitated by technologies such as online chat, instant messaging, and web conferencing.

*Telecollaboration:* Collaboration facilitated by Internet technologies.

*Virtual community:* Same as online community.

### Summary

As teachers continue to practice their craft in an ever-changing world, they need support and access to resources to remain effective at what they do. Membership in a collaborative community can help provide this support. Since many teachers, especially those practicing in rural areas, may not have convenient access to professional communities locally, the Internet provides the technology for reaching out to others for support. This study examines rural teacher usage of online communities for personal and professional support.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### Isolated in a Connected World

Working in isolation has long been recognized as problematic for teachers, especially for those practicing in rural areas. In some rural settings, one secondary mathematics or language arts teacher may be the only subject matter expert in that discipline in the building or district (Falvo, 2003). For teachers practicing in geographically separated schools, opportunities for face-to-face collaboration among colleagues for academic and social support are often limited or unavailable.

At the same time, current educational trends emphasize technology use and encourage participation in professional learning communities to enhance educational practice. Internet technologies are now being utilized to address the concern of isolated pedagogical practice by establishing online communities to connect teachers to meet a variety of perceived needs. Online communities have the ability to transcend time and distance and are convenient and flexible for those teachers with Internet connectivity (DeWert, Babinski, & Jones, 2003).

In a review of studies involving teacher use of online communities, three main themes emerged. First, university professors, instructors, and graduate students are creating online communities to mentor preservice and novice teachers during their first experiences as educational practitioners (Dalgarno & Colgan, 2007; DeWert et al, 2003; Merseth, 1991; Paulus & Scherff, 2008; Seabrooks, Kenney, & Lamontagne, 2000; Singer & Zeni, 2004). Second, professional educational organizations and universities are establishing online communities to provide convenient access for teacher professional

development and continuing education (Colgan, Higginson, & Sinclair, 1999; Curran, 2002; Dalgarno & Colgan, 2007; Falvo, 2003; Hawkes & Good, 2000; Stephens & Hartmann, 2004). Third, these same groups are creating online communities to encourage professional collaboration and to engender self-sustaining communities for purposes of academic and emotional support for teachers (Hough, Smithey, & Evertson, 2004; Ohlund, Yu, Jannasch-Pennell, & DiGangi, 2000; Parr & Ward, 2006; Pennington, Wilkinson, & Vance, 2004; Selwyn, 2000; Wickstrom, 2003).

### Online Mentoring

Unfortunately, new teachers are leaving the profession in droves. The attrition rate for teachers with three to five years of experience is 20-30% (AFT, 2001; Brown, 2003). Among the numerous reasons given for leaving the profession, new teachers cited lack of support more often than low salary as their reason for leaving (AFT, 2001; Joftus & Maddox-Dolan, 2002). As a result, the American Federation of Teachers (AFT) has developed policy that recognizes induction programs for new teachers as essential for teacher quality and success. To support this stand, AFT cited research that showed that teachers who didn't participate in an induction program were twice as likely to leave during their first three years of teaching as those who received some type of formal induction (2001). The National Education Association has published similar figures (Brown, 2003).

Research has shown that effective teacher induction saves districts turnover costs as both new and veteran educators stay in their teaching positions longer where such programs are in place. Well-planned induction procedures help new teachers function

more effectively in their classrooms and increase job satisfaction for veteran teachers (Joftus & Maddox-Dolan, 2002).

Even though mentoring has been shown to be effective in retaining new teachers, it is time consuming for mentors and expensive for school districts to implement. In rural districts, appropriate mentors are often unavailable in close enough proximity for optimal effectiveness. With online technologies now widely available, virtual mentoring relationships could be facilitated more conveniently and cheaply than face-to-face arrangements. However, research has shown mixed results regarding the effectiveness of online mentoring.

Merseth (1991) followed 39 first-year teachers newly graduated from Harvard University as they participated in an online mentoring community to see if an interactive network would provide personal, emotional, and technical support. Participants were provided with computers that they passed on to new participants as they left the study. Using rationalistic methods, Merseth collected data by mail survey, frequency of use on network, and structured follow-up interviews.

Comparing mean scores from a Likert scale survey, Merseth (1991) found that new teachers used the virtual network more for moral support and reducing isolation than for enhancing teaching techniques. Excerpted interview responses supported these findings. One possible reason for this finding was that file sharing was unavailable to participants at this stage of development of Internet technologies, and communication was easier for subjects to achieve than sharing curricular materials.

Dalgarno and Colgan (2007) studied 27 novice elementary math teachers who participated in Connect-ME, an online mentoring and support community. The purpose

of this study was to determine if a forum such as Connect-ME could help meet the needs of participants through online mentoring relationships. Data were collected from two 90-minute focus groups and 16 one-hour-long phone interviews conducted over a two-month period. The authors employed a naturalistic approach by categorizing online usage by participants into five emergent themes: formal and informal teacher professional development, personal teaching experiences, sharing, communicating, and access to resources.

As a result of their analysis, Dalgarno and Colgan (2007) determined that some perceived needs could be met through sharing and communication in an online community such as Connect-ME. Study participants in geographically remote areas acknowledged feelings of isolation and reported that they valued the opportunity to connect with other Connect-ME members. Even though collaboration was not evident, sharing and communication was perceived as the greatest benefit to participants.

The Lighthouse project, an online mentoring forum, involved 12 first-year teachers, four experienced teachers, and eight university faculty members involved in a naturalistic study (DeWert, Babinski, & Jones, 2003). The main goal of the researchers was to study use of the forum as an online support community for novice teachers. To begin the study, participants attended a half-day orientation session and were provided laptops, university email addresses, and unlimited Internet access. Researchers collected data from asynchronous communications (email and threaded discussions), structured phone interviews, and survey results to measure effectiveness of the Lighthouse project as an online support group in terms of peer support, collaborative problem solving, and reducing feelings of isolation.

As a result of their investigation, DeWert et al. (2003) found that participants in the Lighthouse online community reported feelings of increased emotional support, increased confidence in teaching, and improved problem-solving skills. Interview responses to the question about what was most helpful to participants of the online mentoring community showed subjects' appreciation of emotional support and encouragement, and decreased feelings of isolation and helplessness.

Paulus and Scherff (2008) studied 15 English education preservice teachers and their use of Blackboard, a computer-mediated communication (CMC) forum. The researchers wanted to find out what topics and concerns would be most discussed by teaching interns, the extent of psychological support derived from participation in an online community, and how teaching interns would make meaning of their experiences through online dialogue. Data were collected from online discussions posted on the CMC forum as part of a required 15-week secondary languages arts methods course taught by one of the researchers. Subjects posted 360 messages, while the instructor posted 15 messages.

In this case study, discussion postings were analyzed by both researchers using the constant comparative method and categorized into six themes: student issues, university and program concerns, curriculum, relationships, organization and time management, and classroom ownership. Furthermore, Paulus and Scherff (2008) found that study participants used the online forum three different ways: emotional engagement, responsiveness to other participants, and discourse patterns. The researchers concluded that online conversations should emerge naturally and should not be too closely directed; providing a safe space to discuss taboo topics is an important

support mechanism; storytelling triggers emotional engagement and support among online community members; and CMC has the potential to provide psychological, emotional, and cognitive support for teaching interns.

Seabrooks, Kenney, and Lamontagne (2000) studied the use of Nicenet Internet Classroom Assistant by 17 undergraduate students mentored by 14 graduate students from two different universities' special education programs. In this naturalistic study, researchers used descriptive comparisons and case studies to explore the benefits and limitations of teacher mentoring through Internet collaboration. Information was gathered through pre- and post-study surveys, analysis of online interactions, and a final video conference.

Mentor survey responses showed mean gains from pre- to post-study on survey items pertaining to nonjudgmental responding, analyzing personal teaching practices, providing a risk-free climate for developing teachers, and accepting mistakes as mentors. Gains were also reported in teaming skills related to listening and building team consensus. Negative trends were observed on items related to confronting difficult classroom issues, active listening, and communicating support (Seabrooks et al., 2000).

In the same study, Seabrooks et al. reported mean gains for mentee responses on items pertaining to exploring new strategies, assessing personal teaching effectiveness, and collaboration skills. Survey responses related to mentor feedback and improving teaching skills showed negative trends. Even though study subjects generally found online mentoring to be a positive experience, participation in the Nicenet forum was generally not perceived to be as effective as face-to-face mentoring (Seabrooks et al., 2000).



Singer and Zeni (2004) studied 61 preservice English teachers and their use of an online mentoring forum over five semesters. The researchers set up a listserv using Majordomo freeware and made it available to their students during their student teaching semester. The purpose of this naturalistic study was to explore the use of the listserv as an inexpensive way to improve supervision and mentoring of preservice teachers. Researchers gathered data from online conversations, informal interviews, and group focus sessions.

Using a collaborative action research model, Singer and Zeni categorized data using a grounded theory approach. They analyzed 2152 messages from 61 students and 641 messages from university supervisors. The researchers found that participants used the listserv for storytelling, support, bonding, collaborative problem-solving, and development as reflective practitioners. Conversations showed evidence of growth in reflective practice and transition from role of student to that of teacher. The authors concluded that the online forum should complement live mentoring, not replace it, and both continue to use it with their students.

### Teacher Professional Development and Continuing Education

Most states now require specific continuing education and/or professional development experiences for teachers to renew their teaching certificates, with 50% of states no longer granting permanent licensure (Ryan & Cooper, 2007). Such experiences might include learning how to use new technologies, becoming more proficient in a particular subject matter area, or finding ways to accommodate diverse learners.

Many teachers are taking advantage of online learning communities to fulfill professional development and licensure requirements. Teachers geographically distant

from a university or other educational provider can complete online coursework or meet professional development requirements at their convenience through an Internet connection. Comparisons of online educational experiences with face-to-face experiences show mostly positive outcomes, and studies of online usage patterns found that participants utilized virtual learning communities for a wide variety of purposes related to teaching.

Colgan, Higginson, and Sinclair (1999) studied 60 elementary teacher candidates attending Queen's University as they participated in an enrichment program called *The Joy of X*. They continued the study as the subjects graduated and committed to participate in Connect-ME, an online learning community. In this study, researchers were interested in developing a theoretical framework for developing successful online communities and in obtaining empirical data regarding online teacher professional development issues. Researchers employed naturalistic methods in collecting and analyzing data gathered from questionnaire responses and focused interviews.

In the preliminary stages of their study, Colgan et al. (1999) found that all teacher participants were regular email users, even though experience with the Internet varied greatly among subjects. Participants used the Internet most often to find activities and lesson plans but found the quality and organization of existing online materials disappointing. Study subjects also used the Internet for locating assessment resources and for curriculum integration resources. In addition, participants expressed the felt need for discussion with experts and peers in the areas of curriculum changes, technology integration, and special needs. Subjects were most interested in sharing self-created lesson plans and activities with other members of the online community.

Curran (2002) developed and studied the use of Helpmate, an Internet based software application that allowed university students and their instructors to communicate and disseminate information asynchronously. Study participants included 40 university education majors involved in eight online tutorial sessions that replaced the traditional face-to-face setting. Curran's main goal was to compare the experiences of Helpmate users to those of traditional students in face-to-face classroom settings.

An analysis of questionnaire results from both students and lecturers showed that online chat, desktop sharing, and FTP (file transfer protocol) usage increased each week during the study. Eighty-five percent of student participants found the online tutorial interesting and convenient, 88% found the chat feature helpful, 92% preferred the online environment over a traditional classroom setting, and 84% responded that they felt part of a group (Curran, 2002).

Falvo (2003) used a naturalistic approach to study seven rural elementary teachers and their use of technology. The author wanted to know if these teachers would continue to use newly acquired technology skills to enhance their educational practice through relationships facilitated by participation in an online community. Study subjects were chosen from participants in a weeklong state-sponsored summer workshop about integrating technology use into curriculum. The researcher collected data from open-ended interviews, classroom observations, and analysis of teacher artifacts.

Falvo (2003) found that study participants used the Internet to foster collaboration between students, to build supportive relationships with other teachers, to enhance classroom relationships that support learning, and to participate in collegial sharing. The

author also found that technology helped connect all three schools involved in his study to their communities.

Hawkes and Good (2000) studied 44 teachers (mostly rural) who were participants in three different state-sponsored telecollaborative professional development projects: Feeding Feathered Friends, Bald Eagle Nesting Project, and Discover South Dakota. In this rationalistic study, the authors collected data from asynchronous communications (email listserv), interviews, classroom observations, and survey results. Hawkes and Good found that participation in these online communities assisted geographically separated teachers in enhancing professional practice in the areas of curriculum and teaching skills.

Creating self-sustaining online communities that continue functioning after the study ends has proven to be more difficult. In one such study, Stephens and Hartmann (2004) wanted to familiarize secondary math teachers with educational technology, to encourage its use, and to build a sustainable online community of mathematics teachers with a common interest in teaching with technology. The researchers employed a rationalistic approach involving two separate cohorts of practicing math teachers during two separate years. Both groups were led by the same faculty member and had similar teaching assignments and educational technology experience. All subjects were participants in the Teaching Mathematics with Technology Project (TMTP) that included a summer institute and six follow-up professional development meetings.

To analyze the success of TMTP, Stephens and Hartmann (2004) used Riel and Levin's (1990) network participant structures: 1) organization of network, 2) network task, 3) response opportunities, 4) response obligations, and 5) evaluation and

coordination. The authors felt that the first cohort only met the third criterion as every participant had ease of access to a reliable computer network. Even though subjects were active participants during face-to-face meetings, online participation for these same subjects was minimal and only occurred after direct prompts from TMTP leaders.

TMTP leaders responded to these discouraging results by changing tactics for the second cohort to encourage participation, but these participants did not spontaneously develop an online community either. Even though subjects actively participated in face-to-face meetings and thoughtfully replied to online prompts, they did not initiate any new online discussion and the forum quickly fell silent. This group met the second and third of Riel and Levin's criteria since they completed more specific online tasks designed by TMTP leaders. However, the other criteria were not met. The researchers felt that fostering a sense of obligation to the group was the most difficult of the five criteria to achieve and was the main reason for failure of an ongoing online community to develop (Hawkes & Good, 2000).

### Collaboration and Community Building

Those who espouse constructivist learning theory feel that knowledge is not constructed in isolation and recognize the social aspect of learning in the context of dialogue with others (Shiland, 1999). Membership in a community of practice helps fulfill this need for social interaction as teachers learn to hone their pedagogical skills.

Members of a community of practice share common interests, jargon, and communication patterns. They learn to work in teams where the accomplishment of the team is primary, but each member makes important contributions (Riel & Fulton, 2001). Teachers practicing in isolation without convenient access or opportunity to collaborate

with colleagues or subject matter experts may not benefit from the positive outcomes of professional interaction.

Jean Lave and Etienne Wenger developed one model illustrating the concept of communities of practice. The model's framework includes four interconnected components: community, identity, practice, and meaning (Niesz, 2007). This model emphasizes the social aspect of learning and recognizes that engagement within a community is fundamental to learning. Transferring the concepts of face-to-face communities of practice to virtual communities online is a natural outgrowth of the interactive nature of the Internet. According to Haythornthwaite (2002), online communities exhibit many of the same characteristics as traditional face-to-face communities: common goals, membership requirements, hierarchy, shared history, a common meeting place, and rituals.

Hough, Smithey, and Evertson (2004) explored the use of computer-mediated communication (CMC) to create virtual communities of practice. Based on the knowledge that research in this area is new and lacking organizing theory, the authors designed their study to identify essential supports and constraints of teacher reflection in a CMC environment. The researchers' hypothesis was that a positive relationship would be found between participation in a structured online community and the level of reflection related to teaching practice. Study participants were 35 intern teachers in three different cohorts who participated in three semesters of required web-based conferencing. Data were collected over a three-year period, with instructions for participants growing more detailed each year.

Based on data gathered from independent and threaded conference messages, tape recordings of seminars, structured interviews, and group interviews, Hough et al. (2004) found that Year 1 participants had the highest level of reflection relating to teaching practice. The researchers concluded that this result may have been influenced by several factors: a different instructor, a pre-existing learning community, more subject involvement in research design and implementation, and more classroom experience. Year 2 interns focused more on social and emotional issues, while Year 3 interns interacted more on the topic of pedagogical issues. The researchers attributed this finding to the fact that instructors gave more explicit instructions and posting requirements to this group. One surprising finding was that subjects who posted messages less frequently were more reflective.

Ohlund, Yu, Jannasch-Pennell, and DiGangi (2000) wanted to discover whether or not teacher use of Internet-based communication increases positive attitudes toward collaboration. Study subjects were 43 K-12 teacher participants in an interactive Web-based course designed to develop learning communities and to enhance collaboration. The assessment instrument utilized was the *Stages of Concern Instrument: Attitudes Toward the Internet (ATI)*, and was administered as pre-test and post-test.

Ohlund et al. (2000) reported a slight decrease in teachers' positive attitudes toward collaboration after treatment. They also found that those who used chat sessions and mailing lists had less change in their attitudes toward collaboration than other subjects.

Pennington, Wilkinson, and Vance (2004) studied K-12 physical education teachers' use of the National Association for Sport and Physical Education listserv

(NASPE-L). The researchers' opinion that physical educators often work in isolation led them to explore what these teachers talked about publicly while communicating on an online forum such as the NASPE listserv. Using a rationalistic paradigm, the researchers analyzed 333 subscriber messages posted during a randomly chosen month with *n* size based on number of messages rather than number of participants.

Postings were categorized into six emergent themes: professional issues (*n* = 124), teaching activities (*n* = 117), instructional strategies (*n* = 31), technology in physical education (*n* = 26), professional conferences (*n* = 18), and advocacy (*n* = 17). Pennington et al. (2004) found that the conversations were largely professional in nature and that participants cared deeply about their profession and teaching programs. They also found that subjects were willing to share instructional activities, resources, and support with other physical education professionals within the community, possibly resulting in reduced feelings of isolation.

Selwyn (2000) explored teachers' use of SENCo, an Internet discussion forum serving special needs coordinators in the United Kingdom. This study examined how teacher discussion groups work out in practice and if the Internet has the capacity to create virtual communities of teachers as proponents advocate. By analyzing 24 months of online exchanges (18 months archived, 6 months live) among forum subscribers, Selwyn explored the roles of forum participants, development of relationships, emergence of community attachments, and patterns of participation.

Selwyn categorized and coded forum postings (3654 messages and 734 threads) using a grounded theory approach. Even though SENCo had over 900 subscribers at the time, Selwyn found that only 26 regular participants made over one-third of the postings



and gave the forum its identity and character. The researcher found that the forum remained formal and professional and was used for sharing information and support. Even though SENCo showed signs of a collaborative culture, Selwyn found that many conversations exhibited signs of solipsism and emphasized personal identities over communal ones. Selwyn did not find that this virtual community replaced or replicated the staff room function of providing an environment for teachers to relax and unwind, or that online communities are the panacea that proponents suggested.

Using a naturalistic approach, Wickstrom (2003) studied 45 undergraduate students participating in a one-semester reading assessment course taught by the author. The purpose of the study was to examine the effects of an online discussion board on discourse and reflection of preservice teachers. Posting online reflections was a required part of participants' coursework. The author collected data from online postings and survey results.

Wickstrom analyzed the data for content and number of postings on the bulletin board. The researcher counted 639 postings with a mean number of 14 per participant. Even though usage was fairly heavy, the author felt that the forum did not meet expectations. Conversations remained too instructor-driven with less spontaneous participation than expected. Collegial conversations did occur, but only when students had concerns real to them. Subjects who were quiet in class were also quiet online, and some subjects did not see the assignments as authentic. In spite of some disappointment with the project, the author expressed a desire to continue using a modified online forum in future classes.

In another example of a community that failed to develop as researchers had hoped, Parr and Ward (2006) followed K through 12 teachers practicing in 10 isolated schools in New Zealand over a three-year period. The number of participants in the FarNet project varied from 8 to 284, depending upon data collection method. The purpose of this state-sponsored study was to investigate the extent of teacher participation in an online community of teachers in geographically isolated schools for the purpose of sharing resources, communicating about resources, and developing a functioning online community. Of the studies included in this literature review, the participants in this one were farthest removed from one another geographically. The researchers collected naturalistic data from school visits, interviews, teacher self-report, and FarNet site participation.

Parr and Ward (2006) found that their goal of establishing a functioning online community connecting geographically separated participants did not materialize. They had hoped that FarNet participants would post and access resources, communicate about curriculum issues, and find the experience relevant and useful. The only subgroup that developed positively was the Maori community that already existed before they had technological connectivity. One positive finding was that between-school online communications increased 510%.

Even though researchers have found that online communities do not fully replicate the experiences of participating in face-to-face communities, most feel that participation in virtual communities is largely a positive experience and fills many of the same needs for participants in terms of professional interaction and collaboration. Virtual community participants communicate about subjects that interest or concern them, their

postings show professional reflection about pedagogical practice, and they collaborate with other community members to achieve mutually beneficial goals.

### Factors Affecting Online Community Use

The online forums discussed previously in this chapter were designed and utilized for specific purposes. Some were more successful than others in terms of teachers' levels of participation and sustainability of those forums. Researchers have discovered some hindrances and enablers to online usage that affect teacher usage levels. A major hindrance to increased online community usage is lack of time (Dias, 1999; Earle, 2002; Mumtaz, 2000). Teachers are busy people with numerous tasks and obligations to fulfill during precious planning time. Learning how to use new technologies, utilizing online resources, and planning ways to integrate online resources into curriculum takes time, and many teachers report that they just don't have enough time (Mumtaz, 2000).

Some other hindrances to online use are lack of on-site tech support, lack of funds, lack of training, and inexperience using technology. Poor administrative support, lack of functioning technology, and resistance to change also affect teachers' levels of online usage (Dias, 1999; Earle, 2002; Mumtaz, 2000).

Some enablers to online technology use are supportive administrators, teacher motivation, and ready access to technology. Teachers who were committed to their students' learning and were motivated to enhance their own development as educators were also more likely to utilize available technologies (Mumtaz, 2000). Teachers who felt that available technology applications closely matched their curriculum needs and who felt ownership in the technology implementation process also felt more enabled in their online technology usage (Earle, 2002, Mumtaz, 2000).

## Conclusions

Research into the use of online communities for mentoring purposes has shown many positive outcomes. Study participants used a variety of Internet technologies and forums for the moral support, sharing, and collaboration normally found in mentoring relationships. Many subjects reported reduced feelings of isolation as a result of participation in virtual mentoring experiences. The anonymity of the online forum can provide a safe place to discuss taboo topics and to ask for emotional support and encouragement. Even though mentor and mentee participants reported numerous positive outcomes from their experiences with online mentoring, many felt that their virtual relationships did not fully replicate traditional face-to-face mentoring relationships. Perhaps online mentoring experiences should complement, rather than replace, traditional face-to-face mentoring.

Teachers participating in online communities for professional development or continuing education opportunities reported using Internet technologies for locating and sharing curricular resources. Some participants in teacher professional development communities showed increased use of asynchronous communication, some preferred the online environment to a traditional classroom setting, and some were able to build supportive relationships with other teacher participants. While collegial sharing and enhanced pedagogical practice were noted in many studies, development of self-sustaining communities was another matter. Without constant supervision and discussion prompts, most online forums went quiet.

Studies of teachers using online forums for collaboration or community membership showed different levels of pedagogical reflection based on project

circumstances. Subjects who had more input into forum development tended to be more participative, and those who were more reflective in traditional settings were often more reflective online. Online discussions were found to be largely professional and focused on teaching activities or instructional strategies. One group showed a decrease in positive feelings toward collaboration after participation in an online community, while another group's conversations showed evidence of solipsism with individual identity taking precedence over communal identity. As in the area of teacher professional development, some researchers felt that online communities did not replicate the teacher staff room in terms of collaboration and community membership, and that conversations were too instructor-driven.

According to existing research, online communities provide many benefits to recommend them, and participants reported numerous positive outcomes. However, online communities have proven to be difficult to sustain. Any person or group serious about starting a self-sustaining online community should study Riel and Levin's (1990) network participant structures, become informed about hindrances and enablers to online community usage, and plan for ways to encourage and maintain participation throughout the life of the forum.

## CHAPTER 3

### METHODOLOGY

#### Introduction

The findings of this descriptive study could provide preliminary data for future development and study of an online community designed for teachers in a specific rural area to meet specific needs. A survey was administered to a sample of public school teachers practicing in Richland County in southeastern Illinois. Survey results provided demographic data about respondents and described usage of online communities and related technologies by study subjects at a particular point in time. Follow-up interviews were conducted to further explore purposefully selected participants' online community usage patterns and needs. Study findings could help establish guidelines for development of self-sustaining online communities to meet perceived needs of rural teachers.

#### Population and Sample

The target population for this study was rural P-12 public school teachers currently teaching in the United States. The accessible population was P-12 teachers currently teaching in public schools in Richland County in southeastern Illinois. Both public school districts included in the study were technologically rich with high-speed Internet access and functional hardware available to study participants. Potential study subjects were identified as the 198 teachers practicing in East Richland Community Unit #1 and West Richland Community Unit #2 in Richland County, Illinois. The sample in this study was those teachers who responded to the survey and follow-up interviews.

As a rule, researchers want as large a sample as possible. However, cost is often a limiting factor, and a very large sample may waste resources. In addition, a sample size that is too large may make very small differences statistically significant, but not practically significant (Kerlinger & Lee, 2000). Isaac and Michael (1997) suggested that a small sample is acceptable when collecting and analyzing a large sample is not economically feasible. Proper statistical analysis methods can help reduce sampling error. For this study, the sample population was the 151 teachers that responded to the survey and the 12 teachers that participated in follow-up interviews.

### Sampling Methods

Building principals in schools within the target population of 198 teachers were contacted by telephone for permission to survey teachers working there. Surveys were delivered to East Richland Elementary School, East Richland Middle School, East Richland High School, West Richland Elementary School, and West Richland Junior High/High School at scheduled teachers' meetings. The letter required by Southern Illinois University Carbondale's Human Subjects Committee describing the study and enlisting the participation of potential study subjects was attached to each survey. The researcher delivered the surveys to each school personally before each of the teachers' meetings and picked them up afterwards.

### Instrumentation

#### *Quantitative Data Collection*

The initial data collection instrument was a survey designed by the researcher (See Appendix A). The first two questions were designed to gather data regarding age

and gender of respondents. The next four questions asked for highest level of educational attainment, current teaching assignment, years of teaching experience, and satisfaction with current teaching position, respectively. Remaining survey questions related to online communication technology usage. Question 7 asked respondents to indicate which points of Internet access they utilized for professional purposes. Questions 8 and 9 asked respondents to indicate frequency of use of various Internet communities and technologies for professional and personal reasons, respectively. Question 10 asked respondents to indicate professional reasons for which they used online communities, and Question 11 asked respondents to select from a list of possible hindrances to their online community use to meet professional needs.

Where possible, survey questions were designed using forced-choice format. Forced-choice and check-all formats are often used interchangeably in surveys with the assumption that both types of questions elicit the same information from respondents. However, one study showed that respondents consistently endorsed more options on forced-choice questions than they did on check-all formats (Dillman, Smyth, & Christian, 2009).

When considering responses to forced-choice questions, respondents must consider each option one at a time. When responding to check-all-that-apply questions, respondents often consider the list of possible responses as a whole and tend to mark more choices in the top half of the list (Dillman et al., 2009). One possible conclusion is that order of response choices might bias results.

The question regarding current teaching assignment was designed as an open-ended question. In surveying a population as diverse as 198 rural P-12 teachers, a long



list of possible choices might have been overwhelming to potential respondents and possibly have deterred their participation on that particular question. Another consideration in designing this question for this particular group of subjects was the likely possibility of cross-categorical teaching assignments and the confusion this might have caused in making a selection.

Questions 8 and 9 were designed using a Likert style format with choices labeled 1-never, 2-rarely, 3-monthly, 4-weekly, 5-daily, and 6-multiple times per day. Respondents were asked to consider their own frequency of use of a variety of online communication technologies. Question 8 listed different genres of online communication technologies and communities and asked respondents to consider each one separately regarding their professional use. Question 9 was parallel to Question 8 in format, but asked respondents to consider usage frequency for each genre of online communication technology and community for personal reasons. Spacing of numbers stayed consistent throughout and both questions used the same numerical scale, column labels, and instructions (Fink, 2009).

The first seven questions of the survey elicited information to address research question 2: Are certain demographic characteristics associated with the use of online communities? Questions 8 and 9 of the survey addressed research question 1: How often do rural P-12 teachers use online communities for personal and professional reasons?

Survey questions 8 and 9 addressed research question 4: What types of online communities do rural teachers use to meet their personal and professional needs? Question 10 of the survey addressed research question 3: For what purposes do rural

teachers use online communities? Question 11 of the survey addressed research question 5: What are some perceived hindrances or enablers to online community usage by rural teachers?

Questions on the interview guide used to gather information from selected interview participants addressed five of the six research questions (See Appendix B). Since demographic data was already collected on the survey, research question 2 was not specifically addressed during interviews. The first 8 questions on the interview guide addressed research questions 1, 3, 4, and 5. The last two questions on the interview guide addressed research question 6: How do rural teachers utilize online communities for mentoring support during their first years of teaching?

### *Evaluating Internal Validity*

Social scientists have not found validity easy to define, but generally an assessment instrument is said to be valid if it accurately measures what it purports to measure (Vogt, 2005). For an instrument to be considered to have validity, it must also be considered to have reliability even though the reverse is not necessarily true (Kerlinger & Lee, 2000; Vogt, 2005). Instrument reliability is discussed in the next section. Internal validity refers to the degree to which valid conclusions can be drawn regarding the causal effects of one variable on another. Threats to internal validity most often occur in studies using some form of experimental design (Vogt, 2005). In a descriptive study such as this one, some possible threats to internal validity are problems with measurement and instrumentation. Just the act of measuring study subjects changes their responses, with those espousing controversial views being the most affected (Kerlinger & Lee, 2000).

Use of a survey to gather data may cause problems with instrumentation. Since surveys rely on direct communication with respondents, they are reactive in nature. Reactive data collection methods run the risk of generating misleading data. For instance, data are only collected for those respondents who actually fill out and return the survey, and survey questions themselves are vulnerable to bias by both the writer and the responder (Isaac & Michael, 1997).

For an instrument to have content validity, its items should accurately represent the thing being measured (Vogt, 2005). Einstein once said that it is difficult to say what truth is, but sometimes it is easy to recognize a falsehood. Much the same can be said of content validity. It is easier to give clear examples of invalidity than validity (Vogt, 2005). According to Kerlinger and Lee (2000), content validation consists essentially in judgment where one or more researchers judge the representativeness of the assessment items. In this study, assessment items were judged to be representative by the researcher in conjunction with the expert opinions and suggestions of doctoral committee members.

#### *Evaluating External Validity*

External validity refers to the extent to which study findings can be used to draw conclusions about subjects or settings beyond the parameters of the study (Vogt, 2005). Since the sample in this study was from a specific geographic location and the survey was designed by the researcher, findings may not necessarily be generalizable to external populations.

#### *Evaluating Instrument Reliability*

Since the assessment instrument utilized in the quantitative data collection portion of this study was designed by the researcher, reliability was a concern. For an instrument

to be considered reliable, it should have consistency and be as free from measurement error as possible (Isaac & Michael, 1997; Kerlinger & Lee, 2000; Vogt, 2005).

To determine internal consistency of Likert style questions such as numbers 8 and 9 of the survey, researchers often use Cronbach's alpha (Kerlinger & Lee, 2000).

Cronbach's alpha is a measure of internal reliability and estimates the proportion of variance accounted for by a common factor (Isaac & Michael, 1997; Vogt, 2005). On a scale from 0 to 1, a Cronbach's alpha score greater than .70 suggests internal reliability on scaled questions where more than two choices are offered to respondents (Vogt, 2005). In testing internal reliability on the Likert-style survey questions used in this study, the Cronbach's alpha test of reliability among the nine items in question 8 resulted in a score of .70 and a score of .78 among the seven items in question 9 for all respondents.

### *Qualitative Data Collection*

An interview guide designed by the researcher was used to gather information during follow-up interviews (See Appendix B). The guide was based on Patton's belief that the interviewer should outline issues pertaining to research questions beforehand to serve as a checklist during actual interviews (2002). During telephone interviews with selected subjects, the researcher used the questions listed on the guide as conversation prompts to encourage respondents to expand on information gathered from previously administered surveys.

According to Patton, interview questions should be open-ended, neutral, singular, and clear (2002). To ensure that interview questions were open-ended, dichotomous questions and presuppositions were limited as much as possible in designing the

interview guide and in conducting the interviews. To encourage as much singularity and clarity as possible, interview questions were worded so that only one idea was presented at a time, and unclear questions were clarified if the respondent expressed confusion or if the conversation fell into an uncomfortably long silence. Neutrality was addressed by working to establish a comfortable rapport with respondents so that they felt relatively comfortable divulging opinions or patterns of usage that might have been regarded by respondents as too negative or professionally unacceptable.

In designing and implementing interview questions, Patton emphasized the importance of establishing rapport between the interviewer and research subjects so that respondents would feel more comfortable in responding to questions without concern for gaining or losing the interviewer's approval (2002). On the other hand, close rapport can cause a dilemma. Establishing close rapport may open doors, but it also may cause loss of objectivity on the part of the researcher (Fontana & Frey, 2000). To help establish an appropriate level of rapport, the researcher approached respondents through the common experiences of fellow public school teachers.

#### Data Collection Procedures

Subject to approval of Southern Illinois University at Carbondale's Human Subjects Committee, initial quantitative data were collected by survey. Teacher subjects were recruited during teachers' meetings with previous permission of building administrators. The cover letter explained the study and gave instructions for survey completion. Participation was voluntary. After each meeting, completed surveys were collected by building administrators and returned to the researcher. Since the response rate was 76%, no follow-up procedures were implemented to increase participation.

Subsequent to administration of the survey assessment instrument, telephone interviews were conducted with 12 purposefully selected survey respondents. Interview subjects were selected based on their mean responses to questions 8 and 9 of the survey regarding levels of online communication technology usage for professional and personal usage. As illustrated in Table 1, two respondents were selected from each of the following categories: elementary teachers with low usage, middle school teachers with low usage, high school teachers with low usage, elementary teachers with high usage, middle school teachers with high usage, and high school teachers with high usage.

Mean usage scores were considered separately for each level of teaching assignment—elementary, middle school, high school—and only those respondents who provided contact information were possible interview subjects. Of necessity, some survey respondents with lower or higher mean scores than those chosen as interview subjects were eliminated as interview subjects as they chose not to identify themselves to the researcher. When mean scores among respondents in a particular group were very close, the one with higher or lower professional usage was chosen over those with higher or lower personal usage. The researcher also avoided selecting more than one teacher with the same teaching assignment.

Of the 12 interview subjects, 9 were female and 3 were male. The female to male ratio of 3 to 1 for this selected group closely approximated the overall female to male ratio of 3.5 to 1 for total respondents. Four subjects were high school teachers, four were middle school teachers, and four were pre-k or elementary teachers. Included in the group were a math teacher, a music teacher, an art teacher, a Spanish teacher, a physical education teacher, and a language arts teacher. Also included were a special education

teacher, a Title I reading teacher, and a cross-categorical 6<sup>th</sup> grade teacher teaching science and social studies. One subject was a pre-k teacher for at-risk students, one taught a self-contained second grade class, and another taught a self-contained third grade class.

Table 1

*Interview Subject Selection Criteria*

	Number of Interview Subjects	
	High Online Community Usage	Low Online Community Usage
High School Teachers	2	2
Middle School Teachers	2	2
Elementary School Teachers	2	2

During telephone interviews, the researcher employed a conversational style using the interview guide for structure. To close each interview, subjects were asked if they had anything to add that wasn't addressed during the interview. Some expanded or added to their responses; some did not. Responses were recorded by hand during the course of each interview and were transcribed by computer shortly following. This was done so that the researcher could add any missed details, clarify wording, and expand on abbreviated notes (Patton, 2002).

#### Rationale for Data Collection Method

The focus of this study is on a particular behavior—usage of online communities—and demographic characteristics associated with that behavior. The survey is an effective method for eliciting such information. In general, surveys are used

to gather information regarding the incidence, distribution, and interrelationships among certain sociological and psychological variables (Kerlinger & Lee, 2000).

Some sociological variables in this study were subject demographics of age, gender, highest level of education attained, and years of teaching experience. Some psychological variables were frequency of use of various online communication technologies, possible reasons for that use, and possible hindrances to the use of online communities. This study examined any emergent relationships between those sociological and psychological variables.

Even though the personal interview is thought to be the most effective method to conduct a survey, it is often overly time-consuming and cost-prohibitive. The mail questionnaire also has major drawbacks: lack of response and lack of ability to verify responses. Usually, the researcher can expect only a 40% to 60% rate of return (Kerlinger & Lee, 2000). To help ameliorate the problem of poor response rate, the researcher hand-delivered the surveys to individual schools and arranged for each principal to collect completed surveys from those respondents who chose to participate. Using this approach, the survey return rate was 76%. Verification of individual responses would only be possible in a face-to-face interview setting which was not applicable in the case of the written survey.

Since the survey was administered in only one county, 12 follow-up interviews were conducted to gather more in-depth information about purposefully selected subjects' use of online communities. Interviews are used to find out what cannot be directly observed as in the case of thoughts, feelings, and behaviors (Patton, 2000). Since interview subjects had already completed a structured survey, the researcher chose a



semi-structured approach by utilizing an interview guide (Fontana & Frey, 2000). Rather than asking structured questions which allow no deviation from the script, the interview guide outlined issues beforehand to serve as a checklist during actual interviews. In designing the guide, major questions were listed with possible follow-up probes for each question (Patton, 2002).

Following an interview guide helps the interviewer stay on topic, but also provides follow-up probes to further explore topics that arise naturally during the conversational exchange inherent in the interview process. While the interviewer should not purposely bring up questions not listed on the guide, some related topics emerged naturally during the interview process (Patton, 2002).

### Data Analysis

The researcher analyzes data and interprets those results to find answers to research questions and to test hypotheses. The process of analysis includes categorization, ordering, manipulation, and summarization of data in order to reduce data to some interpretable form. During the process of interpretation, the researcher makes inferences and draws conclusions about relationships among the data and searches for the broader meaning illustrated by the data (Kerlinger & Lee, 2000).

In this study, data analysis and interpretation were performed on data gathered from survey results and follow-up interviews. Generally, this research project looked for patterns in the data and any apparent relationships between variables.

In chapter 4 of this study, descriptive data gathered from survey responses are displayed in frequency tables. Data organized in this fashion helps make any patterns in the data more apparent. Survey responses regarding psychological variables such as

purpose of use of online communities were also listed and compared to interview responses. Inferences were drawn from emerging patterns and relationships in the data.

On survey items involving Likert-style choices such as questions 8 and 9 of the survey, responses for different demographic groups were analyzed using chi square cross tabulation methods. Inferences were drawn from these procedures by examining different demographic groups to see if any patterns emerged in relation to their online community usage. Chi square statistical analysis techniques evaluate whether or not two factors in a contingency table are correlated (Glass & Hopkins, 1996).

The chi square method was selected for analysis of quantitative data in this study because none of the question responses were truly continuous in nature. Even though questions 8 and 9 of the survey are Likert-style questions and appear continuous at first glance, possible responses are not truly continuous in nature because of the assignment of specific time values to each numerical choice. Words such as never, rarely, or monthly are not equidistant in relation to elapsed time. Therefore, possible responses are frequency choices rather than choices on a continuum. The chi square technique is suitable for evaluating comparisons of frequencies between groups and is especially useful in tables involving frequencies of forced choices (Isaac & Michael, 1997).

In most instances, some categories such as different age groups were combined before applying the chi square statistical test. Some frequency of use columns were also combined for most chi square statistical tests. This was done when groups contained fewer than five respondents to help satisfy the restriction that no theoretical frequency in a cross tabulation table should be smaller than five (Isaac & Michael, 1997).

## Summary

The purpose of this study was to examine rural teacher use of online communities. Subjects were enlisted from those P-12 public school teachers practicing in Richland County in southeastern Illinois. Data were collected using a paper-and-pencil survey and follow-up telephone interviews with questions designed to elicit responses to the six research questions. The main focus of data analysis was to determine if any significant patterns or relationships among the data emerged. Any inferences drawn can then be used for future research into or development of online communities designed to meet the unique needs of rural teachers.

## CHAPTER 4

### FINDINGS

#### Introduction

The purpose of this study was to examine rural teacher usage of online communities, their purposes for participating in those communities, and any relationships between demographic data and online community use. The types of online communities those teachers accessed, their frequency of usage of those communities, and perceived hindrances and enablers to their use were also examined. As defined in Chapter 2, online communities are a group of people with common purposes that communicate primarily through Internet technologies. Data were gathered by survey ( $n = 151$ ) and follow-up telephone interviews of purposefully selected respondents ( $n = 12$ ).

#### Response Rate

Surveys were distributed to teachers at five different public schools in Richland County, Illinois: East Richland Elementary School, East Richland Middle School, East Richland High School, West Richland Elementary High School, and West Richland Junior High/High School. According to the 2008-2009 Educational Directory published by the Regional Office of Education #12 (ROE 12), the number of certified personnel working in each building is listed in Table 2.

The figures in Table 2 were based on information current at the start of the 2008-2009 school year and did not take into account any personnel changes made after publication of the ROE 12 directory for that school year. Teachers that were listed in

more than one building were only counted once. A total of 151 surveys were returned by certified personnel for a response rate of 76%.

Table 2

*Number of Certified Personnel per School*

School	Number of Personnel
East Richland Elementary School	68
East Richland Middle School	35
East Richland High School	56
West Richland Elementary School	19
West Richland Junior High/High School	20
Total	198

Acceptable response rate is difficult to judge and can vary based upon the research situation, but “higher is better” (Fink, 2009). For this study, the researcher chose group administration of paper surveys rather than mail questionnaires or online administration to increase the potential for return (Dillman et al, 2009). According to Kerlinger and Lee, return rates for mail questionnaires range from less than 40% to at most 50% or 60% (2000). Return rates for Internet surveys is usually much lower with an average rate of 20.7% (Kaplowitz, Haddock, & Levine, 2004). Since the return rate of 76% for this study exceeded previously cited figures, no follow-up procedures were implemented to increase participation.

All 12 of the study subjects purposefully selected for follow-up interviews agreed to participate in telephone interviews. Some subjects agreed to participate during the

initial call, others requested appointed times, and one interview was conducted in two parts due to poor cell phone reception.

### Research Question 1 and Discussion

How often do rural P-12 teachers use online communities for personal and professional reasons?

Survey question 8 asked respondents to indicate their level of online communication technology usage for professional reasons. Possible answer choices for each type of online communication technology listed were 1-never, 2-rarely, 3-monthly, 4-weekly, 5-daily, and 6-multiple times per day (See Appendix A).

Table 3

#### *Frequency of Professional Usage*

Technology Type	1 Never	2 Rarely	3 Monthly	4 Weekly	5 Daily	6 Multiple times per day	Invalid or missing response <sup>a</sup>	M	SD
	% of responses ( <i>n</i> = 151)								
Email	0.7	3.3	3.3	4.6	23.2	62.9	2.0	5.40	1.042
Virtual Conference	84.1	11.3	1.4	0.0	1.4	0.0	2.0	1.20	0.591
Instant Messaging	80.8	12.6	1.3	2.0	1.3	1.3	0.7	1.33	0.895
Blogs	70.2	21.2	4.6	2.0	0.7	0.7	0.7	1.43	0.822
File Sharing	57.6	21.9	7.9	6.0	2.0	4.6	0.0	1.87	1.345
Podcasting	76.8	14.6	3.3	3.3	0.7	0.7	0.7	1.37	0.848
Social Networks	78.1	13.9	0.7	4.6	0.7	1.3	0.7	1.39	0.940
Professional Communities	31.1	25.8	20.5	17.2	4.0	0.7	0.7	2.39	1.241
Distance Education	78.1	11.3	3.3	6.0	0.7	0.0	0.7	1.39	0.865

<sup>a</sup>Responses were considered invalid if the respondent marked more than one answer in the same row and missing if no choice was selected in a particular row.

Based on the frequency of responses reported in each category, email was indicated as most frequently used for professional reasons with 86.1% of respondents indicating that they used email either daily or multiple times per day (See Table 3). Mean scores and standard deviations for each category of online community included in Table 3 further illustrate usage levels and distribution of survey responses.

Over 90% of respondents indicated that they rarely or never used online communication technologies such as virtual conference rooms, instant messaging, blogs, podcasting, social networks, and distance education for professional purposes. Fewer respondents (56.9%) indicated that they rarely or never used online professional communities, while 42.4% indicated that they used online professional communities at least monthly (See Table 3).

Survey question 9 was similar to question 8, but asked respondents to indicate their frequency of usage of online communication technologies for personal rather than professional reasons. This question also offered respondents a range of choices from 1-never to 6-multiple times per day for seven different types of online communication technologies. As with professional use, email use for personal reasons had the highest frequency indicated with 75.4% of respondents indicating that they used it daily or multiple times per day (See Table 4).

Virtual conference rooms were least used for personal reasons with 96.7% of respondents indicating that they rarely or never used them, followed by instant messaging (79.5%), blogs (84.8%), and podcasting (81.5%) which were rarely or never used by a large majority of respondents. File sharing and social networks were slightly more

popular with 31% of respondents using file sharing sites at least monthly and 36.4% using social networks at least monthly (See Table 4).

Table 4

*Frequency of Personal Usage*

Technology Type	1 Never	2 Rarely	3 Monthly	4 Weekly	5 Daily	6 Multiple times per day	Invalid or missing response <sup>a</sup>	M	SD
% of responses ( <i>n</i> = 151)									
Email	2.0	5.3	1.3	15.9	37.7	37.7	0.0	4.95	1.179
Virtual Conference	88.1	8.6	0.0	0.7	0.7	0.0	2.0	1.14	0.490
Instant Messaging	68.9	10.6	4.6	7.9	4.0	3.3	0.7	1.77	1.383
Blogs	70.9	13.9	5.3	6.6	2.6	0.7	0.0	1.58	1.098
File Sharing	53.0	14.6	13.2	11.9	4.6	1.3	1.3	2.03	1.343
Podcasting	65.6	15.9	7.9	7.9	0.0	2.0	0.7	1.66	1.128
Social Networks	51.0	11.9	6.6	10.6	13.9	5.3	0.7	2.40	1.726

<sup>a</sup>Responses were considered invalid if the respondent marked more than one answer in the same row and missing if no choice was selected in a particular row.

During follow-up telephone interviews, the 12 purposefully selected interview subjects used their own words to report their level of online communication technology and online community usage. Of those 12 subjects, 5 reported that they were frequent Internet users. They described their online usage level as very comfortable, very frequent, or used all the time. One said, “I use the Internet a lot.” Others said, “I wouldn’t hesitate to try new things,” “I would be lost without it,” “I’m not afraid to jump in and try stuff,” or “my laptop goes everywhere with me.” One of those who called



herself a “very frequent user” said that she didn’t use the Internet much at school, only at home.

Three interview subjects reported that they were average users. They described their online usage as fairly comfortable, pretty comfortable, or average.

The four remaining interview subjects considered themselves to be low users. Two of those said that they were somewhat comfortable using the Internet, one said that she probably was not as comfortable as other teachers in the building, and the last one said that she only used the Internet as needed and called herself a fairly low user.

## Research Question 2 and Discussion

Are certain demographic characteristics associated with the use of online communities?

### *Demographic Data*

Survey respondents provided demographic information regarding age, gender, highest level of education attained, current teaching assignment, and years of teaching experience. Respondents also provided information regarding job satisfaction and point of Internet access for professional purposes (See Appendix C).

Survey question 2 pertained to the gender of respondents. Of the 151 study subjects, 77.5% were female ( $n = 117$ ) and 22.5% were male ( $n = 34$ ). Survey question 1 requested the age of respondents within 10-year age groups starting with 20-29 and ending with 60 and over. The largest age group for females and for both genders combined was 30-39. By a narrow margin, the largest age group for males was 40-49. The 60+ group was the smallest overall and equal for both genders. The other age groups were similar in size within each gender and overall (See Table 5).

Table 5

*Age and Gender*

Age Range (in years)	Number of Subjects		
	Female	Male	Total
20-29	20	7	27
30-39	44	9	53
40-49	26	11	37
50-59	25	5	30
60+	2	2	4
Total	117	34	151

According to the responses to question 3 of the survey, the highest level of education attained by 60.9% of respondents was a bachelor’s degree while 38.4% had completed at least one master’s degree. One respondent did not complete this assessment item (0.7%), and some respondents indicated coursework hours past their degree level but no other more advanced degrees (See Appendix C).

Question 4 of the survey was a free response question asking subjects to indicate their current teaching assignment. Elementary teachers teaching grades 1-5 in self-contained classrooms comprised the largest group with 22.5% of subjects (See Table 6). Of those elementary classroom teachers, only two were male.

Special education teachers practicing at all levels—elementary, middle school, and high school—were the next highest group with 11.9% of survey respondents (See Table 6). Only one of the special education teachers was male. Six teachers chose not to respond to this survey item, ostensibly to maintain anonymity as those same teachers also

did not provide contact information for possible follow-up questions. Other respondents protected their privacy by providing only a broad grade level assignment (e.g., 6-12 or high school) without specifying a particular subject matter area.

Table 6

*Subject Matter Teaching Assignment*

Teaching Assignment	Number of respondents ( <i>n</i> = 151)	% of respondents ( <i>n</i> = 151)
Pre-K or Kindergarten self-contained	10	6.6
Elementary self-contained (grades 1-5)	34	22.5
Language Arts (middle & high school)	14	9.3
Mathematics (middle & high school)	10	6.6
Social Studies (middle & high school)	7	4.6
Science (middle & high school)	7	4.6
Special Education (all levels)	18	11.9
Physical Education (all levels)	6	4.0
Fine Arts (all levels)	10	6.6
Electives <sup>a</sup> (all levels)	15	9.9
Other assignments <sup>b</sup>	14	9.6
No response	6	4.0

<sup>a</sup>Electives include subjects such as computers, business, and vocational education

<sup>b</sup>Other assignments include cross-curricular assignments, counselors, nurses, librarians, and unspecified subjects

Sorting respondents' teaching assignments by grade level rather than subject matter area still showed that elementary teachers comprised the largest group with 31.1%

of respondents. High school teachers were the next largest group with 28.5% of respondents, followed by middle school teachers with 21.2% of respondents (See Table 7).

Table 7

*Grade Level Teaching Assignment*

Grade Level Assignment	Number of respondents ( <i>n</i> = 151)	% of respondents ( <i>n</i> = 151)
Pre-K or Kindergarten	10	6.6
Elementary grades 1-5	47	31.1
Middle School grades 6-8	32	21.2
High School grades 9-12	43	28.5
Multi-grade (K-12 or 6-12)	4	2.6
Unspecified grade level	9	6.0
No response	6	4.0

Sorting teaching assignments by grade level included special education teachers, fine arts teachers, physical education teachers, and elective teachers in their appropriate grade level group. However, a few of these teachers had broad grade level assignments and had to be listed in the multi-grade category (2.6%). One music teacher was assigned to all three buildings in the district. Ten percent of respondents either did not specify a grade level or did not complete this item (See Table 7).

In response to survey question 5 regarding years of teaching experience, the largest group of subjects by a small margin was the 11-15 year range with 23.8% of

respondents. The 1-5 year group and the 16-20 year group had the same number of subjects with 22.5% each. Overall, 85% of study subjects had 20 years of teaching experience or less. The remaining 15% had 21 or more years of experience (See Table 8).

Table 8

<i>Years of Experience</i>		
Experience (in yrs.)	Number of respondents ( <i>n</i> = 151)	% of respondents ( <i>n</i> = 151)
1-5	34	22.5
6-10	24	15.9
11-15	36	23.8
16-20	34	22.5
21-25	13	8.6
26-30	5	3.3
31-35	4	2.6
36+	1	0.7

Question 6 of the survey asked respondents to check one of four choices regarding satisfaction with their current teaching assignment (See Appendix A). All study subjects completed this item (*n* = 151), and 13.9% indicated that they were very unsatisfied, 1.3% were unsatisfied, 35.8% were satisfied, and 49% were very satisfied with their teaching assignment (See Appendix C). Nearly 85% of study participants indicated that they were either satisfied or very satisfied with their current assignment.

For survey question 7, respondents indicated points of Internet access for professional purposes by checking *yes* or *no* to four possible choices (See Appendix A). The last choice on this item was free response so subjects could indicate any points of access not listed. Nearly all survey respondents (98%) indicated that they accessed the Internet in their school classroom or office, 74.8% used some other location at school such as a computer lab or media center, and 83.4% accessed the Internet at home for professional purposes. Nine respondents (6%) supplied alternate locations on the free response portion of question 7. They indicated access points such as motels, the local public library, the local junior college lab, the closest university, mobile devices, and a spouse's business computer (See Appendix C).

#### *Relationships among Variables*

The Likert-style choices in survey questions 8 and 9 measuring frequency of use of various forms of online communities are considered discrete choices rather than continuous since time values assigned to each numerical choice are not equidistant in relation to elapsed time. As a result, chi square cross-tabulation is the most suitable statistical method for evaluating comparisons of frequencies between groups of discrete data (Isaac & Michael, 1997).

One difficulty in performing chi square cross-tabulation on this particular data set arose as a result of the restriction that each theoretical cell frequency should be five or greater (Isaac & Michael, 1997). The frequencies of answers for items 8 and 9 of the survey were not evenly distributed since most respondents in most groups chose similar answers. This uneven distribution of data resulted in numerous cells containing frequencies less than five (See Appendix C). To compensate for the uneven distribution

of data and to increase cell frequencies to desired levels, some data groups were combined. However, this technique reduced the degrees of freedom and did not always completely achieve desired theoretical frequencies for some categories of data.

All inferences regarding statistically significant relationships between different sets of data were determined using chi square cross-tabulation facilitated by SPSS software. The level of statistical significance was  $\alpha = .05$  throughout. Any differences in  $n$  values among variables discussed in the following paragraphs are a result of respondents' failure or refusal to complete some items of the survey. All statistical tests were based on the null hypothesis that there was no relationship between any particular demographic characteristic and online community use.

### *Age*

Assuming the null hypothesis that age and online community use were independent variables, chi square cross-tabulation statistical tests were performed between age and the individual items in survey questions 8 and 9. The two age groups of 50-59 and 60+ were combined for this statistical procedure due to lower than expected values in the over 60 group. Two significant relationships emerged between age and online community use.

Using  $\alpha = .05$  as the level of statistical significance, 3 degrees of freedom, and  $n = 150$ , the relationship between age and instant messaging or chat for personal reasons was statistically significant ( $p = .014$ ). For this cross-tabulation table, two columns were used for frequency of use—never and rarely or more—to compensate for unequal distribution of data. Of those respondents aged 20-29, 44.4% indicated that they never used instant messaging or chat, while 55.6% indicated that they used this online technology at least

rarely. The percentage of those in the other age groups reporting that they never used instant messaging was significantly higher. About 72% of the 30-39 age group, 81.1% of the 40-49 age group, and 72.7% of the 50 and older age group reported that they never used instant messaging or chat.

The relationship between age and use of social networks for personal purposes was also statistically significant ( $p = .000$ ). This finding was based on a confidence level of  $\alpha = .05$ , 6 degrees of freedom, and  $n = 150$ . For this statistical test, the categories of rarely and monthly were combined, and the categories of weekly, daily, and multiple times per day were combined to compensate for unequal distribution of data.

The responses of the youngest subjects contributed most to this relationship. Of those in the 20-29 age group, 66.7% reported using social networks for personal purposes at least weekly, while only 14.8% of that same group reported that they never used social networks for personal reasons. In contrast, 54.7% of the 30-39 group and 51.4% of the 40-49 group reported that they never used social networks for personal reasons, and 75.8% of those 50 and older reported that they never used social networks for personal reasons. Only 9.1% of those 50 and older used social networks for personal reasons weekly or more.

### *Gender*

Two statistically significant relationships emerged between gender and online community use. Assuming the null hypothesis that gender and online community use were independent variables, chi square cross-tabulation statistical tests were performed between gender and the individual items in survey questions 8 and 9.



Using  $\alpha = .05$  as the level of significance, 2 degrees of freedom, and  $n = 148$ , the relationship between gender and email use for professional purposes was statistically significant ( $p = .008$ ). For this cross tabulation table, the categories of never, rarely, monthly, and weekly were combined to compensate for the uneven distribution of data. Of the 115 female subjects that responded to this survey item, 68.7% used email for professional purposes multiple times per day, 23.5% used it daily, and 7.8% used it weekly or less. On the other hand, only 48.5% of the 33 male respondents used email for professional purposes multiple times per day, 24.2% used it daily, and 27.3% used it weekly or less.

The second significant relationship occurred between gender and professional community use ( $p = .021$ ). This finding was based on  $\alpha = .05$  as the level of statistical significance, 2 degrees of freedom, and  $n = 150$ . For this chi square test, the categories of monthly, weekly, daily, and multiple times per day were combined to compensate for the uneven distribution of data. Of the 116 females that responded to this item, 25.9% never used professional communities, 26.7% rarely used them, and 47.4% used them at least monthly. The 34 male survey respondents reported much lower usage. For males, 50% never used professional communities, 23.5% rarely used them, and 26.5% used them at least monthly.

### *Teaching Assignment*

One statistically significant relationship emerged between teaching assignment sorted by subject matter area (See Appendix C) and online community use. Using the null hypothesis that respondents' teaching assignments and online community use were independent variables, chi square cross-tabulation tests were performed using  $\alpha = .05$  as

the level of statistical significance, 11 degrees of freedom, and  $n = 148$ . The relationship between subject matter assignment and email use for professional reasons was statistically significant ( $p = .008$ ).

The group that contributed most to this relationship was elementary cross-categorical teachers assigned to grades 1-5. Nearly all subjects in this group (94.1%) reported using email for professional reasons multiple times per day. Two other groups contributed largely to this statistically significant relationship in the opposite direction. Only 30% of math teachers and 33.3% of physical education teachers reported that they used email for professional reasons multiple times per day.

The same test was run to discover any relationships between online community use and teaching assignment sorted by grade level assignment (See Appendix C) rather than subject matter area. No statistically significant relationships were determined.

#### *Level of Education*

Chi square cross-tabulation revealed no statistically significant relationships between online community use and study subjects' highest level of education attained.

#### *Years of Experience*

Four statistically significant relationships emerged between years of teaching experience and online community use. Based on the null hypothesis that years of teaching experience and online community use were independent variables, chi square cross-categorical analyses were conducted using  $\alpha = .05$  as the level of significance. Years of teaching experience were statistically related to podcasting for professional

reasons, podcasting for personal reasons, use of social networks for professional reasons, and use of social networks for personal reasons.

For the chi square statistical tests between years of experience and online community use, the groups for years of experience were reduced from eight to four by combining the top five groups. This resulted in the following groups: 1-5 years, 6-10 years, 11-15 years, and 16+ years. This was done to achieve desired theoretical cell frequencies in the cross-tabulation tables.

For chi square tests between years of experience and podcasting for both professional and personal reasons, frequency of use was combined to form two categories: never and rarely or more. Again, this was done to achieve desired theoretical cell frequencies in those categories. Using  $\alpha = .05$  as the level of significance with 3 degrees of freedom and  $n = 150$ , the relationship between years of teaching experience and use of podcasting for professional reasons was statistically significant ( $p = .032$ ).

Respondents in the 6-10 years of experience group contributed most to this relationship. Of those teachers with 6-10 years of experience, 58.3% reported that they never used podcasting for professional reasons, while 41.7% of this same group reported that they used podcasting for professional reasons at least rarely. The other three groups reported much higher percentages of non-use. About 84% of teachers with 16 or more years or experience and 86% of those with 11-15 years of experience reported that they never used podcasting for professional reasons, while 70.6% of those with 1-5 years of experience reported that they never used podcasting for professional reasons.

Using the same parameters as those described for podcasting for professional reasons, the relationship between years of teaching experience and use of podcasting for

personal reasons was also statistically significant ( $p = .046$ ). Those respondents in the 11-15 year group contributed most to this relationship with only 19.4% reporting that they used podcasting for personal reasons at least rarely. The other three groups reported higher usage. Fifty percent of the 6-10 year group, 44.1% of the 1-5 year group, and 30.4% of the 16+ group reported using podcasting for personal reasons at least rarely.

The third statistically significant relationship between years of experience and online community use was in relation to social networks used for professional reasons ( $p = .002$ ). This finding was based on  $\alpha = .05$  with 3 degrees of freedom and  $n = 150$ . The categories for this cross tabulation table were combined in the same way as those described for podcasting. The group with 6-10 years of experience contributed most to this significant relationship. Of that group, 50% of respondents reported that they never used social networks for professional reasons, while the other 50% used social networks for professional reasons at least rarely. Much larger percentages of the other groups reported that they never used social networks for professional reasons. About 79% of those with 1-5 years of experience, 86.1% of those with 11-15 years, and 85.7% of those with 16 or more years reported that they never used social networks for professional reasons.

Use of social networks for personal reasons was also statistically related to respondents' years of teaching experience ( $p = .000$ ). This finding was based on  $\alpha = .05$  with 6 degrees of freedom and  $n = 150$ . For this cross tabulation table, frequency categories were combined to form three groups: never, rarely or monthly, and at least weekly. The same four groups were used for years of experience as above: 1-5, 6-10, 11-15, and 16 or more.

Only 23.5% of those respondents with 1-5 years of experience reported that they never used social networks for personal reasons, while 52.9% of that same group used them at least weekly. Those with 6-10 years of experience were the next heaviest users with 45.8% reporting that they used social networks for personal reasons at least weekly. The other two groups were much lighter users with only 13.9% of the 11-15 year group and 19.6% of the 16 and over group reporting that they used social networks for personal reasons at least weekly. Three-fourths of the 11-15 year group and 58.9% of the 16 and over group reported that they never used social networks for personal reasons.

### *Job Satisfaction*

Only one statistically significant relationship was determined between reported level of job satisfaction and use of online communities for personal or professional reasons. Using  $\alpha = .05$  with 4 degrees of freedom and  $n = 150$ , chi square cross-tabulation results showed that job satisfaction was related to reported use of social networks for professional reasons ( $p = .008$ ).

The group that contributed most to this relationship was those respondents that reported that they were either very unsatisfied or unsatisfied with their current teaching assignments. Of those respondents in that group, 22.7% reported that they used social networks for professional reasons at least monthly. A little more than half (54.5%) of this same group reported that they never used social networks for professional reasons.

On the other hand, almost 89% of those that considered themselves satisfied with their current assignment and 78.4% of those that were very satisfied with their assignments reported that they never used social networks for professional reasons. Only

3.7% of the satisfied group and 5.4% of the very satisfied group used social networks for professional reasons at least monthly.

### *Points of Internet Access*

No statistically significant relationships were determined between online community use and study subjects' points of Internet access for professional purposes.

### Research Question 3 and Discussion

For what purposes do rural teachers use online communities?

For question 10 on the survey, respondents were asked to check a *yes* or *no* box next to a variety of possible reasons for using online communities for professional reasons. Respondents were also given a blank to add any other uses of online communities for professional reasons (See Appendix A). Table 9 lists percentages of respondents that selected the *yes* option for each of the listed possibilities.

The most popular use of online communities for professional reasons was finding curriculum materials (88.1%). This choice was followed in popularity by keeping current in the profession (79.5%) and sharing materials and ideas (66.9%). Participating in professional development (59.6%) and connecting with other education professional (58.3%) were next in popularity (See Table 9).

The least popular choices were seeking emotional support (11.9%), connecting with students (13.9%), and mentoring relationships (18.5%). Three respondents (2.0%) filled in other uses. One listed connecting with students' parents, another listed keeping up with changes in school policy and state law, and another listed enhancing writing instruction with the ePals website (See Table 9).

Table 9

*Professional Reasons for Using Online Communities*

Reason	% of <i>yes</i> responses ( <i>n</i> = 151)
Finding curriculum materials	88.1
Keeping current in profession	79.5
Seeking information to enhance professional practice	72.2
Sharing materials and ideas	66.9
Participating in professional development	59.6
Connecting with other education professionals	58.3
Mentoring or being mentored	18.5
Connecting with students	13.9
Seeking emotional support	11.9
Other <sup>a</sup>	2.0

<sup>a</sup>connecting with parents; keeping up with changes in school policy and state law; and enhancing writing instruction with ePals site

Interview subjects elaborated further on reasons for their online community usage and what needs that use fulfilled. Interview responses in this area pertained to finding curriculum support materials online, communicating with friends and colleagues, and entertainment. Six of the 12 interview subjects reported that they used various online communities to search for curriculum support materials. They mentioned specific needs such as finding new ideas for reading groups, finding videos for classes they taught, and

finding online sites that their students would be interested in. One said, “You can find exactly what you need on the Internet.”

Half the 12 interview subjects said that they used online communities to communicate with others. The online community mentioned most often for this purpose was Facebook. They described the experience as helping them keep in touch with friends, various named family members, and present and former colleagues. One candid respondent said that using Facebook fed her nosiness. One subject said that she used email to communicate with her students’ parents.

Two respondents stated that in the recent past they had completed university coursework via the Internet. One teacher completed alternative certification requirements through online communities, and another had completed a master’s degree online. The second teacher related the experience of not meeting the classmates in his cohort until the graduation ceremony.

Three interview subjects mentioned unique personal reasons for participating in different online communities. One teacher said that using her personal blog was like a journal and helped her get thoughts out of her head. Another teacher said that she had recently started using eBay just for fun and that she mostly used it at home during the summer. A Facebook user said that she participated in the Farm Town game just for fun and enjoyed watching her virtual farm grow. A very frequent online user said that he enjoyed online technology, and it just made things more exciting for him.

#### Research Question 4 and Discussion

What types of online communities do rural teachers use to meet their personal and professional needs?



According to survey results on questions 8 and 9 (See Appendix C), the most commonly used form of online communication technology for either professional or personal reasons is email. The majority of respondents (62.9%) reported that they used email multiple times per day for professional reasons, and 37.7% of respondents reported using email multiple times per day for personal reasons. No other online communication technology was used nearly this often.

Professional community use was next in popularity with 68.7% of respondents using them at least rarely. Of those that responded to this item, 31.3% indicated that they never used professional communities, while 26% rarely used them, and 20.7% used them at least monthly. The other 22% of respondents indicated that they used online professional communities at least weekly.

The next most popular online communication technology was social networking for personal use. While 21.3% of respondents reported that they used social networks for professional reasons, nearly half (48.7%) of respondents reported that they used social networks for personal reasons.

File sharing for both professional and personal reasons was indicated next most often. Of survey respondents, 42.4% reported using file sharing for professional reasons, and 46.3% reported using file sharing for personal reasons.

Podcasting was used more for personal reasons than professional. Of survey respondents, 34% reported using podcasting for personal reasons, while 22.7% used it for professional reasons. One interview subject stated that he used podcasting in a professional capacity to download music examples for his music theory class. However,

he usually did this at home so he could own the files himself, and the school's blocking software often frustrated his efforts at work.

While some survey respondents indicated that they used the other online communities and communication technologies listed on the survey, 70% to 80% stated that they never used instant messaging for either professional or personal reasons, blogging for either professional or personal reasons, podcasting for professional reasons, social networking for professional reasons, or distance education technologies. The other 20% to 30% of respondents used these same technologies at least rarely.

One survey respondent wrote in ePals as an online community that she used in a professional capacity with her students. She used this site as a way to help her students enhance their writing skills. A complete listing of respondents' frequency of use of the various online communication technologies can be found in Appendix C, and more detailed explanations were included in the section discussing research question 1.

The 12 interview subjects expanded on the survey items by listing specific online communities that they used for both personal and professional reasons. In agreement with survey responses, they mentioned email most often with 8 of 12 subjects specifically saying that they used email for both personal and professional purposes. One respondent mentioned Yahoo mail by name. Social networks were mentioned next most often with half of interview subjects saying that they often used Facebook, and two of those also stated that they used MySpace occasionally.

While all interview subjects said that they used the Internet to search for information, only half specifically mentioned Google as their search engine of choice. Three teachers said that they used YouTube to download videos for classroom

instruction, and two teachers used United Streaming to download videos for curricular purposes. Two teachers mentioned using iTunes for downloading music for both instructional and personal purposes. Two teachers used the QUIA online community for creating and sharing instructional games and review activities.

One teacher mentioned that she used a personal blog and wiki spaces, another confessed an eBay addiction, and still another said that she often used the chat room feature of MySpace. Two teachers had used a distance education site to complete university coursework, and one said that she used Twitter.

All the other sites mentioned by the 12 interview subjects were specific sites that they used for communicating with parents, finding curriculum support materials, or purchasing instructional materials. Some of the sites mentioned—Reading A to Z, Edline, United Streaming, AIMSweb, Enchanted Learning, and Smart Music--were subscriber-only sites with fees paid by the school. Other online communities used by individual interview subjects were scholastic.com, ReadingLady.com, pbs.org, webs.com, teachers.net, teachnet.com, NCTM.org, edHelper.com, and musictheory.net. Some mentioned general online uses such as middle school language arts sites, art teaching sites, music distributors that sell downloadable PDF files, Yahoo groups for teachers, and media streaming sites.

#### Research Question 5 and Discussion

What are some perceived hindrances or enablers to online community usage by rural teachers?

Survey question 11 asked respondents to select possible hindrances to using online communities for professional reasons. Respondents were also provided with a blank to indicate any other possible hindrances (See Appendix A). Table 10 lists the percentage of respondents that chose each of the listed reasons.

Table 10

*Hindrances to Using Online Communities*

Reason	% of respondents ( <i>n</i> = 151)
Lack of time	80.1
Professional needs fulfilled other ways	50.3
Unavailable or unreliable Internet connection	47.7
Unaware of online professional communities	44.4
Concerns about protecting privacy online	43.7
Unavailable or unreliable computer	35.1
Inexperience or discomfort with computer technology	34.4
Membership fees prohibitive	34.4
Tech support not available in timely manner	26.5
Existing online communities do not fill my needs	12.6
Other <sup>a</sup>	2.0

<sup>a</sup>other teachers not comfortable with technology; school filter blocks many communities

Lack of time was chosen most often as a hindrance to using online communities for professional purposes. One respondent placed four checkmarks in the *yes* box for this option. About half of respondents indicated that they fulfilled their professional needs

other ways. A little less than half of respondents were concerned about protecting their privacy online, indicated lack of awareness of online professional communities, or felt hindered by unavailable or unreliable Internet connections. About one-third of respondents found inexperience or discomfort with computer technology, prohibitive membership fees, or unavailable or unreliable computers to be hindrances to their professional use of online communities (See Table 10).

Only 12.6% of respondents felt that existing online communities did not fill their needs, while 26.5% indicated that tech support was not available in a timely manner (See Table 10). One survey respondent added that the unfamiliarity of other teachers with existing technology was a hindrance, and two survey respondents wrote in school filtering software as a problem.

The 12 purposefully selected interview subjects elaborated on perceived enablers or hindrances to online community usage. In agreement with survey results, interview subjects mentioned lack of time most often as a hindrance to their online community use. Three-fourths of the interview subjects mentioned time constraints as hindering their usage of online communities and technology in general. One teacher said that time was definitely a factor and that using online communities took too much time to learn. Still another said that more time would be nice and that she would use the time to play around and learn on her own. Two subjects expressed concern about taking time away from their families to spend time online.

Another frustration mentioned by half of the interview subjects was the restrictive blocking software implemented by their district. One teacher was frustrated by the blocked videos and some blocked communication sites such as chat rooms, another

wondered why certain sites were blocked when they were nothing bad, and still another would like to have used blocked bulletin board sites for teaching and learning purposes. One teacher related a specific situation in which he was pressed for time, but had to use an inefficient dial-up connection at a relative's home to find biographical information to include in a concert program since the composer's entire site was blocked by the school as pornography. He said that he now does most of his research about composers at home. These same teachers were aware that they could petition the district technology director for access to blocked sites, but that it took too long and was not worth the effort.

Individual interview subjects mentioned a variety of other reasons for not using online communities more. One said that she just didn't really feel the need and said that she would rather just call people that she knows on the phone when she wanted to communicate. She felt comfortable enough with technology, but just didn't want to waste the time. After being shown how to use Facebook by a relative, she called it crazy and nuts, and said that she didn't want to mess with it. Regarding technology in general, she said, "I really don't need it."

Another mentioned the frustration of not having his own classroom and said, "This really does slow me down." He called his particular department office his world and said that he spends quite a bit of his prep time going to the next room and getting set up. Still another mentioned her personal need for one-on-one training when learning new technologies. She said that she was not that excited by new technology and would probably only use what school administration required.

A physical education teacher mentioned the inconvenience of having no computer in the gym. Two teachers said that scheduling computer labs at school was frustrating

due to tight scheduling, so they did not use them with their students as much as they wanted to. Two teachers said that they must go to the computer lab first and make sure everything is working before they get in there with kids, and that takes so much time it's often easier to skip the experience. One of these teachers mentioned the busyness of the technology teacher and said that they didn't want to bother this person more than she had to. One teacher with teenage children said that she couldn't do much on the family computer at home either personally or professionally because her kids monopolized it.

Half of the interview subjects mentioned the need for more training and felt that this would help them use online communities more. However, the art teacher said that most school-sponsored training didn't apply to her subject matter needs and was largely a waste of time. Another teacher said that she had once been required to attend training for a particular technology that wasn't available to her.

Three interview subjects said that they didn't want any more training. One savvy computer user said that most of the district's training was designed for a grandma. Another said that he didn't feel the need for more training, just give him the resource and let him go. Another said that she was rarely challenged at training workshops and most of the time ended up training others on her teaching team.

Along with training needs, half of the interview subjects said that they would appreciate having a technology mentor. One teacher said that she needs a patient person to walk her through the steps and one who would be willing to go back if she needs it. In her words, "The technology teacher goes too fast." Another said that a technology mentor would help and maybe they could work together during free time. Two teachers said that a technology mentor would probably help. One tech savvy teacher said that she

could always learn something from a mentor, and another proficient user said that she wouldn't turn down a mentor.

Four interview subjects rejected the idea of a technology mentor. One teacher said that he would rather work independently. Another said that he was not big on somebody sitting beside him, and he just wanted to explore on his own. The third teacher said that she didn't need a technology mentor, and the fourth said that he only requested technology for his department that he already knew how to use.

When asked to give suggestions for improvement to their administrators, the responses were as varied as the respondents. One technology proficient teacher wanted her school to provide wireless access in the whole building so her laptop would work other places besides her classroom. One respondent said that she would definitely appreciate the school paying membership fees for applicable online communities, and two respondents said that they were willing to pay the fees themselves if a site was something they really wanted to use but would appreciate the school paying the fees.

Five teachers wanted release time for training or exploring on their own. One teacher said that she would like some release time to use the computer more because she didn't want to be a pest to the very busy technology teacher. However, another teacher said that release time was a two-edged sword since she felt that sub time was wasted time. Those teachers that were frustrated with the blocking software mentioned loosening the controls a bit as a way to facilitate more online community usage.

Although the hindrances to online technology use mentioned by interview subjects were more numerous than the list of enablers, many did have positive comments about the availability of technology at their schools and the level of support by their



administrators. Seven of the 12 interview subjects said that their school culture was technology friendly. They used phrases such as tech friendly, welcoming district culture, and my school embraces technology. One teacher went even further by commenting that the school where she teaches was light years ahead of some places.

Several technology friendly administrators were specifically mentioned by name. Six respondents said that their administrators were very supportive. One teacher said that her principal was great, and another said that the level of technology in her school was impressive and attributed this to a high level of administrative support. One tech savvy teacher laughingly called her principal a gadget geek.

Three teachers were generally positive about their school's technology culture, but their comments were less enthusiastic than those above. One called her school's technology culture fine, another said that it was better than her previous school, and a third said that administrative support was pretty good.

Two other enablers were mentioned by respondents as encouraging their online community use. One said that he appreciated that his school paid the fees for a number of educational and professional online communities for school use, and another mentioned the high level of training that the school provided.

#### Research Question 6 and Discussion

How do rural teachers utilize online communities for mentoring support during their first years of teaching?

In response to question 11 of the survey regarding professional uses of online communities, 18.5% of the 151 respondents reported that they participated in some form of online mentoring relationship. Interview subjects were asked more in-depth questions

related to their mentoring experiences during their first few years of teaching, including online mentoring experiences.

Interview responses were stated in various ways, but most of the 12 interview subjects reported that they relied more upon informal relationships that evolved as a result of proximity of a caring colleague rather than upon formal mentoring relationships arranged by school administrators. Most did not participate in any type of online mentoring arrangement because the Internet was not widely available when they started teaching. Of those who used online mentoring, these relationships were also informal ones with former instructors and classmates carried over from undergraduate days.

When asked about formal mentoring arrangements to provide for their needs as newly assigned teachers, 7 of 12 interview subjects stated that they had no mentor assigned to them when they started new teaching assignments. Instead, they developed informal relationships with colleagues to fill their needs as new teachers. Even some of those who were assigned formal mentors reported that they relied more on informal mentoring relationships. In all, 9 of 12 interview subjects reported participation in informal mentoring relationships. These were largely based on proximity ( $n = 8$ ) and common teaching assignment ( $n = 7$ ). One subject said that she continued a relationship that had existed previously as this colleague had been her teacher when she was in high school. She commented about this person, “She really took me under her wing.”

Three respondents described mentoring relationships that developed with teachers that shared a classroom with them. One said, “He had to talk to me since I used his room.” One subject reported that her informal mentors with whom she shared a room

were very effective, another called her informal mentor nice, and still another said that her informal mentor was really great.

Half the respondents said they asked others for help as they needed it, but one said that he was so inexperienced when he first started teaching that he didn't even know what to ask his mentor. He felt that she couldn't really have known how to help him since he didn't know when to ask for help. When asked if he felt comfortable going to the principal for help, he replied, "Heavens, no." Another respondent said that during her first year she only went to the principal for business questions.

Half of the interview subjects reported that they were assigned mentors by school administrators when they started new teaching assignments. For some this was a second teaching assignment. Three of these mentors were assigned based on proximity, two were based on common teaching assignment, and one was a professional mentor hired by the district. The study subject who had the professional mentor said that he only saw this person twice all year.

One person mentioned an informal online mentoring relationship that he continued with a former university professor via email. Another mentioned a formal mentoring arrangement conducted largely by email with a current university professor. She had to participate in a formal mentoring arrangement to fulfill requirements of an alternative certification program.

When asked to elaborate on their perceptions regarding the effectiveness of any mentoring program in which they participated, respondents' answers were varied. Some thought their mentoring experiences were positive. Following are a sample of positive quotes from interview subjects regarding their mentoring relationships:

“It helped out a great deal.”

“The teachers in my department were nice.”

“I could talk with her when I had questions.”

“My first supervisor supported me and did a great job.”

“I definitely loved having (named mentor) around.”

Other interview subjects supplied comments to the contrary. A sampling of negative comments regarding mentoring experiences follows:

“My mentor was a giant joke. We only met once.”

“The formal program was paper only, just busy work.”

“The group meetings were a waste of time.”

“The mentoring program was dumb, dumb, dumb.”

“My assigned mentor was set in her ways and just told me how she did things.”

Two subjects mentioned that they felt that they had been overlooked for mentoring support when they were first assigned to their current positions because they had previous teaching experience in another district. One felt that she had been overlooked for mentoring because she had worked her way into her current teaching position by starting out in the building as a teacher assistant.

Only one interview subject commented that she didn't mind the lack of effective mentoring in her early years of teaching nor did she really feel the need for it. She never went to her assigned mentor for help, but asked others for help as she needed it. She described herself as an independent person and didn't feel that she was “left hanging.”

When asked for suggestions to improve mentoring experiences, all but one interview subject said that the school should definitely provide mentoring for new teachers. Four subjects emphasized the need for matching the new teacher with a mentor in the same subject matter area. One teacher said that online mentoring would be a great way to help new teachers, and another said that she made sure that she was friendly and helpful to any new teachers in the building. One suggested that group meetings were not necessary and that one-on-one meetings would be more helpful.

### Summary

Study results were presented and discussed in this chapter. A total of 151 public school teachers completed and returned the survey used to collect quantitative data. These data were analyzed using descriptive and inferential statistical techniques. Twelve purposefully selected survey respondents participated in follow-up telephone interviews. Their responses to 10 open-ended questions were analyzed as qualitative data to support quantitative findings.

Using chi square cross-tabulation, ten statistically significant relationships between specific demographic groups and online community use emerged. Age was statistically related to instant messaging use for personal reasons and social network use for personal reasons with the 20-29 group contributing most to these relationships. Gender was statistically related to email use for professional reasons and professional community use with females emerging as the more frequent users.

Teaching assignment was statistically related to email use for professional purposes with elementary teachers the most frequent users and mathematics and physical education teachers the least frequent users. Job satisfaction was statistically related to use

of social networks for professional reasons with the more dissatisfied teachers reporting the highest usage.

Years of teaching experience was found to be statistically related to four different online community uses: podcasting for professional use, podcasting for personal use, social networking for professional use, and social networking for personal use. For the two professional use categories, the 6-10 year group reported the highest usage levels. For the two personal use categories, the 1-5 year group reported the highest usage levels.

Reasons related to finding and sharing curriculum materials and enhancing professional practice were the most frequently selected professional uses of online communities by survey respondents. Interview responses supported these findings.

By a large margin, lack of time was selected most often as a hindrance to online community use by survey respondents. Interview subjects' responses supported this finding. Other hindrances were chosen on the survey and discussed in interviews, but none were as important to respondents as the time issue.

## CHAPTER 5

### DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

#### Introduction

The purpose of this study was to analyze rural teacher usage of online communities. A written survey was used to collect demographic data about study participants and information regarding their reported patterns of online community usage. Selected survey respondents were interviewed by telephone for further elaboration about their online community usage. The quantitative data gathered from the survey and the qualitative data gathered from the interviews were analyzed for patterns of usage and relationships among variables.

Based on the findings of this study, further research could be conducted regarding the establishment of self-sustaining online communities designed to support the needs of rural teachers. Through this study, the researcher hopes to contribute to the knowledge base and literature in the emerging field of developing and sustaining online communities that support the unique needs of educators. An additional hope is that rural school administrators can use this information to help meet the needs of their teachers more effectively.

The information gathered from the survey and follow-up interviews was used to answer the following research questions:

1. How often do rural P-12 teachers use online communities for personal and professional reasons?
2. Are certain demographic characteristics associated with the use of online communities?

3. For what purposes do rural teachers use online communities?
4. What types of online communities do rural teachers use to meet their personal and professional needs?
5. What are some perceived hindrances or enablers to online community usage by rural teachers?
6. How do rural teachers utilize online communities for mentoring support during their first years of teaching?

#### Discussion of Research Question 1 Findings

How often do rural P-12 teachers use online communities for personal and professional reasons?

Of the various online communication technologies and online community choices listed on the survey, email was indicated as most frequently used for both professional and personal reasons. About 86% of survey respondents reported using email at least daily for professional reasons, and about 75% reported using email at least daily for personal reasons. Overall, 99% of respondents used email for professional reasons, and 98% used email for personal reasons at least rarely. These figures indicate that this particular group of rural public school teachers uses the Internet for at least basic online communication. This high level of email usage for professional reasons makes sense in light of the fact that most communication in the schools included in this study takes place via email as paper memos have been largely eliminated. The high level of email use for personal reasons seems to be connected. Only one of the 12 interview subjects said that she did not have Internet access at home.



No other type of online community or communication technology was close to email in frequency of use. Online professional communities were used next most frequently with about 40% of survey respondents reporting that they used such communities at least monthly. This figure was supported by the purposes of use reported in response to survey question 10 (See Appendix A). The majority of respondents reported using online communities for finding curriculum materials (88%), keeping current in their profession (79.5%), sharing materials and ideas (67%), and enhancing their professional practice (72%). These types of activities could be facilitated by accessing any one of numerous online professional communities designed to meet the particular needs of educators.

These findings also correspond with some aspects of online community usage discussed in the professional literature. The three themes of online community usage discussed in chapter 2 were mentoring relationships, teacher professional development and continuing education, and professional collaboration and self-sustaining online communities. Searching for curriculum materials and sharing materials and ideas is a form of professional collaboration. Keeping current in the profession and enhancing professional practice by accessing online communities are aspects of professional development.

The use of social networks for personal reasons was next most frequently used with about 49% of respondents reporting that they used them at least rarely. Thirty percent of respondents reported that they used social networks for personal reasons at least weekly. Only 7% reported that level of usage for professional reasons. I think that these particular research subjects do not use social networks for professional reasons very

much because they are blocked by filtering software at school. If these particular study subjects wanted to access social networks for professional reasons, they would have to do so at home.

Another impression the researcher received from some interview subjects was that they felt that using social networks was not really a professional pursuit. However, the potential for setting up groups with professional purposes on a site such as Facebook is certainly present. Such a virtual meeting place would be easy to set up and easy to access. Social groups with similar interests do this all the time. However, as discussed in chapter 2, the professional literature did not support a positive outcome for self-sustaining online communities without some type of commitment to monitor, prompt, and support the online group.

Interview subjects discussed their level of online community usage in more general terms. They described themselves by using words such as very frequent user, average user, or low user. Since the interview subjects were purposefully selected to be an even mix of different levels of users, drawing conclusions from their responses about the entire group's level of use would not be appropriate. Survey respondents who reported the lowest levels of online community use could not be interviewed for further comment since none of them provided contact information. Their omission from the interview pool is regrettable as their opinions could be enlightening to administrators who are trying to more fully engage their teachers in using technology.

Some interview subjects reported that they did not understand the survey questions that well and therefore may have under-reported their online community use on the survey. For example, one interview subject started listing several ways that she used

online communities for professional purposes when she had indicated on the survey that she only used email. However, the interview subject that reported the lowest use of the 12 selected interview subjects also indicated very low use on the survey.

### Discussion of Research Question 2 Findings

Are certain demographic characteristics associated with the use of online communities?

In this study, female subjects outnumbered male subjects by about 3.5 to 1. This was to be expected as female teachers greatly outnumber male teachers nationwide. According to the National Center for Educational Statistics, 74.5% of public school teachers were female in 1999 to 2000 (Zumwalt & Craig, 2005). In this study, 77.5% of respondents were female and 22.5% were male. All 151 subjects responded to this survey item. The lone male teacher at one of the elementary schools in this study said that he might as well supply his name for contact information because it was impossible for him to remain anonymous.

Only two statistically significant relationships emerged in regards to gender. The relationship between gender and email use for professional purposes was statistically significant with females contributing most to the relationship. One possible reason for this could be the much larger number of female elementary teachers in a building where administrators are known to send out numerous email directives daily.

The statistically significant relationship between gender and professional community use was also a result of females reporting a much higher level of usage than males. The reason for this would be an interesting follow-up study topic.

Age groups were not evenly distributed for this group of study subjects. The group aged 30-39 was the largest with about 35% of respondents. The next largest group was those aged 40-49 with 24.5% of respondents, followed by those aged 50 and older with 22.5% of respondents. The youngest group aged 20-29, with about 18% of respondents, contributed most to the two statistically significant relationships that occurred in relation to age.

The youngest subjects contributed most to the statistically significant relationships between age and use of social networks for personal reasons and between age and instant messaging for personal reasons. These findings make sense when one compares the advent of widespread online communication and the age of most of the respondents. Those aged 20-29 are mostly digital natives, and technology usage has been ubiquitous to the culture all of their lives. On the other hand, the older respondents in this study are digital immigrants that have had to learn how to utilize online communication technologies as adults, and their technology use is not as innate as their younger counterparts (Prensky, 2001).

During follow-up interviews, several subjects of all ages discussed social networks as an invaluable tool for keeping in touch with friends, family, and colleagues. One very frequent online community user said that instant messaging as a separate activity is on the way out, and she rarely used it any more. However, this form of synchronous online communication is now incorporated as a feature in many virtual communities such as Gmail and Facebook.

Years of experience was statistically related to four different variables: podcasting and social network use for professional reasons and podcasting and social

network use for personal reasons. Those teachers with the least experience (1-5 years) reported higher than expected use of podcasting and social networks for personal reasons, while those with 6-10 years of experience reported higher than expected use of podcasting and social networks for professional reasons. The relationship involving those with the least experience makes sense based on the fact that most teachers in this group are also the youngest and the most used to using online technologies as discussed previously.

Only one statistically significant relationship occurred in relation to teaching assignment. Elementary cross-categorical teachers were the most frequent users of email for professional use, and mathematics and physical education teachers were the least frequent users. Again, the positive relationship between elementary teachers and email use could be the result of the larger number of teachers in this group and the propensity of their administrators to send large numbers of emails. The negative relationship between email use and physical education teachers might be explained by their classroom settings. They are often in gymnasiums or outdoors away from easy computer access and could find checking email an inconvenience. The negative relationship between math teachers and email usage was an intriguing find, perhaps explained by those particular teachers' personal preferences.

Reported job satisfaction was statistically related to only one variable. Those who reported that they were very unsatisfied or unsatisfied with their current teaching assignment reported higher levels of social network usage for professional reasons than their more satisfied colleagues. Perhaps those teachers who consider themselves more

unsatisfied turn to social networks for professional support to help ease their feelings of dissatisfaction.

### Discussion of Research Question 3 Findings

For what purposes do rural teachers use online communities?

In response to question 10 of the survey (See Appendix A) regarding professional uses of online communities, respondents reported that they utilized such communities most often for finding curriculum materials. Nearly 89% of respondents reported that they used online communities for this purpose. Interview subjects supported this finding by naming numerous online communities that they accessed to find curriculum materials.

Another popular use of online communities chosen by survey respondents was sharing materials and ideas. Almost 67% of respondents selected this choice on question 10 of the survey. This choice corresponds with the theme of professional collaboration found in the professional literature.

One of the major themes in the professional literature was the use of online communities for teacher professional development and continuing education. This theme was supported by survey respondents. About 72% reported that they used online communities for seeking information to enhance professional practice, and 79.5% reported using online communities for keeping current in the profession. Almost 60% reported using online communities specifically for professional development. Additionally, two interview respondents described how they had completed university coursework online. One completed alternative certification requirements and the other completed a master's degree online.

The use of online communities can also be a form of professional collaboration as discussed in the professional literature cited in chapter 2. However, fewer respondents chose responses related to professional collaboration than the purposes previously discussed. In response to question 10 of the survey, about 67% of respondents reported using online communities for sharing materials and ideas. About 58% of respondents said that they used online communities to connect with other education professionals, while only 14% reported using online communities to connect with their students.

Mentoring was widely discussed in the professional literature, but this study's findings did not support widespread use of online communities to facilitate mentoring for this particular group of teachers. Only 19% of respondents reported using online communities for mentoring purposes. The 12 interview subjects supported this finding with only two of them describing any type of online mentoring relationship. Most interview subjects started teaching before Internet connectivity was widely available in their school districts and did not have the opportunity to use online communities for mentoring support.

The discrepancy between the online mentoring described in the professional literature and the findings of this study in that same area illustrate the difference between university practice and public school practice in the area of online community use. The online mentoring communities described in chapter 2 were mostly initiated by college professors for supporting education students as they began work in their own classrooms. No such efforts have been undertaken in the public schools involved in this study. In these schools, mentoring is implemented in a real world environment rather than a virtual one.

## Discussion of Research Question 4 Findings

What types of online communities do rural teachers use to meet their personal and professional needs?

Survey results showed that study subjects used a variety of online communities with email use the most popular for either professional or personal reasons. Responses to questions 8 and 9 of the survey regarding frequency of use for a variety of online communities and communication technologies showed that all were utilized by some respondents at least rarely. No choice was completely ignored by all respondents. The choices included use of email, instant messaging, blogging, file sharing, podcasting, social networking, professional communities, and distance education for professional reasons; and email, instant messaging, blogging, file sharing, podcasting, and social networking for personal reasons. After email, the next most popular choices in terms of frequency of use were online professional communities and social network communities used for personal reasons.

Interview subjects were more specific in naming particular online communities that they used for either professional or personal reasons. Very few interview subjects mentioned the same online community websites for professional use, as each seemed to have his or her favorites based on their teaching assignment. Elementary teachers named sites like ReadingLady.com and Reading A to Z. The music teacher listed music sites, the art teacher listed art sites, the language arts teacher mentioned reading and writing sites, and the special education teacher described sites to support special education efforts.



The online community mentioned most often by interview subjects was Facebook. Its use was largely referred to in terms of personal use. This form of relational collaboration for personal reasons was not really discussed in the professional literature in chapter 2. According to the interview respondents, using Facebook filled their need to stay connected to others, especially those people who were geographically distant. The respondents liked keeping in touch with people, getting re-acquainted with old friends, and staying close with friends and relatives. Two of the themes mentioned in the professional literature—mentoring and professional collaboration—could be facilitated by an online community such as Facebook. It's free and user-friendly and could easily be utilized to set up professional relationships the same way it's now mostly used for informal personal relationships. Further study in this area could yield some interesting results.

Interview subjects also described their use of eBay, personal blogs, and Twitter for personal reasons. The big eBay user emphasized her use of this site as personal and something she did only at home to look for antiques and other items of personal interest. The lone blogger said that she used her blog to fulfill her need to journal about her feelings. The Twitter user just liked online use in any form and felt slightly alone in her zeal of all things technological.

#### Discussion of Research Question 5 Findings

What are some perceived hindrances or enablers to online community usage by rural teachers?

Survey respondents and interview subjects agreed that lack of time was the largest hindrance to using online communities more than their current levels of usage. Eighty

percent of survey respondents chose lack of time as a hindrance, while only 50% chose the next most popular choice of filling professional needs other ways. Nine of the 12 interview subjects also said that lack of time was a problem in utilizing online communities more. Lack of time as a hindrance was supported by the literature discussed in Chapter 2 of this study (Dias, 1999; Earle, 2002; Mumtaz, 2000).

When I was discussing the time issue with interview subjects, many started describing how full their days were. The pre-k teacher said that she barely had time to check her email because her students required constant attention because of their age and unique needs. Two teachers who also coached extra-curricular activities and had young children described the fullness of their lives. Both of these said that they didn't want to take any more time away from their children to spend time online. Another teacher described her prep period as short periods of time split between other classes and said that it was hard enough for her to get everything done without adding online activities to her plate.

On the survey, the next most popular choice selected by 50% of respondents was that they met their professional needs other ways. Some interview subjects supported this finding. Three said that they had existing curriculum already designed to implement state standards and didn't feel the need to spend time searching for new ways to do things. They were on teaching teams that were satisfied with their current practices and the material available online did not tempt them.

Thirty-five percent of survey respondents reported that they were frustrated in their online use by unavailable or unreliable computers, and 47.7% were inhibited by unavailable or unreliable Internet connections. Further clarification about the location of

the computer or connection problems would be helpful since the question did not specify point of access—home or school—that caused their frustrations. All the teachers in this study had high-speed Internet connectivity available in their school buildings. The lone interview subject that did not have an Internet connection at home said that she didn't feel the need for it. Another interview subject was frustrated with a home connection because a spouse insisted on keeping a dial-up connection to maintain a particular email address for business purposes.

About one-third (34.4%) of survey respondents reported that inexperience with technology was a problem for them in their online community use. The same number said that membership fees were prohibitive. These findings were not supported by interview responses. The 12 interview subjects all described training efforts provided by their schools and fee-based sites that their schools willingly paid for. However, some of the interview subjects complained about the ineffectiveness of the training. Their complaints varied based on their level of competence in the area of online community and technology use. The more proficient teachers were bored by the training; the less proficient were overwhelmed by the pace of it. Some even said that they didn't want any more training, just time to figure it out on their own. The message for administrators is a difficult one to implement. They must provide more individualized training for teachers if they want them to utilize online technologies more.

About one-fourth of survey respondents chose lack of timely tech support as a hindrance to their online use. Again, more information here would be helpful as the question does not specify where the tech support was needed—at home or at school. The only comments interview subjects made regarding tech support issues were in reference

to the incredible busyness of their technology teachers and support personnel. One teacher in particular was concerned about being a pest and bothering that particular technology teacher too much. Lack of timely tech support, teacher inexperience with technology, and inadequate training as hindrances were all supported by the literature discussed in Chapter 2 of this study.

Another hindrance selected by 44.4% of survey respondents was that they were unaware of professional communities. This would be an interesting follow-up topic to see what it would take to increase awareness for these teachers. Perhaps the time issue is the big factor here, too. A similar number (43.7%) limited their online use because of privacy concerns. This is a tricky issue because teachers are well aware that their online use is monitored by their school district and that any online activity is also traceable by unscrupulous people. Only 12.6% of survey respondents reported that existing online communities didn't fill their needs.

Two survey respondents filled in blocking software as a hindrance to their online community use. Half the interview subjects said that the restrictive filtering software was a hindrance to their online usage. The teachers that expressed the greatest frustration with the blocking software worked in the same district. They wanted to be able to search for information about composers and authors without their entire sites being blocked as pornography. Another teacher wanted to use some online communities that would allow students to communicate with students at other schools or countries, but the sites were blocked as chat rooms. These teachers did know how to request a variance in the policy, but they expressed annoyance at being penalized because of a few past abuses and found the process time-consuming and inconvenient. One interview subject suggested allowing

teachers a password to bypass the software since the district already kept track of which sites they accessed.

The survey did not ask respondents about facilitators to online community use, but this topic was discussed with interview subjects. Seven of the 12 interview subjects felt that their schools had a technology friendly culture. These subjects mentioned some of their administrators by name and described them as supportive and encouraging in the area of online community use and technology in general. Interview respondents also mentioned technology training and online membership fees provided by their schools as facilitators to their online community use.

#### Discussion of Research Question 6 Findings

How do rural teachers utilize online communities for mentoring support during their first years of teaching?

The topic of online mentoring was widely discussed in the professional literature examined in chapter 2 of this study. In those studies, college professors and graduate students set up various online forums to support education students or new graduates as they ventured into classroom teaching experiences for the first time. However, the findings of this study did not support widespread use of online communities for mentoring purposes. Only 18.5% of survey respondents reported using online communities for mentoring purposes. The nature of those mentoring relationships was not examined in the survey and could be an interesting topic for further study.

Interview subjects were asked to elaborate further about their mentoring experiences as new teachers, and their responses supported the findings of the survey. Two of them (16.7%) described online mentoring relationships that they used for support

when they started their current teaching assignments. One described an informal online relationship that he continued with a former college professor, and the other described a formal online relationship required by the university she was attending as she completed alternative certification requirements. All the other interview subjects had been teaching so long that such online support was unheard of when they began their careers.

### Recommendations

The purpose of this study was to examine rural teacher usage of online communities. Since the participants of the study were from a small geographic region, the results are not necessarily generalizable to the larger population of rural teachers nationwide. However, some behavioral patterns and opinions were revealed that could be used to better inform the decisions of rural school administrators.

One current school reform movement is the use of differentiated instruction techniques to meet the unique needs of students within classroom settings (Ryan & Cooper, 2007). The researcher would suggest to administrators that differentiated instruction for teachers is also appropriate. During the telephone interviews, the common theme that emerged in interview subjects' answers was that they wanted to be treated as individuals with individual needs. Each teacher was unique in experience, pedagogical approach, and technological skill level. Their online community use for whatever reason suited purposes unique to each of them.

The one-size-fits-all training sessions that respondents described were mostly welcomed but also frustrating. The less proficient were overwhelmed and the more proficient were bored. They wanted training to be more specific for their skill level and teaching assignment. This is a difficult issue for rural school administrators since some

departments or grade levels only have one or two teachers and training them individually is cost-prohibitive. After listening to their stories over the telephone, the researcher's impression was that most of the interview subjects just wanted someone to understand the difficulties of their unique assignments and offer them appropriate support.

One way for rural administrators to help meet the unique needs of their teachers would be to offer training session choices during in-service days devoted to technology use. Training sessions could be offered focusing some particular hardware, software, or online community where teachers could interact with the technology, the trainer, and each other based on their pedagogical and learning needs. Another option would be to offer training sessions on the same technological application, but allow teachers to choose sessions based on their level of proficiency. Less proficient users could learn new technologies in a supportive environment, and more proficient users could be introduced to different applications of a technology with which they are familiar. More proficient users who are willing could also help train and mentor their less proficient colleagues.

Based on existing literature and the findings of this study, the researcher hopes to one day be instrumental in developing a functioning online community designed to meet the needs of rural teachers. To further inform this endeavor, the 12 interview subjects were asked to describe their ideal online community. Only one person had no ideas whatsoever and had no interest in such a community. The other eleven had numerous suggestions.

They want a site that is easy to navigate and has abundant curriculum resources. One teacher thought an online tutorial on how to navigate the site would be helpful. Each teacher wanted curricular resources in his or her subject matter or grade level area. One

teacher said that he wanted practical things available that he could readily implement in his classroom. Another teacher agreed and said that available lessons should be ready to use. Two teachers desired peer-reviewed materials so they could save time by knowing ahead of time what worked and what didn't. Two teachers wanted the site to have numerous links to online resources. One teacher called her ideal online community a big thing of ideas.

Several interview subjects wanted to be able to communicate online with other teachers in their same assignment area. Two teachers described their ideal community as something like Facebook for teachers. Three teachers wanted a chat feature on their ideal site. They wanted to communicate with others to find out how they implemented certain topics in their classrooms or just to seek advice in general. Another teacher described a forum where teachers could compare notes about everyday things such as organizing a classroom or scheduling curriculum and activities. Three interview subjects specifically mentioned their desire to share their own materials and ideas with others.

The researcher would recommend to anyone interested in establishing an online community for a group with specific needs such as rural teachers that they seek information about the unique needs of their target audience and consult professional literature about what makes a successful online community. Haythornthwaite (2002) stated that online communities exhibit many of the same characteristics as traditional face-to-face communities: common goals, membership requirements, hierarchy, shared history, a common meeting place, and rituals. Survey results and suggestions made by the interview subjects in this study could be categorized accordingly and used as a starting point for an online community to support the needs of rural teachers.



Internet resources are increasing at a mind-boggling pace, and even though educational research continues to be published in this area as it relates to teachers and their needs, more needs to be done. Most of the research literature covered in this study is university based and results do not necessarily address the needs of practicing teachers, especially rural teachers geographically separated from a major university and its resources. More site-based research with practicing teachers would add much to understanding how teachers establish relationships—virtual or face-to-face—to meet their personal and professional needs.

### Summary

The purpose of this study was to analyze data related to rural teachers' use of online communities. Rural teachers are often isolated in their practice and sometimes have difficulty connecting with other teachers with their same assignments or needs due to their professional setting. As Internet availability increases and online communities proliferate, teachers have more opportunity than ever to seek personal and professional support in virtual relationships when face-to-face ones are not easily available.

In small schools such as the ones included in this study, teachers can become burned out as they perform the difficult task of teaching with few colleagues in their department or grade level to turn to for support. One interview subject said that she and the only other person with the same teaching assignment don't always have time to communicate and often have to use their lunch period to do so. Another said that she feels very isolated because there are only three of them with the same grade level assignment. The most telling comment came from one high school teacher, "I am the foreign language department."

In spite of these expressed feelings of isolation, this study's results do not support widespread use of online communities by these particular rural teachers to help fill their personal and professional needs. The only online communication technology widely used was email. At a minimum, every subject in this study had access to a high-speed Internet connection, functional technology, administrative support, and training. With this type of support already in place, further study is needed to discover what would increase awareness and use of online communities by this group of teachers. Additionally, similar studies in different rural school settings might show different results. Comparisons of study findings between rural schools in different geographic locations would be revealing. Such comparative studies could help inform administrators and online community developers who wish to better meet the needs of rural teachers.

## REFERENCES

- American Federation of Teachers. (2001). *Beginning teacher induction: The essential bridge* (Report No. AFT-13). Washington, DC: Author. (ERIC Document Reproduction Service No. ED471238)
- Brown, S. (2003). Working models: Why mentoring programs may be the key to teacher retention. *Techniques: Connecting Education and Careers*, 78(5), 18-21, 62.
- Colgan, L., Higginson, W., & Sinclair, N. (1999). Transforming professional development: An empirical study to determine the key aspects of electronic collaboration and social interaction in the elementary mathematics teaching community. *Alberta Journal of Educational Research*, 45(3), 315-319.
- Curran, K. (2002). An online collaboration environment. *Education and Information Technologies*, 7(1), 41-53.
- Dalgarno, N., & Colgan, L. (2007). Supporting novice elementary mathematics teachers' induction in professional communities and providing innovative forms of pedagogical content knowledge development through information and communication technology. *Teaching and Teacher Education: An International Journal of Research and Studies*, 23(7), 1051-1065.
- DeWert, M. H., Babinski, L. M., & Jones, B. D. (2003). Safe passages: Providing online support to beginning teachers. *Journal of Teacher Education*, 54(4), 311-320.

- Dias, L. B. (1999). Integrating technology. *Learning and Leading with Technology*, 27(3), 10-13, 21.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3<sup>rd</sup> ed.). Hoboken, NJ: John Wiley & Sons, Inc.
- Earle, R. S. (2002). The integration of instruction technology into public education: Promises and challenges. *Educational Technology*, 42(1), 5-13.
- Falvo, D. (2003). Developing professionalism in teaching through technology skill development among rural teachers. *Tech Trends*, 47(3), 21-25.
- Fink, A. (2009). *How to conduct surveys: A step-by-step guide* (4<sup>th</sup> ed.). Thousand Oaks, CA: SAGE Publications, Inc.
- Fontana, A., & Frey, J. H. (2000). The interview: From structured questions to negotiated text. In Denzin, N. K., & Lincoln, Y. S. (Eds.), *Handbook of Qualitative Research* (2<sup>nd</sup> ed.) (pp. 645-672). Thousand Oaks, CA: Sage Publications, Inc.
- Glass, G. V., & Hopkins, K. D. (1996). *Statistical methods in education and psychology* (3<sup>rd</sup> ed.). Needham Heights, MA: Allyn & Bacon.
- Hawkes, M., & Good, K. (2000). Evaluating professional development outcomes of a telecollaborative technology curriculum. *Rural Educator*, 21(3), 5-11.
- Haythornthwaite, C. (2002). Building social networks via computer networks. In Renninger, K. A., & Shumar, W. (Eds.), *Building virtual communities: Learning and change in cyberspace* (pp. 159-190). Cambridge: Cambridge University Press.

- Hough, B. W., Smithey, M. W., & Evertson, C. M. (2004). Using computer-mediated communication to create virtual communities of practice for intern teachers. *Journal of Technology and Teacher Education, 12*(3), 361-386.
- Isaac, S., & Michael, W. B. (1997). *Handbook in research and evaluation* (3<sup>rd</sup> ed.). San Diego, CA: Educational and Industrial Testing Services.
- Joftus, S., & Maddox-Dolan, B. (2002). *New teacher excellence: Retaining our best*. Washington, DC: Alliance for Excellent Education. (ERIC Document Reproduction Service No. ED473235)
- Kaplowitz, M. D., Hadlock, T. D., & Levine, R. (2004). A comparison of web and mail survey response rates. *Public Opinion Quarterly, 68*(1), 94-101.
- Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4<sup>th</sup> ed.). Orlando, FL: Harcourt College Publishers.
- Merseth, K. (1991). Supporting beginning teachers with computer networks. *Journal of Teacher Education, 42*(2), 140-147.
- Mumtaz, S. (2000). Factors affecting teachers' use of information and communications technology: A review of the literature. *Journal of Information Technology for Teacher Education, 9*(3), 319-341.
- Niesz, T. (2007). Why teacher networks (can) work. *Phi Delta Kappan, 88*(8), 605-610.
- Odell, S. J., & Huling, L. (2000). *Quality mentoring for novice teachers*. Indianapolis, IN: Kappa Delta Pi.
- Ohlund, B., Yu, C. H., Jannasch-Pennell, A., & DiGangi, S. A. (2000). Impact of asynchronous and synchronous internet-based communication on collaboration

- and performance among K-12 teachers. *Journal of Educational Computing Research*, 23(4), 405-420.
- Parr, J., & Ward, L. (2006). Building on foundations: Creating an online community. *Journal of Technology & Teacher Education*, 14(4), 775-793.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Paulus, T., & Scherff, L. (2008). Can anyone offer any words of encouragement? Online dialogue as a support mechanism for preservice teachers. *Journal of Technology and Teacher Education*, 16(1), 113-136.
- Pennington, T., Wilkinson, C., & Vance, J. (2004). Physical educators online: What is on the minds of teachers in the trenches? *The Physical Educator*, 61(1), 45-56.
- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1-6.
- Riel, M., & Fulton, K. (2001). The role of technology in supporting learning communities. *Phi Delta Kappan*, 82(7), 518-523.
- Riel, M. M., & Levin, J. A. (1990). Building electronic communities: Success and failure in computer networking. *Instructional Science*, 19(2), 145-169.
- Ryan, K. & Cooper, J. M. (2007). *Those who can, teach* (11<sup>th</sup> ed.). Boston: Houghton Mifflin Company.
- Seabrooks, J. J., Kenney, S., & Lamontagne, M. (2000). Collaboration and virtual mentoring: Building relationships between pre-service and in-service teachers. *Technology, Pedagogy, and Education*, (9)2, 219-236.
- Selwyn, N. (2000). Creating a “connected” community? Teachers’ use of an electronic discussion group. *Teacher College Record*, 102(4), 750-778.

- Shiland, T. W. (1999). Constructivism: The implications for laboratory work. *Journal of Chemical Education*, 87(1), 107-109.
- Singer, N. R., & Zeni, J. (2004). Building bridges: Creating an online conversation community for preservice teachers. *English Education*, 37(1), 30-49.
- Stephens, A. C., & Hartmann, C. E. (2004). A successful professional development projects' failure to promote online discussion about teaching mathematics with technology. *Journal of Technology and Teacher Education*, 12(1), 57-73.
- Vogt, W. P. (2005). *Dictionary of statistics & methodology: A nontechnical guide for the social sciences* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Wickstrom, C. D. (2003). A funny thing happened on the way to the forum. *Journal of Adolescent & Adult Literacy*, 46(5), 414-423.
- Zumwalt, K., & Craig, E. (2005). Teachers' characteristics: Research on the demographic profile. In Cochran-Smith, M., & Zeichner, K. M. (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 111-156). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

## APPENDICES



Appendix A  
**Survey**

---

1. What is your current age?

- 20-29     30-39     40-49     50-59     60 and over

2. What is your gender?

- male     female

3. What is the highest level of education you have attained?

- Bachelor's Degree     Master's Degree     Specialist's Degree     Doctoral Degree  
 Other \_\_\_\_\_

4. What is your current teaching assignment? (For example: 1<sup>st</sup> grade, 8<sup>th</sup> grade social studies, K-5 Physical Education, freshman algebra, etc.)

---

5. Including this year, how many years have you been teaching?

- 1-5     6-10     11-15     16-20     21-25     26-30  
 31-35     36 or more years

6. How satisfied are you with your current teaching position?

- Very unsatisfied     Unsatisfied     Satisfied     Very satisfied

7. Do you access the Internet for **professional** purposes at any of the following locations?

Yes    No

- School classroom or teacher office  
     Other location at school (i.e., computer lab, media center, school office)  
     Home  
     Location other than those listed above: \_\_\_\_\_

8. Indicate how often you use the following online communication technologies for **professional** reasons. Circle the number which best represents your usage level.

	Never	Rarely	Monthly	Weekly	Daily	Multiple times per day
Email	1	2	3	4	5	6
Virtual conference rooms (i.e., Netmeeting, Live Meeting)	1	2	3	4	5	6
Instant messaging or chat (i.e., AIM, MSN Messenger)	1	2	3	4	5	6
Blogs (i.e., Blogger, Blogspot)	1	2	3	4	5	6
File sharing (i.e., ftp, LimeWire, YouTube)	1	2	3	4	5	6
Podcasting (i.e., iTunes, Podcast Alley)	1	2	3	4	5	6
Social networks (i.e., Facebook, MySpace)	1	2	3	4	5	6
Professional communities (i.e., NCTM, NEA, Discovery Ed.)	1	2	3	4	5	6
Distance education (i.e., WebCT, Blackboard, Angel)	1	2	3	4	5	6

9. Indicate how often you use the following online communication technologies for **personal** reasons. Circle the number which best represents your usage level.

	Never	Rarely	Monthly	Weekly	Daily	Multiple times per day
Email	1	2	3	4	5	6
Virtual conference rooms (i.e., Netmeeting, Live Meeting)	1	2	3	4	5	6
Instant messaging or chat (i.e., AIM, MSN Messenger)	1	2	3	4	5	6
Blogs (i.e., Blogger, Blogspot)	1	2	3	4	5	6
File sharing (i.e., ftp, LimeWire, YouTube)	1	2	3	4	5	6
Podcasting (i.e., iTunes, Podcast Alley)	1	2	3	4	5	6
Social networks (i.e., Facebook, MySpace)	1	2	3	4	5	6

10. Do you use online communities for any of the following **professional** reasons?

- | Yes                      | No  |
|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> Finding curriculum materials                         |
| <input type="checkbox"/> | <input type="checkbox"/> Participating in professional development            |
| <input type="checkbox"/> | <input type="checkbox"/> Mentoring or being mentored                          |
| <input type="checkbox"/> | <input type="checkbox"/> Keeping current in my profession                     |
| <input type="checkbox"/> | <input type="checkbox"/> Connecting with other education professionals        |
| <input type="checkbox"/> | <input type="checkbox"/> Sharing materials and ideas                          |
| <input type="checkbox"/> | <input type="checkbox"/> Seeking emotional support                            |
| <input type="checkbox"/> | <input type="checkbox"/> Connecting with students                             |
| <input type="checkbox"/> | <input type="checkbox"/> Seeking information to enhance professional practice |
| <input type="checkbox"/> | <input type="checkbox"/> Other: _____   |

11. In your experience, which of the following have you found to be hindrances to using online communities in meeting your **professional** needs?

- | Yes                      | No   |
|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> Unavailable or unreliable computer                  |
| <input type="checkbox"/> | <input type="checkbox"/> Unavailable or unreliable Internet connection       |
| <input type="checkbox"/> | <input type="checkbox"/> Inexperience or discomfort with computer technology |
| <input type="checkbox"/> | <input type="checkbox"/> Unaware of online professional communities          |
| <input type="checkbox"/> | <input type="checkbox"/> Existing online communities do not fill my needs    |
| <input type="checkbox"/> | <input type="checkbox"/> Professional needs fulfilled other ways             |
| <input type="checkbox"/> | <input type="checkbox"/> Membership fees prohibitive                         |
| <input type="checkbox"/> | <input type="checkbox"/> Concerns about protecting privacy online            |
| <input type="checkbox"/> | <input type="checkbox"/> Lack of time  |
| <input type="checkbox"/> | <input type="checkbox"/> Tech support not available in timely manner         |
| <input type="checkbox"/> | <input type="checkbox"/> Other: _____  |

Optional: Provide your name and contact information if you are willing to be contacted for follow-up information. Your information will remain confidential, and you will qualify for a \$100 drawing.

Name: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone number: \_\_\_\_\_

Thank you for your participation.

## Appendix B

### Interview Guide

1. How comfortable is respondent in using computer technologies?
  - ✓ Computer technology in general
  - ✓ Specific online communities
  
2. What is the level of the respondent's online technology usage?
  - ✓ Types of online communities used
  - ✓ Frequency of use
  
3. What factors help determine respondent's level of usage?
  - ✓ Facilitators
  - ✓ Hindrances
  
4. What would facilitate higher level of online community use than present level?
  - ✓ Technology availability
  - ✓ Training provisions
  - ✓ Administrative support
  
5. What needs are fulfilled through online community usage?
  - ✓ Personal
  - ✓ Professional
  
6. How does the school district where respondent works contribute to level of online professional community usage?
  - ✓ Technology friendly culture
  - ✓ Administrative support level
  - ✓ Training provisions
  - ✓ Membership fees provided
  
7. If the respondent could design the ideal online professional community, what would it be like?
  - ✓ Features
  - ✓ Purposes
  - ✓ Membership requirements
  - ✓ Ease of use

8. How could the school district where respondent works facilitate more usage of online professional communities?
  - ✓ Provide release time for usage and/or training
  - ✓ Provide functioning technology
  - ✓ Provide membership fees
  - ✓ Provide mentors
  
9. Describe any mentoring relationships during first few years of teaching.
  - ✓ Face-to-face, online, or combination
  - ✓ Formal relationship set up by school
  - ✓ Informal relationship sought out by respondent
  - ✓ Use of online communication to facilitate any relationship
  
10. What is respondent's perception of the effectiveness of any mentoring program discussed in question 9?
  - ✓ Positive perceptions
  - ✓ Negative perceptions
  - ✓ Suggestions for improvement

Appendix C  
SURVEY RESULTS

1. What is your current age?

Age	Frequency	Percent
Respondents ( $n = 151$ )		
20-29	27	17.9%
30-39	53	35.1%
40-49	37	24.5%
50-59	30	19.9%
60+	4	2.6%

2. What is your gender?

Gender	Frequency	Percent
Respondents ( $n = 151$ )		
Male	34	22.5%
Female	117	77.5%

3. What is the highest level of education you have attained?

Degree	Frequency	Percent
Respondents ( $n = 151$ )		
Bachelor's	92	60.9%
Master's	58	38.4%
Specialist's	0	0%
Doctorate	0	0%
Unspecified	1	0.7%

4. What is your current teaching assignment?

*Teaching Assignment Categorized by Grade Level*

Teaching Assignment	Frequency	Percent
Respondents ( $n = 151$ )		
Pre-K & Kindergarten	10	6.6%
Elementary	47	31.1%
Middle School or Junior High	32	21.2%
High School	43	28.5%
K-12	1	0.7%
Middle School/High School	3	2.0%
Type 73 Certification	3	2.0%
Unspecified	9	6.0%
No response	6	4.0%



*Teaching Assignment Categorized by Subject Matter*

---

Teaching Assignment	Frequency	Percent
Respondents ( $n = 151$ )		
Pre-K or Kindergarten self-contained	10	6.6%
Elementary self-contained (grades 1-5)	34	22.5%
Language Arts (middle & high school)	14	9.3%
Mathematics (middle & high school)	10	6.6%
Social Studies (middle & high school)	7	4.6%
Science (middle & high school)	7	4.6%
Special Education (all levels)	18	11.9%
Physical Education (all levels)	6	4.0%
Fine Arts (all levels)	10	6.6%
Electives* (all levels)	15	9.9%
Other assignments**	14	9.6%
No response	6	4.0%

---

5. Including this year, how many years have you been teaching?

Years of Experience	Frequency	Percent
Respondents ( $n = 151$ )		
1-5	34	22.5%
6-10	24	15.9%
11-15	36	23.8%
16-20	34	22.5%
21-25	13	8.6%
26-30	5	3.3%
31-35	4	2.6%
36+	1	0.7%

6. How satisfied are you with your current teaching position?

Level of Satisfaction	Frequency	Percent
Respondents ( $n = 151$ )		
Very unsatisfied	21	13.9%
Unsatisfied	2	1.3%
Satisfied	54	35.8%
Very Satisfied	74	49.0%

7. Do you access the Internet for professional purposes at any of the following locations?

	Location	Number of Respondents		
		Yes	No	Missing Response
a.	School classroom or teacher office	149	1	2
b.	Other location at school	113	26	12
c.	Home	126	18	7
d.	Location other than those listed above <sup>a</sup>	9	39	103

<sup>a</sup>Motels, public library, colleges, Blackberry, spouse's business

8. Indicate how often you use the following online communication technologies for **professional** reasons. Circle the number which best represents your usage level.

	Number of Respondents						Invalid or missing response
	1 Never	2 Rarely	3 Monthly	4 Weekly	5 Daily	6 Multiple times per day	
Online Community <sup>a</sup>							
Email	1	5	5	7	35	95	3
Virtual conference rooms (i.e., Netmeeting, Live Meeting)	127	17	2	0	2	0	3
Instant messaging or chat (i.e., AIM, MSN Messenger)	122	19	2	3	2	2	1
Blogs (i.e., Blogger, Blogspot)	106	32	7	3	1	1	1
File sharing (i.e., ftp, LimeWire, YouTube)	87	33	12	9	3	7	0
Podcasting (i.e., iTunes, Podcast Alley)	116	22	5	5	1	1	1
Social networks (i.e., Facebook, MySpace)	118	21	1	7	1	2	1
Professional communities (i.e., NCTM, NEA, Discovery Ed.)	47	39	31	26	6	1	1
Distance education (i.e., WebCT, Blackboard, Angel)	118	17	5	9	1	0	1

Other use indicated by one respondent: ePals writing partners in Poland

9. Indicate how often you use the following online communication technologies for **personal** reasons. Circle the number which best represents your usage level.

Online Community	Number of Respondents						Invalid or missing response
	1 Never	2 Rarely	3 Monthly	4 Weekly	5 Daily	6 Multiple times per day	
Email	3	8	2	24	57	57	0
Virtual conference rooms (i.e., Netmeeting, Live Meeting)	133	13	0	1	1	0	3
Instant messaging or chat (i.e., AIM, MSN Messenger)	104	16	7	12	6	5	1
Blogs (i.e., Blogger, Blogspot)	107	21	8	10	4	1	0
File sharing (i.e., ftp, LimeWire, YouTube)	80	22	20	18	7	2	2
Podcasting (i.e., iTunes, Podcast Alley)	99	24	12	12	0	3	1
Social networks (i.e., Facebook, MySpace)	77	18	10	16	21	8	1

10. Do you use online communities for any of the following professional reasons?

Number of Respondents			Professional reason for using online community
Yes	No	Invalid or missing response	
133	17	1	Finding curriculum materials
90	59	2	Participating in professional development
28	119	4	Mentoring or being mentored
120	29	2	Keeping current in my profession
88	62	1	Connecting with other education professionals
101	50	0	Sharing materials and ideas
18	130	3	Seeking emotional support
21	127	3	Connecting with students
109	38	4	Seeking information to enhance professional practice
3	14	134	Other <sup>a</sup>

<sup>a</sup>Other professional reasons listed: keeping up with changes in school policy and state law; enhance writing instruction with ePals site

11. In your experience, which of the following have you found to be hindrances to using online communities in meeting your professional needs?

Number of respondents			Hindrances to professional use
Yes	No	Invalid or missing response	
53	92	6	Unavailable or unreliable computer
72	73	6	Unavailable or unreliable Internet connection
52	93	6	Inexperience or discomfort with computer technology
67	78	6	Unaware of online professional communities
19	124	8	Existing online communities do not fill my needs
76	70	5	Professional needs fulfilled other ways
52	89	10	Membership fees prohibitive
66	45	7	Concerns about protecting privacy online
121	27	3	Lack of time
40	103	8	Tech support not available in timely manner
3	11	137	Other <sup>a</sup>

<sup>a</sup>Other hindrances listed by respondents: one respondent checked *yes* for *lack of time* option 4 times; other teachers not comfortable with technology; school filter blocks many communities

VITA  
Graduate School  
Southern Illinois University

Sherri A. Snider  
2204 Birch Drive, Olney, IL 62450

sherrisnider@verizon.net

EDUCATION

Southern Illinois University, Carbondale, IL  
Master of Science in Education, Instructional Technology, August 2001

Eastern Illinois University, Charleston, IL  
Bachelor of Science, Family & Consumer Sciences, December 1981

HONORS

- East Richland Foundation for Academic Excellence Teacher of the Year, 2003
- Who's Who Among America's Teachers, 1992
- Graduated with High Honor, EIU 1981
- Received Giffin scholarship, EIU Family & Consumer Sciences Department award
- Member & secretary of EIU chapter of Kappa Omicron Phi, Family & Consumer Sciences Honorary Society
- Member of Phi Alpha Eta, EIU Freshman Academic Honorary Society

DISSERTATION TITLE

A Critical Analysis of Rural Teachers' Usage of Online Communities

Major Professor: D. John McIntyre, Ed.D.