Andrews University

School of Education

REFLECTING ON RESEARCH

In Partial Fulfillment

Of the Requirements for the Leadership Program

by

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Introduction

The research competencies in the Leadership Program were the most interesting and intriguing to me. I came into the program knowing that research was a weakness and began my work in this area immediately with a statistics class in the fall after orientation. In this reflection paper, I share how my learning expanded my understanding of research and ignited a passion for conducting research.

Along the path of my learning about research, I discovered the value of reading and evaluating research to inform and improve my practice. My theme for my growth in the Leadership Program has been "out on a lim" as I continue to stretch beyond what seems possible. In my studies, I found the value of research to undergird my practice, my going "out on a lim". Research is the branch that supports my practice, whether it is my own research or others' research. In this reflection paper I share how my understanding of research is changing my work and thinking.

Finally, the reflection paper ends by looking into the future of my research, and my future learning and thinking about the nature of knowledge.

Reading Research

Learning to read research has affected how I evaluate information, understand and apply research, and create new projects and programs based on research and theory.

My connection to reading research to apply to my work and practice began with becoming familiar with journals, article databases, and sources of published research (Galvan, 2006). I learned the difference between an opinion article and a research article

(Hart, 2003) which has significantly changed how I think about the information I ingest daily. When I hear a study quoted in the news, on a blog, in a presentation or a conversation, I wonder about the research methods, the sample size, the methods of measurement and analysis (Galvan, 2006).

Before my in-depth study of the research process, I found it easy to fall into the popular trap of believing that a research study offers "proof" for a particular concept. As I continue to learn more about statistical methods and the challenges of qualitative research, I realize the tentative nature of research studies. Challenges to data analysis, sample selection, observation methods, and measurement methods make research messy, difficult, and therefore imperfect (Pyrczak, 2008). The multiple ways to analyze and report numbers makes it easy to provide misleading results (Huff, 1993). In addition, research results can be biased by sponsorship, the institutional affiliation of the author, or lack of a juried process (Pan, 2004).

Finally, I have begun to grasp the depth of knowledge and understanding that is found in research databases. The plethora of articles and research reports is mind-numbing but also inviting. Reading research expands my knowledge on many topics, including all the leadership competencies. Reading research informs my thinking and my work as I learn to connect theory to my practice (O'Leary, 2005). Reading research improves the quality of my presentations and workshops because the research provides a foundation for my claims and recommendations. Reading research has become a habit and the foundation to my work.

Usefulness of Theoretical Frameworks

Another major learning from my research work in the Leadership Program is the understanding of the usefulness of theoretical frameworks. When I began my dissertation

research, I struggled to find an appropriate theoretical framework. I did not clearly see how the theoretical framework could assist my research. However, when I did find a model for sustainability of a technology innovation in schools (Owston, 2007), the connections to my own research were strong and compelling. My focus on the videoconference coordinator as key to the implementation of videoconference was superseded by the importance of the teachers in the innovation, and this result, foreshadowed in Owston's framework was confirmed in my study (Lim, 2009). Since I found my theoretical framework late in the study, I missed including the perspective of the students, which Owston considers another important element to the sustainability of the innovation. In subsequent research on the top teachers using videoconferencing in my service area (See Artifacts in section 4c-D), the importance of the student perspective became clear and convincing. This experience, along with analysis of my current practice in light of theories for other competencies, has solidified my understanding of the usefulness and practicability of theoretical frameworks.

Designs and Methodologies

In this section, I review some of the research designs and methods I learned during my study. In learning these designs and methods, and beginning to think like a researcher, I have brainstormed several future research projects that I would like to conduct. It is clear from this section that my brain is popping with research ideas and I have been "hooked" on research.

Qualitative Studies

The qualitative research methods class reviewed five qualitative methods: narrative, phenomenological, grounded theory, ethnographic, and case study (Creswell, 2003). Another qualitative researcher suggests an inclusion of an interpretive

hermeneutic approach, using iterative, subjective, investigative or enumerative inquiry (Grbich, 2007). I used the iterative hermeneutic approach for the qualitative research article (see artifacts in section 4c-B) and the case study approach for a class project yet to be published (see artifacts in 4b-D). In addition, during the qualitative research methods class, I brainstormed several other research possibilities in the other categories that I would like to eventually accomplish.

The first idea uses the narrative approach. The problem statement is as follows: While much research as been done on staff development in K12 education, there is little research available on models of staff development where the participants are located in multiple states and engage in simulations and group work at a distance via videoconferencing. The "Jazz" workshop is unique in this perspective and the stories and experiences of new facilitators would add to an understanding of how the workshop impacts professional development. The purpose of this narrative study would be to understand the experience of new facilitators in the weeklong workshop Jazzing Up Your Curriculum with Videoconferencing. At this stage in the research, the "Jazz" experience will be generally defined as an engaging social constructivist distance learning workshop collaboratively facilitated at multiple locations. The data collected could be observations of a session of the workshop where I am not facilitating. I could also interview the facilitators, the lead-facilitator, and some of the participants. This research would contribute to the knowledge of how videoconferencing is used in schools, how educators collaborate across a distance, and how new members of a learning community contribute and adjust.

The second idea uses the phenomenological approach. The problem statement is as follows: Teachers around the world have participated in my online classes to learn

how to effectively use videoconferencing. Each of them has written a brief lesson plan to connect their class with another class for a collaborative project. These types of collaborative projects have not been studied in detailed. This research would provide an understanding of the essence of a collaborative videoconference project through the common experiences of the lessons. The purpose of this phenomenological study would be to describe a collaborative project for participants in my online classes. At this stage in the research, the collaborative project will be generally defined as a videoconference where two or more classes connect to each other for an instructional activity. This research idea is modeled after a similar research study conducted on teacher lesson plans written for content providers such as zoos and museums (D. Newman et al., 2006). The data for this study would be over 100 lesson plans written by teachers in my classes. Data analysis would look for patterns in content and themes. This research would contribute to the knowledge about using videoconferencing in schools and the ways that teachers apply this technology tool to their teaching.

The third idea uses the grounded theory approach. The problem statement is as follows: When videoconferencing is implemented in a school, a specific person is usually assigned to coordinate and promote the use of the equipment. While research has been done on the roles of the facilitator (Hedestig & Kaptelinin, 2005; Wakefield, 1999), a theory needs to be developed to fully understand the process of supporting videoconferencing in a K12 school. The purpose of this study would be to develop a grounded theory for the process and experience of supporting videoconferencing in K12 schools. At this stage in the research, supporting videoconferencing will be generally defined as managing the daily details of using the equipment, promoting its use among the teachers, and supporting the integration of videoconferencing in the curriculum.

The fourth idea uses the ethnographic approach. The problem statement is as follows: The collaborative workshop known as “Jazz” is a unique community of videoconferencing professionals across the United States, and now including Wales. Facilitators of Jazz have a strong collaborative relationship, and use videoconferencing in creative and unique ways compared to the traditional meetings and professional development uses common in K12 distance learning. The community has an impact on the use of videoconferencing of the participants in the workshop, as well as on the support and promotion of videoconferencing in the facilitators’ service areas. The development and sustainability of relationships with remote collaborators is unique and deserves further study to understand the behavior of this subculture. The purpose of this ethnographic study is to understand the Jazz community for the 12 workshop facilitators in Texas, New York, Ohio, Michigan, Wales, North Dakota, and Missouri. At this stage in the research the Jazz community will be generally defined as the three lead facilitators and the facilitators at the participating sites along with all the methods and modes of communication used to develop and sustain a collaborative working relationship. This research would contribute to the knowledge of how learning communities develop and are sustained across distance.

The fifth idea uses the case study approach. The problem statement is as follows: Research has been done to understand and explore one or two uses of videoconferencing in a school throughout a school year (Cifuentes & Murphy, 2000; Keefe, 2003; Yost, 2001). However, these school case studies researched schools that only did a few videoconferences and only a few of the teachers in the school used videoconferencing. An understanding of how videoconferencing is implemented in schools would be stronger with an inclusion of a case study of a school where each teacher used

videoconferencing, and most of them used it extensively throughout the school year. The purpose of this case study is to describe the sustained integrated use of videoconferencing in a high-use elementary school in Edwardsburg, Michigan. At this stage in the research, high use of videoconferencing will be generally defined as every teacher in the school using videoconferencing two to ten times throughout the school year.

Other qualitative research ideas could explore further the implementation of videoconferencing in schools. A basic iterative hermeneutic approach (Grbich, 2007) could examine themes and interaction patterns from a sampling of recorded student videoconferences or the titles and descriptions of the videoconferences used in a high-use elementary school. An understanding of interaction in videoconferencing is still yet to be defined in a usable manner (Daunt, 1999). In addition, very little research has been completed on schools using videoconferencing consistently throughout the curriculum (Keefe, 2003) and so these research ideas would add to the body of knowledge. These research ideas show that I have continued thinking about possible research to be conducted after I finish my studies in the Leadership Program.

Quantitative Research

Quantitative research methods can be divided into experimental and non-experimental inquiry modes (McMillan & Schumacher, 2001). Experimental designs include true experimental with random assignment to treatment groups, quasi-experimental designs without random assignment to treatment and control groups, and single-subject research without random assignment to groups yet direct manipulation to test before and after behavior. True experimental designs are difficult to do in education, and objections abound. Causation in real life has many variables in complex situations; experiments oversimplify education; and withholding potentially beneficial treatments

from those who deserve them is not wise (Cook et al., 20003). Answers to these objections exist: Even if a small number of interactions between variables can be examined, the research is worth conducting and add to the body of knowledge. While schools are unique and diverse, many commonalities exist and the differences, when carefully consider in selecting a sample size, can contribute to the quality of the research. Researchers do not know which treatments are beneficial until the study is completed (Cook et al., 20003). When considering these arguments for and against true experimental designs, I am still very uncomfortable with the idea of experimental designs in education. I do not believe that experimental causational studies are the only source of valid knowledge, and the political and logistical concerns to true experimental design in education make me reluctant to use this type of research design.

Another category of experimental designs is the quasi-experimental design, where the classes are intact, not assigned randomly, and have different teachers. The treatment is given to some of the classes and other classes are treated as controls (McMillan & Schumacher, 2001). While this research design is currently preferred under the "scientifically based research" requirements of the No Child Left Behind Act 2001 (Reyna, 2006), this design is still difficult to do within schools. It is politically challenging to give treatment to certain classes within a school or certain schools within a school district. I am uncomfortable with the idea of randomized trials being "the gold standard" of research (Reyna, 2006) as it seems to deny methods of knowing that are just as valid (Belenky et al., 1986). It also devalues the human as just a plant or animal that can easily be assigned to treatment and control groups (Dalton, 2006). It "outlaws questions that cannot be answered in that fashion" (Belenky et al., 1986, p. 96). It is

difficult for me to conceptualize any research questions that would use this design in my current and future educational work.

A third experimental design is single subject design. This method requires observations and recording behaviors to find a stable and consistent behavior, then implementing the treatment, and observing to see if there is a change that can be understood to be likely caused by the treatment (McMillan & Schumacher, 2001). This subject design seems very logical to me and could be described as teacher action research when done carefully. A way of learning is to observe, make a change, and observe if there is a change. In my opinion, good teachers use this method almost unconsciously, as they try different methods, tools, and resources to reach their students. When observation is refined, defined and made consistent (O'Leary, 2005), the method can be very valuable in improving instruction.

Quantitative designs also include non-experimental modes of inquiry, including descriptive research, comparative research, correlational research, survey research, and *ex post facto* research. Descriptive research describes existing phenomenon by counting characteristics or conditions. Simple data collection in schools on student performance with mean and median can provide useful data to understand the student population (Creighton, 2007; McMillan & Schumacher, 2001). Taking this a step further to compare test scores or grades between different characteristics such as gender or ethnicity is comparative research and is another method of data analysis for decision making in schools (Creighton, 2007; McMillan & Schumacher, 2001).

Correlational research analyzes the degree of relationship between two or more variables. In my dissertation, I examined simple correlations between several school and videoconference coordinator variables with the school’s utilization of videoconferencing

(Lim, 2009) along with using the general linear model to create prediction models (Howell, 2007; McNeil et al., 1996). Correlational research is comfortable to me because it is clearly tentative and accounts for the possibility of other factors affecting the relationship. Correlations are less than perfect (1.0), and therefore it is understood that other factors may also contribute to the phenomenon. Correlation is also tentative because it does not imply causation (I. Newman et al., 2006). Numbers are comfortable for me because I like to count things. However, as I have discussed research with fellow practitioners, I realize that they often consider research to be definitive. Therefore I am reminded of the importance of tentative language when reporting results.

Survey research is popular "in educational research to describe attitudes, beliefs, opinions, and other types of information" (McMillan & Schumacher, 2001, p. 34). Surveys can then move to correlational research looking for relationships, or descriptive research sharing demographic and frequency details. Online surveys are very common in the field of educational technology, and the experience and learning gained from my dissertation research has improved my skills in this area (Newman & McNeil, 1998; Sue & Ritter, 2007).

Finally, *ex post facto* research is the design used in my dissertation. In this research design, variables cannot be manipulated by the researcher. The possible causes have already occurred. Interestingly, McMillan and Schumacher (2001) suggest that *ex post facto* designs "attempt to identify causal relationships" (p. 311), whereas Newman et al. (I. Newman et al., 2006) suggest that causation is "improperly inferred" in *ex post facto* designs (p. 101). This discrepancy reminds me of the differing opinions on research methods and designs, and caution against language that is definitive or the belief in research as a final authority.

The non-experimental research designs described above are all comfortable for me and make sense in my work and research. I have many further research questions that could use one or more of these methods, and will share them in detail in a later section.

Communicating Research Findings

As a growing researcher, I am learning to communicate research findings from articles, books, and dissertations in my presentations and workshops. I am also learning to share my own research in published peer reviewed articles as well as presentations and workshops (Pyrczak & Bruce, 2007). I have begun to share my research in published articles (see 4c sections B and C) and have created a list of future publications to pursue. In addition, I will be presenting my research findings to the TWICE board. The multidimensional perspective to predict the usage of videoconferencing created in my dissertation will be of practical interest to each other them. The measure of utilization, the K12 Curriculum Videoconferencing Implementation Scale, and the correlations of support variables to the utilization of videoconferencing are all of interest to my videoconference colleagues and my blog audience. I have begun sharing the results of my dissertation in short blog posts, referencing the pages in my dissertation, and inviting discussion and reflection on the results. This continued conversation on my work is valuable to further understand my research and also provides fodder for future research.

Implementing Research Findings in My Work

Integrating research into my thinking has changed my work practices. I now try to include more research findings in my presentations, and I look for research support of my practices. In addition, I am improving my support of videoconferencing based on my dissertation research.

I often present to schools in my area, nationally, and internationally about using videoconferencing in the curriculum. A direct change in my presentations is the regular inclusion of research studies on videoconferencing and the benefits in the classroom. My PowerPoints now have bibliographies, in addition to appealing slides and video clips. Others' research now undergirds my recommendations and assertions. I find that others ask me for research studies, and having them easily accessible in EndNote and referenced on my videoconferencing blog has increased my expert status in the field (French & Raven, 1959).

From my own research (Lim, 2009), I am applying the results in my support of videoconferencing in my schools. I have updated my coordinator training to include more supports and suggestions on working with teachers, since teachers' are so key to the use of videoconferencing in schools. I have already used the results on the coordinator's position to discuss a possible change in coordinator in one school where videoconferencing is rarely used. My results are assisting my recommendations to principals. I plan to use my new Scale for end of the year evaluations, to further discover how I can assist the growth of my videoconference coordinators. I continue to recommend to others that the design of an effective videoconference support structure includes the school level videoconference coordinator, the teachers, principal, tech support, and support from an educational service agency.

The Path to Future Research and Learning

For better or for worse, writing has become part of my life, and part of my practice (Bolker, 1998). Writing my dissertation has changed me, my writing, and my reading. I have changed in my view on learning and knowing. My writing has improved; and I read with a more research-aware view. I have created a writing task list to capture

the writing momentum and keep it up with future articles, research, and learning. This next section reviews my future plans for research and learning.

My dissertation was grounded in a qualitative study (Lim & Freed, 2009) but conducted with quantitative methods. The data collected provides a wealth for future research and articles. The first two articles I plan to publish are on the basic two components of my research: the development of the K12 Curriculum Videoconferencing Implementation Scale (Lim, 2009) and the model to predict the utilization of videoconferencing in schools (Lim, 2009). In addition, on further reflection on descriptive statistics (Creighton, 2007), another research article will report on the descriptive statistics and implications based on them. An article on the results of my pilot data could be published, as well as an article comparing the utilization of videoconferencing with the location of the equipment and the job title of the videoconference coordinator.

Just before my defense, my graphic connecting the theoretical framework to my study was completed (See Figure 1). From this understanding, future research was

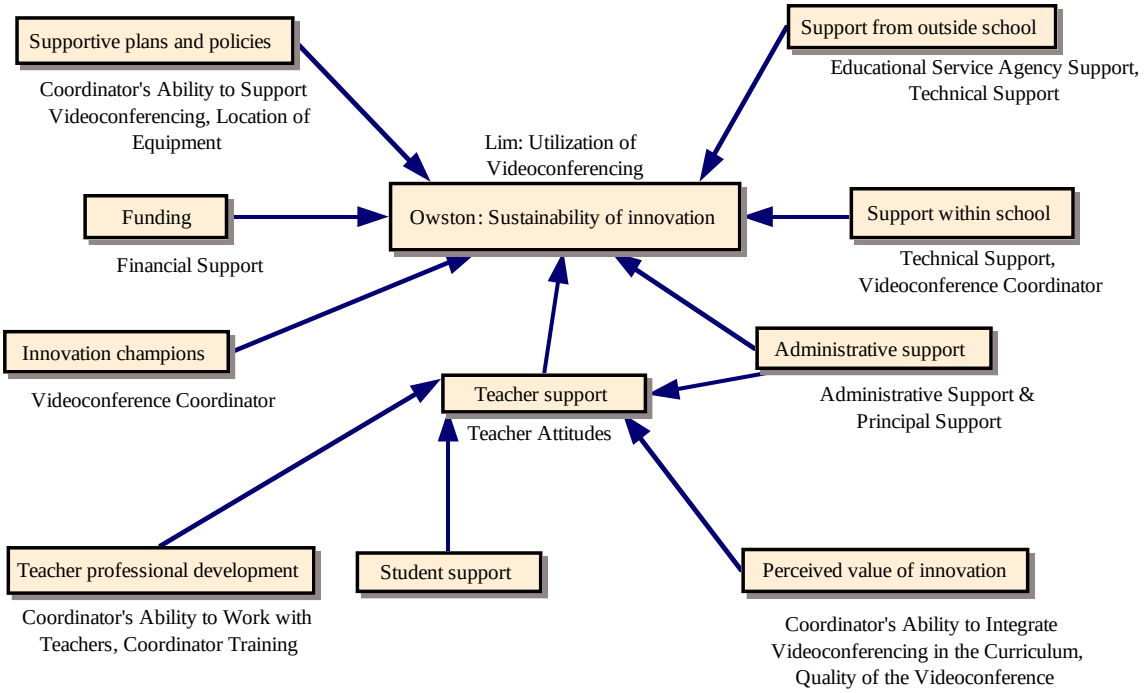


Figure 1. Theoretical Framework

Figure 2. Theoretical Framework

suggested by Dr. Newman. The variables could be grouped by the components in Owston's model (2007) to see if the categories predict utilization of videoconferencing in the school. This research would test Owston's theory and seems very intriguing and interesting.

Other research questions that arose during my dissertation defense would be interesting to pursue. Does my prediction model work the same for the three highest response states of Michigan, New York, and Texas? Is a different model better for Michigan, New York, or Texas? These three states provide the highest participation in the Read Around the Planet project (TWICE, 2007) and were also the highest responding states for my research. Another question pertains to my definition of utilization. Does the prediction model work the same with just the number of events in the school and not the percent of teachers who participated in the videoconferences? This research would reconsider and test my utilization definition for its usefulness. Other research questions have been raised. Would future studies confirm the results? Why does the use of videoconferencing decline as the coordinator has more experience? Is the Scale still valid in other circumstances? Why were so many of the administrative and financial support variables insignificant? Is the use of curriculum videoconferencing sustainable? Could the Scale be refined to have a higher correlation with utilization (higher than .228)? What is the impact of curriculum videoconferencing on student achievement? These research questions and others will keep me on a research path for the substantial future.

When I sent out my survey in the spring of 2008, my target audience was videoconferencing coordinators at the school level. However, I received emails from educational service agency level videoconference coordinators and distance learning specialists who wanted a survey that was targeted to them. Since then, several research

questions have arisen based on discussions with colleagues and the results from my research (Lim, 2009). What services do educational services agencies offer their schools? How many facilitate programs? How many schedule programs for their schools? What type of programs do they facilitate and schedule for their schools? How many conduct all the test calls and connections for their schools? Is there a relationship between the specific types of services and the schools' use of videoconferencing? Are some services most essential or effective than others?

Finally, many research questions and potential articles arose from a three year United States Department of Agriculture Rural Utilities Service Distance Learning and Telemedicine Grant (RUS grant) that ended in 2009. Data was collected on participation, teacher reactions, professional development, and teacher evaluations of videoconferences. The RUS grant data could be extracted from my dissertation data to write specifically about the RUS grant implementation. Potential research questions include: Did the positive professional development lead to increased use and implementation of videoconferencing? How are teachers sustaining the use of videoconferencing? What was the result of the professional development offered? Did attitudes and beliefs about videoconferencing change? Further research can be done on the data collected from this grant.

Future learning could include other methods of data analysis. Dr. Newman is encouraging me to learn about Q-factor analysis, Q-methodology and other procedures. Further experience with qualitative research methods would expand my research abilities as well. In further research and learning, I can improve my ability and understanding of applying research methods to program evaluation (McNeil et al., 2005), specifically to

the evaluation of educational technology programs (Haertel & Means, 2003; Heineke & Blasi, 2001).

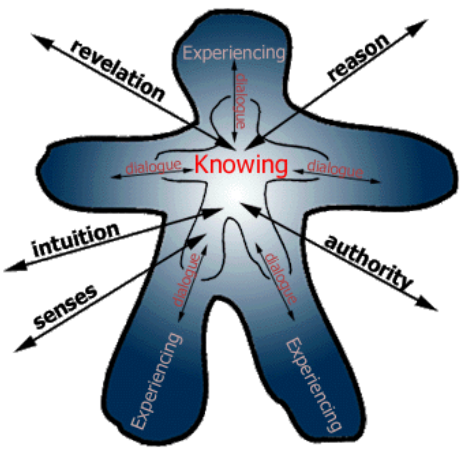
My work is clearly set out before me: to continue in the path of research, to write and report research, and to contribute to the literature in the educational technology field. A passion for research has been ignited; now I must carve out time to continue to polish and utilize my new-found research skills.

Considering the Nature of Knowledge and Research

Not everything that can be counted counts, and not everything that counts can be counted." - Albert Einstein

My dissertation work has raised several questions about the nature of knowledge and research. In some ways, my dissertation results confirmed my own experience in supporting videoconferencing. While some results were surprising, they were explainable from my experience with schools. The K12 Curriculum Videoconferencing Implementation Scale arose from the conversations of educators in my online class, and was polished based on my work and experience with videoconferencing educators internationally. This foundation in real life application resulted in impressive reliability (Cronbach's alpha = .851), test-retest validity (.950), and cross validation (1% shrinkage). The tension between experience and research is strong and challenging.

Freed's Epistemological Model (March 1, 2009) helps me make sense of the sources of knowing, including experience and research. In the model, the person accepts several different sources of knowing: revelation, reason, intuition, senses, and authority. My reason and senses are used to observe,



collect data, analyze it, and reach conclusions. Authorities such as other research and theoretical frameworks guide my reason and senses in creating my research studies. My intuition and experience contribute to my understanding, and are evaluated and confirmed or modified based on reason and authority. My experience is the window through which I accept knowledge from authority, reason, and my senses. My dialogue with colleagues across the nation, via my personal learning network of blogs, real-time communication tools, and Twitter, allow me to expand my understanding and learn new ways of utilizing and evaluating sources of knowledge. Belanky (1986) suggests that this type of knowing is “constructed” as a person integrates intuitive knowledge with “knowledge learned from others” (p. 134). Michael Gold shares that, as in jazz, combining intellectual rigor with the intuitive somatic creates new polyrhythms (Gold, 2009) which complement and challenge each other.

As a researcher, I continue to consider the philosophical ideas behind different methods of research. Knight (2006) notes philosophical underpinnings of qualitative research, especially the forms of qualitative research that address power and oppression. I enjoy both qualitative and quantitative research. I find satisfaction in "solid" numbers; but I also the value of thick personal descriptions of various perspectives in a given issue. I realize the value of considering the frame of reference and the potential ways to examine, question and develop systems for research and constructing knowledge (Belenky et al., 1986).

Questions about the nature of knowledge, knowing, and the views of others around me will continue to challenge my thinking and learning in the future. Practitioners around me implicitly trust numbers. The accountability and data driven decision making movements in K12 public education are driving certain types of knowing and research.

Yet other sources and methods of knowledge provide answers to questions not answerable by quantitative methods of research. How are these types of knowledge balanced in my work, my learning, and my relationships with other researchers and colleagues? These questions will continue to simmer in my brain in future learning and thinking.

Thinking Like a Researcher

In summary, my work in the research competencies for the Leadership Program have started me along the path of thinking like a researcher. I see research questions in the world around me. When someone asks a research question, I begin thinking about methods, samples, and instrumentation. When I hear reports of research, I question the methods, samples, and instrumentation. When I begin a new presentation, workshop, or program, I examine the literature for recommendations, theoretical frameworks, or models to assist my practice. My task list has grown with potential future research and articles. I will never be the same again!

REFERENCES

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1986). *Women's ways of knowing*. New York, NY: Basic Books.

Bolker, J. (1998). *Writing your dissertation in fifteen minutes a day*. New York, NY: Owl Books.

Cook, T. D., Means, B., Haertel, G. D., & Michalchik, V. (20003). The case for randomized experiments. In G. D. Haertel & B. Means (Eds.), *Evaluating educational technology*. New York, NY: Teachers College Press.

Creighton, T. B. (2007). *Schools and data: the educator's guide for using data to improve decision making*. Thousand Oaks, CA: Corwin Press.

Creswell, J. W. (2003). *Research design: qualitative, quantitative, and mixed method approaches*. Thousand Oaks, CA: Sage Publications.

Dalton, D. (2006). *Educational research: The gold standard?* Retrieved from http://specialed.wordpress.com/2006/02/10/educational-researchthe-gold-standard.

Daunt, C. (1999). *The nature of interaction in educational videoconferencing.* (AAT

Freed, S. (March 1, 2009). *Freed's epistemological model*. Retrieved from http://www.andrews.edu/~freed/socialworld/knowing.html

French, J., & Raven, B. H. (1959). The bases of social power. In D. Cartwright (Ed.), *Studies of social power*. Ann Arbor, MI: Institute for Social Research.

Galvan, J. L. (2006). *Writing literature reviews: a guide for students of the social and behavioral sciences* (3rd ed.). Glendale, CA: Pyrczak Publishing.

Gold, M. (2009). *Jazz impact*. Paper presented at the Leadership Roundtable. Retrieved from http://www.jazz-impact.com/

Grbich, C. (2007). *Qualitative data analysis: An introduction*. Thousand Oaks, CA: Sage.

Haertel, G. D., & Means, B. (2003). *Evaluating educational technology: Effective research designs for improving learning*. New York, NY: Teachers College Press.

Hart, C. (2003). *Doing a literature review: releasing the social science research imagination* (repr. ed.). New York, NY: Sage Publications.

Hedestig, U., & Kaptelinin, V. (2005). Facilitator's roles in a videoconference learning environment. *Information Systems Frontiers, 7*(1), 71-83.

Heineke, W. F., & Blasi, L. (2001). *Methods of evaluating educational technology*. Greenwich, CT: Information Age Pub.

Howell, D. C. (2007). *Statistical methods for psychology*. Belmont, CA: Thomson Higher Education.

Huff, D. (1993). *How to lie with statistics*. New York, NY: W. W. Norton & Company, Inc.

Keefe, D. D. (2003). *A case study of the integration of a video learning center at an elementary school.* Retrieved from ProQuest Digital Dissertations. (AAT 3091163)

Knight, G. R. (2006). *Philosophy and education : an introduction in Christian perspective* (Fourth ed.). Berrien Springs, MI: Andrews University Press.

Lim, J. (2009). *The development of an instrument for K12 coordinators implementing curriculum videoconferencing and a model to predict utilization of videoconferencing.* Retrieved from ProQuest Digital Dissertations. (AAT

Lim, J., & Freed, S. (2009). *We have the videoconference equipment installed, now what?* Manuscript submitted for publication to *The Qualitative Report*.

McMillan, J. H., & Schumacher, S. (2001). *Research in education: A conceptual introduction*. New York, NY: Longman.

McNeil, K. A., Newman, I., & Kelly, F. J. (1996). *Testing research hypotheses with the general linear model*. Carbondale, IL: Southern Illinois University Press.

McNeil, K. A., Newman, I., & Steinhauser, J. (2005). *How to be involved in program evaluation: What every administrator needs to know*. Lanham, MD: Scarecrow Education.

Newman, D., Du, Y., Bose, M., & Bidjerano, T. (2006). *A content analysis of videoconference integration plans.* Paper presented at the Society for Information Technology and Teacher Education International Conference, Orlando, FL.

Newman, I., & McNeil, K. A. (1998). *Conducting survey research in the social sciences*. Lanham, MD: University Press of America.

Newman, I., Newman, C., Brown, R., & McNeely, S. (2006). *Conceptual statistics for beginners* (3rd ed.). Lanham, MD: University Press of America.

O'Leary, Z. (2005). *Researching real-world problems: A guide to methods of inquiry*. Thousand Oaks, CA: Sage.

Owston, R. (2007). Contextual factors that sustain innovative pedagogical practice using technology: an international study. *Journal of Educational Change, 8*(1), 61-77. doi:10.1007/s10833-006-9006-6

Pan, M. L. (2004). *Qualitative and quantitative approaches: Preparing literature reviews* (2nd ed.). Glendale, CA: Pyrczak Publishing.

Pyrczak, F. (2008). *Evaluating research in academic journals: a practical guide to realistic evaluation* (4th ed.). Glendale, CA: Pyrczak Publishing.

Pyrczak, F., & Bruce, R. R. (2007). *Writing empirical research reports*. Glendale, CA: Pryrczak.

Reyna, V. (2006). *The logic of scientific research*. Retrieved from http://www.ed.gov/nclb/methods/whatworks/research/page_pg10.html

Sue, V. M., & Ritter, L. A. (2007). *Conducting online surveys*. Thousand Oaks, CA: Sage.

TWICE. (2007). *Videoconferencing collaborative projects*. Retrieved from http://www.twice.cc/projects.html

Wakefield, C. K. (1999). *Site facilitator roles in videoconferencing: Implications for training.* Retrieved from ProQuest Digital Dissertations. (AAT 9960871)