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A Technology Assisted Counseling Observation System: A Study of the Impact on Teaching and Learning

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A TECHNOLOGY ASSISTED COUNSELING OBSERVATION SYSTEM: A STUDY OF THE IMPACT ON TEACHING AND LEARNING

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ABSTRACT

Title: A Technology Assisted Counseling Observation System: A Study of the Impact on Teaching and Learning

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The Counseling Department at Indiana University of Pennsylvania installed a technology enhanced counselor training and clinical observation system (the Landro Play Analyzer system). The system was designed to replace their traditional video tape and one-way window observation systems used for counselor training and clinical supervision.

Howard Gardner's work with multiple intelligences is used as a theoretical framework in this study in helping to understand how the Landro Play Analyzer has changed the many ways in which counselor training is being conducted, and how it has changed the multiple ways the counselor education students are learning. The Landro Play Analyzer allows students to learn concepts and techniques in a variety of ways and for the professors to introduce concepts and techniques in multiple ways.

This evaluative case study explores the impact this new system has on both teaching and learning. Seven professors and five graduate students in the Counseling Department at Indiana University of Pennsylvania were interviewed. The five research questions that were explored in this study are: the impact the system had on teaching and learning; how the counseling faculty members changed the way they teach their students;

how the way in which the counseling students learn their counseling skills has changed because of the new system; how the new system provides for student reflection and feedback; and how the new system reduces or increases the anxiety of students because their counseling sessions are recorded.

This study shows that the Landro system has a significant impact on both learning and teaching. Faculty members incorporated the Landro Play Analyzer into their courses and the system changed the way students learn counseling skills. The Landro system provides innovative ways for students to record, review, clip and code, and reflect on their counselor training sessions. Reinforcement of counseling concepts and techniques is enhanced by the Landro system due to the capability to review, clip and code, and compare progress over time. When issues regarding anxiety were discussed in the interviews, subjects explained that it is not the Landro system, but just the process of being recorded, that creates anxiety.

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I would like to thank the members of my committee for their guidance and assistance throughout the development of this dissertation, as well as the faculty of the Administration and Leadership Studies program at Indiana University of Pennsylvania for their excellent courses. Dr. Cathy Kaufman, as chairperson of my committee, was extremely helpful in guiding me through the dissertation process and keeping me on track. Her constant encouragement kept me going at times when I wanted to just walk away from it all. The other members of my committee, Dr. Monte Tidwell and Dr. Lynanne Black, were also very helpful in providing assistance and guidance throughout the dissertation process.

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Mr. Jerry Salandro and other employees at IRIS Technologies, Inc. provided me with valuable information about their products such as the Landro Play Analyzer, Commander, and other technology systems that directly related to this study. Mr. Salandro's willingness to help the faculty and students in the Counselor Education program and other programs at Indiana University of Pennsylvania made it possible to develop the clinical observation system that is the focus of this dissertation.

I am deeply indebted to the faculty and students in the Counselor Education program at Indiana University of Pennsylvania, and especially Dr. Claire Dandeneau and Dr. Lorraine Guth. Without their dedication, the development of the clinical observation system would not have been possible, and this dissertation study would not have been possible.

I especially want to thank my wife Estelle for her strong support as I worked so many hours on coursework and this dissertation. Her total understanding and unwavering support helped me keep on track and stay with the program until completion. Every time I asked whether this endeavor was worth it, she assured me it was, and strongly encouraged me to continue. Without her total support, I would never have completed this program.

I dedicate this dissertation to the memory of my father who always wanted me to go to college to get a good education. I also dedicate this dissertation to my mother who always wanted only the best for her sons.

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CHAPTER 1

INTRODUCTION

Background

For many years, the Counseling Department at Indiana University of Pennsylvania (IUP) used a traditional observation system for counselor training and clinical observation. The system consisted of five observation rooms, each equipped with one-way windows to allow students and faculty to observe counseling sessions. The observation rooms contained an audio system to allow communication between observers and the counselor trainees. Small groups of students learned by watching through the one-way windows as other counseling students worked with clients in the observation rooms while a faculty member supervised (Johnson, 1985). Many universities still use this type of observation system for clinical training.

More recently, the observation rooms at many universities, including the Counseling Department at IUP, have been outfitted with video cameras for recording the counseling sessions. The video recordings could then be replayed at a later time and, often, the counseling student would transcribe word-for-word the audio portion of the video tapes and add an analysis of what happened during the session. Then the video tape, the transcription, and the analysis could be reviewed by a faculty member (Bloom & Walz, 2005). In some cases, counseling students were required to review only their own videotaped sessions, while in other cases they may have been required to review other sessions as well (Johnson, 1985). Sometimes the video tapes were used in classrooms to demonstrate good or poor techniques and situations that had occurred in training sessions. These methods of observation using videotape, audio recordings, and other similar

techniques for clinical training can be found in most universities today (Bernard & Goodyear, 2004).

In some educational institutions, direct video observations are being used for counselor training (Astramovich, Jones, & Coker, 2004). Some institutions are using video conferencing systems (Kaplan, Rothrock, & Culkin, 1999), telephones, and webcams to supervise counseling sessions, especially when the counseling students are in the field (McCurdy, 2002; Wilson, 2001).

During the spring of 2004, the Counseling Department at Indiana University of Pennsylvania installed a technology enhanced counselor training and clinical observation system. The system was designed to replace their traditional video tape and one-way window observation systems used for counselor training and clinical supervision (Dandeneau & Guth, 2005a).

A team, consisting of the Department Chair of the Counseling Department, a faculty member of the Counseling Department, the Assistant Dean for Technology for the College of Education and Educational Technology, the Network Manager for the College of Education and Educational Technology, and the Electronics Systems Technician for the College of Education and Educational Technology, developed a concept of a new type of counselor training and clinical observation system. The team searched world-wide for the necessary hardware and software that would enable counseling students to record clinical training sessions and then play back the recorded sessions, route the video and audio to classrooms and faculty offices, and most importantly easily edit and mark sections of the recording for analysis and playback, while also creating statistical data about the recorded sessions. After extensive research, the team located what appeared to

be the only available system that met all of the needs and specifications. The system is manufactured by IRIS Technologies (Salandro, 2007a), a company located just 40 miles from Indiana University of Pennsylvania.

The Landro Play Analyzer (LPA) (Salandro, 2007b) by IRIS Technologies was designed specifically for football teams, and enables football coaches to review and analyze game and practice videos, mark individual plays with the type of play, down, play result, and other play information. The football coach can then access specific types of plays almost instantaneously without having to waste time going forward and back through video tapes, thus saving time and eliminating distractions for coaches and players.

The IUP Counseling team felt the Landro Play Analyzer provided all of the features needed to record, edit and mark events, and provide quick access to the counseling training session material. While discussing the specific needs with employees from IRIS Technologies, Mr. Jerry Salandro, President and CEO of the company, agreed that their computer programming staff could modify the software in the Landro Play Analyzer so that it would provide the ability to code counseling recordings with the types of events observed in counseling sessions, rather than just code football plays.

The other major component that was required for the counselor training and clinical observation system was a device that would allow the routing of video and audio data from any of the five observation rooms to a variety of destinations. The destinations include any of the Landro Play Analyzers, any of the classrooms used by the Counseling Department faculty, and/or any of the faculty offices. The system also needed the ability to transmit audio from faculty to the counselor trainees in the observation rooms using a

bug-in-the-ear type of device that allows the trainee to hear instructions and suggestions from the faculty, but does not allow the client to also hear the comments. The Video Commander (Salandro, 2007c) by IRIS Technologies met all of these needs extremely well. The Video Commander is a video and audio switching system that allows audio and/or video signals to be transmitted from nearly any type of audio/video device to nearly any type of destination. The Video Commander also allows the signals to be transmitted to multiple receiving points simultaneously.

The combination of Landro Play Analyzers and the Video Commander "allows us to have tapeless, timeless, nonlinear and developmental access to supervisees' individual and group sessions" (Dandeneau & Guth, 2005a). Specifically, the system allows for:

- Customization of a theoretically based database that includes responses specific to course learning objectives.
- Client and counselor response coding (basic and advanced skills and interventions).
- Frame-by-frame performance analysis of supervisees' clinical skills.
- Response coding searches within and across sessions.
- Identification of common response patterns across groups of supervisees.
- Targeted individual supervision to enhance skills acquisition.
- Enhanced group supervision (Dandeneau & Guth, 2005a).

In the fall of 2003, the IUP Counseling Department obtained $78,000 from the Technology Fund through the Pennsylvania State System of Higher Education for the purchase of the hardware and software for the counselor training and clinical observation system. In the spring of 2004, the Counseling Department purchased and installed five

Landro Play Analyzers (LPA), a Video Commander, ten video cameras (two in each of the five observation rooms), five microphones, five VCRs, five DVD recorders, and software and hardware for faculty personal computers to access the system. The Counseling Department also purchased and installed network cable and a network hub to provide dedicated and secure connectivity between all of the components and the Video Commander.

The Counseling Department at IUP began using the clinical observation system in their classes starting in the fall of 2004. In a journal article in Counseling Today, the authors (Dandeneau & Guth, 2005a) described how their students use the counselor training and clinical observation system:

> The student first routes the session for recording to the LPA. Then he/she conducts the session. With the session now recorded, the student is ready to analyze the session using the LPA.
>
> Analyzing the session includes clipping and coding the responses (see Appendix I for examples of coding). For example, a student would select a response, then code it for focus (counselor or client), type (such as reflection or feelings), effectiveness (using a 1-5 rating system) and other relevant categories. After the codes are entered, the student prepares for presentation and/or supervision.
>
> In supervision, the supervisor and student can query the coded responses. For example, the supervisor may say, "Show me responses that demonstrate your ability to respond to the client's affect." The student then selects the appropriate search criteria and displays all the 'clips' that demonstrate this skill. This search

process can be within a session or across numerous sessions. For presentations for group supervision, multiple students can be asked to show clips that illustrate certain skills. For example, they could be asked to show how they discuss confidentiality with their clients, and each student's clip can be shown for class feedback. This search, whether in supervision or in class, is effortless and takes less than five seconds! This tapeless, timeless, nonlinear and developmental access has revolutionized how we conceptualize our instruction and supervision (Dandeneau & Guth, 2005a).

This qualitative study of a counselor training and clinical observation system in the Counseling Department at Indiana University of Pennsylvania will explore how it has impacted both learning and teaching at the university. This chapter will introduce the study, its scope and limitations, and the problem to be researched. This chapter will briefly discuss the theoretical framework for the study, the organization of the study, the research questions of the study, and the research methodology to be used.

Theoretical Framework for this Study

The Landro Play Analyzer system allows students to learn in many different ways, and for the professors to teach in many different ways. Everyone finds that they learn certain concepts easily in certain modes, and yet other concepts are more difficult to learn. Howard Gardner (2006a) has posited that there are multiple intelligences, and we each have certain intelligences in which we are more proficient. As Gardner (2006a) points out, "I believe that human cognitive competence is better described in terms of a set of abilities, talents, or mental skills, which I call intelligences. All normal individuals

possess each of these skills to some extent; individuals differ in the degree or skill and in the nature of their combination" (p. 6).

Gardner (Gardner, 2006a) recognized that we each have different cognitive strengths and skills. He identified a set of intelligences including: musical intelligence, bodily-kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, and intrapersonal intelligence (pp. 8-18). Gardner later added naturalist intelligence to his list (p. 19) and has discussed other possible intelligences.

Gardner (2006a) also discussed how we master concepts through repeated exposure to the material. "One almost never achieves instant understanding. But it is a mistake to present the same content in the same way. Understanding is far more likely to be achieved if the student encounters the material in a variety of guises and contexts. And the best way to bring this about is to draw on all of the intelligences that are relevant to that topic in as many legitimate ways as possible" (p. 60). The Landro Play Analyzer allows students to learn concepts and techniques in a variety of ways and for the professors to introduce concepts and techniques in multiple ways.

Howard Gardner's work with multiple intelligences will be used as a theoretical framework in this study in helping to describe and understand how the Landro Play Analyzer has changed the many ways in which counselor training is being conducted, and how it has changed the multiple ways the counselor education students are learning.

Organization of the Study

This is an evaluative case study of a counselor training and clinical observation system in the Counseling Department at Indiana University of Pennsylvania and how it

has impacted both learning and teaching at the university. Chapter one introduces the study, its scope and limitations, and the problem to be researched. Chapter two is a review of related literature regarding various observation systems used for training counselors, and literature regarding the use of technology in observation systems. The third chapter describes the methodology used in the study, while chapter four presents the results of this study. The final chapter discusses implications, recommendations for future research, and conclusions.

Statement of the Problem

The implementation of a technology assisted counselor training and clinical observation system by the faculty in the IUP Counseling Department has modified the way in which the faculty members teach and the students learn. This study will explore the ways in which the faculty members have modified their teaching to incorporate the new observation system into the curriculum, and how student learning has been impacted. The specific research questions and assumptions that guide this study are:

1. What impact has the IUP counselor training and clinical observation system had on teaching and learning?

This study assumes the observation system has had a significant impact on both teaching and learning, and will explore what that impact has been. Several studies related to this research question will be discussed in chapter 2 of this dissertation. In a study by Kaplan, Rothrock and Culkin (1999), the authors described the use of live counseling sessions as well as videotaped counseling sessions as an integral part of courses. The results of their study showed that the counseling students felt the recording technology enhanced the course. In another study, Baggerly (2002) discussed a variety of

technological enhancements that enhanced counselor education training. A study by Thomas (2009) compared the use of the Landro system to the more traditional VCR system for analysis of stuttering, and his results showed that in some cases the Landro system was more effective as a teaching and learning system.

2. How have the IUP counseling faculty changed the way they teach their students because of the IUP counselor training and clinical observation system?

This study assumes the faculty members have changed the way they teach because of the observation system, and will explore what those changes have been and why. The studies by Kaplan, Rothrock and Culkin (1999) and by Baggerly (2002) both discuss how the faculty members incorporated technological change in their counseling courses to improve the courses.

3. How has the way in which Counseling students learn their counseling skills changed because of the IUP counselor training and clinical observation system?

This study assumes the way in which the students learn has changed because of the observation system, and will explore what those changes have been. The Landro Play Analyzer was designed for coaching football, but the Counseling Department at Indiana University has adapted the system to assist in training counseling students. In chapter 2 of this dissertation, a study of the use of the Landro system for football coaching is explored by Cole (2006), discussing the way that the Landro system has changed the way in which the coaches are able to train the football players. Another study discussed in chapter 2 of this dissertation is a journal article from Counseling Today (Dandeneau & Guth, 2005a),

in which the authors described how their students use the counselor training and clinical observation system, and how it has changed the way the students learn using the Landro system.

4. How does the IUP counselor training and clinical observation system provide for student reflection and feedback as they progress through their program of study?

This study assumes that the observation system provides for student reflection and feedback, and will explore how that reflection and feedback works. Chapter 2 of this dissertation contains a specific section regarding reflection in counselor training. McCarthy (2007) discussed the importance of reflection in counselor training, and explained how students must "take an active role in analyzing, synthesizing and evaluating their own learning" (p. 26). In several other sections of chapter 2, the use of various types of technologies to assist students with reflection and feedback are explored.

5. How does the IUP counselor training and clinical observation system reduce or increase the anxiety of students because their counseling sessions are recorded?

This study assumes that the observation system has reduced the anxiety of students because the sessions are recorded rather than observed live by their professor. This study will explore anxiety issues of students using the observation system. Chapter 2 of this dissertation contains a section that discusses anxiety in counselor training. Costa (1994) discussed how the anxiety for counselor trainees can impact the learning process for them. Costa differentiated live counseling supervision sessions from video recorded sessions because of the immediate intervention that can be made by the supervisor. In

another study, Jumper (1998) discussed how some technology devices can sometimes produce more anxiety, and at other times may help the trainees to be more relaxed in their sessions (p. 128).

Limitations of the Study

Observation systems similar to those in the Counseling Department at IUP have also been installed in the Educational and School Psychology Department at IUP and in the Speech and Hearing program at IUP. While the installed hardware and software are similar in each department, the use of the systems is substantially different. This dissertation will not study the use of the observation systems in these other departments, but will focus on just the use in the Counseling Department at IUP.

Some other universities have installed the same or very similar systems at their institutions after seeing or hearing about the Counseling Observation system at IUP. While it is assumed that the other universities have experienced similar results to the IUP Counseling Department, this study is limited to the counseling observation system in the Counseling Department at IUP.

This study is focused on the impact on teaching and learning that the Counseling Observation System at IUP affords, and not specifically on the use in the field of Counseling Education or on the specific subject matter used in training counselors.

Due to the confidentiality of the counseling observations, only the Counseling faculty and the students enrolled in the Counseling program are allowed to view the recordings and interact with the clients being counseled, so this researcher will not be able to view the actual recordings or live sessions. However, that limitation will not

impact the study, since this qualitative study will consist of interviews with students and counseling faculty who are using the system, not in observing them using the system.

This researcher is employed as the Assistant Dean for Technology in the College of Education and Educational Technology at Indiana University of Pennsylvania. While he works with the faculty and students in the Counseling Department and other departments within the College of Education and Educational Technology, he has no supervisory role or authority over them. His role is to assist the faculty, staff and students within the College of Education and Educational Technology with issues related to computer hardware and software and other types of technology. While some people may feel this is a dual role that may have impact on the study, it is common in qualitative research for the researcher to be closely involved with the research participants, and the researcher will do all he can to assure that his relationship with the participants does not influence their responses nor his conclusions.

As will be discussed in the methodology sections of this study, five counseling faculty and five counseling students will be interviewed in this qualitative study. This number of interviews should be sufficient to obtain a clear understanding of the impact the technology enhanced counselor training and clinical observation system in the Counseling Department has had on both teaching and learning.

Significance of the Study

The technology enhanced counselor training and clinical observation system that has been installed in the Counseling Department at Indiana University of Pennsylvania was the first system of its type in the world. The way in which the faculty members are now teaching, and the way in which students in the program are learning has changed due

to the implementation of this new system. The system has been demonstrated at national and international Counselor Education conferences (Dandeneau, Guth, Onyett, Salandro, & Kasun, 2005b). Faculty at other universities around the world are interested in developing similar counselor training and clinical observation systems. Some universities have, after seeing or hearing about the system at IUP, installed similar systems (see Appendix H for a list of other universities using the Landro Play Analyzer for counselor training). Some universities have installed similar systems to assist in other academic disciplines such as Educational Psychology, Speech and Language Pathology, and other fields where clinical supervision is an essential part of their curriculum. Indiana University has installed this type of system in their Educational and School Psychology Department and Special Education and Clinical Services Department.

A review of the literature reveals that there have been some studies of the use of video recording, audio recording, and live viewing of counselor training, but very little research appears to have been done regarding the use of more complex technological methods such as those that the IUP observation system incorporates. No detailed study has been made of the impact that this new counselor training and clinical observation system has on teaching and learning, and yet it is being used to develop counseling skills in future counselors, not only at IUP, but also at other universities that have installed similar systems. This study will investigate and evaluate the impact the new technology has had on teaching and learning.

Methodology

This study will focus on the impact on teaching and learning that the IUP counselor training and clinical observation system affords, but not focus specifically on

issues regarding the training of counselors or on specific issues related to the field of counseling.

The study will utilize qualitative research methods. Information will be collected from those faculty and students using this new system. Information will also be collected from those faculty and students who used previous methods. The information will be analyzed and tied to the research questions to try to determine if the new system has had a significant impact or not.

Five of the faculty in the IUP Counseling Department who are using the counselor training and clinical observation system will be interviewed to determine what changes they have made to their teaching methods because of the system, what changes in the curriculum they have made, and why they made those curriculum changes. They will also be asked if they feel the curriculum changes have been effective. They will be questioned about their perceptions of the effectiveness of the system for teaching their counseling students, and how they feel it has changed the way their students are learning. Interview questions will be also be used to gather additional data from the faculty such as the amount of training time needed by their students to use the system, the number of counseling sessions each student is required to perform with the system, the amount of increase or decrease of time spent by students with the new system versus the traditional video tapes and transcripts used in the past, the amount of time needed by faculty to review student sessions, and other comparative data that will help in understanding the impact on instruction.

Five currently enrolled graduate students in the Counselor Education program will be interviewed to determine their perceptions of the effectiveness of their training using

the observation system. Interview questions will also be used to gather additional data such as the amount of training time needed by the students to feel comfortable with using the system, the number of counseling sessions each student uses the system, the amount of time necessary to mark and code the counseling sessions, and other comparative data that will help in understanding the impact on learning.

Definition of Terms

The following terminology will be used throughout this study.

Bug-in-the-ear – an audio receiver and earphone, used to receive audio directions or additional information spoken by a counseling faculty member to a counselor trainee. The device prevents the client(s) from being able to hear the audio.

Counselor training and clinical observation system – a technology enhanced system that uses the Landro Play Analyzer, the Video Commander, and other computer and communication hardware and software to provide the ability to route counseling session video and audio to a variety of destinations, store the counseling session video and audio, mark and code events in the counseling sessions, and play back selected events from recorded counseling sessions.

IRIS Technologies – the company that developed and produced the Landro Play Analyzer, the Video Commander, and other technology that became part of the counselor training and clinical observation system in the Counseling Department at Indiana University of Pennsylvania (Salandro, 2007a).

IUP – Indiana University of Pennsylvania, a state university located in Indiana, Pennsylvania.

Landro Play Analyzer (also referred to as an LPA) – a device that allows the recording of video and audio, and then provides the ability to mark and code events within the recording for reference. After events are marked and coded, the Landro Play Analyzer provides quick access to any marked event in the recording. The LPA also provides database and summarizing capabilities for analyzing the coded events. Appendix F contains detailed information about the Landro Play Analyzer (Salandro, 2007b).

One-way window – a window that usually has a mirrored finish on one side so that someone can see through the window from one side, but not from the other side. One-way windows are often used in counseling observation rooms to allow students and faculty to observe a counseling session, but not distract the individuals involved in the counseling session.

Supervisee – a student enrolled in the Counselor Education program and supervised by professors in the Counselor Education program. The supervisee is learning to become a counselor.

Supervision – the process of supervising a student who is learning to become a counselor.

Supervisor – a professor in the Counselor Education program who supervises students learning to become counselors.

Video Commander – a video and audio switching system that allows audio and/or video signals to be transmitted from nearly any type of audio/video device to nearly any type of destination. The Video Commander also allows the signals to be transmitted to

multiple receiving points simultaneously. Appendix G contains detailed information about the Video Commander (Salandro, 2007c).

Summary

This study will explore the impact that the counselor training and clinical observation system at Indiana University of Pennsylvania has had on both teaching and learning. While the researcher has been involved in the design, development, and implementation of the observation system, and feels that the observation system has had a positive impact on both faculty and students, the effects of the system need to be studied in depth to determine if the system actually has had such an impact. No such study has been conducted regarding this new counselor training and clinical observation system.

Not only has the observation system been installed in the Counseling Department at IUP, but similar systems have also been installed in the IUP Educational and School Psychology Department and the IUP Special Education and Clinical Services Department, and other universities have also installed similar systems. The results of this study should assist other departments and institutions in determining if a system such as the IUP counselor training and clinical observation system should be considered for installation for their use.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

This qualitative study of a counselor training and clinical observation system in the Counseling Department at Indiana University of Pennsylvania will explore how it has impacted both learning and teaching at the university. This chapter will review the literature regarding various observation systems used for training counselors and the use of technology in observation systems, not just in counselor training, but in a variety of fields where observation is an essential part of training. Those fields include psychology, sociology, teacher education, nursing, speech-language pathology, and physical education as well as others. This literature review will also include a review of other methods of observation used in training. This chapter will also discuss the theoretical framework for this study and will review literature related to the theoretical framework.

Because the counselor training and clinical observation system in the Counseling Department at Indiana University of Pennsylvania incorporates very new cutting-edge technology and methodology, there is very limited research material that directly relates to this study. However, research exists that relates to other types of observation systems and technologies. Research also explores self-evaluation methodologies as well as instructor-led evaluation methodologies, and the use of reflective practices to enhance student learning.

Theoretical Framework

Howard Gardner's work with multiple intelligences will be used as a theoretical framework in this study in helping to describe and understand how the Landro Play

Analyzer has changed the many ways in which counselor training is being conducted, and how it has changed the multiple ways the counselor education students are learning.

The theoretical framework of this study is based on Howard Gardner's multiple intelligences theory (2006a). In Gardner's multiple intelligences theory, he explained how we each have certain strengths and weaknesses in our ability to learn and apply what we have learned. We all find that certain concepts may be easily learned, and yet other concepts are more difficult for us to learn. Howard Gardner described how there are multiple intelligences, and we each have certain intelligences in which we are more proficient. As Gardner (2006a) pointed out: "I believe that human cognitive competence is better described in terms of a set of abilities, talents, or mental skills, which I call intelligences. All normal individuals possess each of these skills to some extent; individuals differ in the degree or skill and in the nature of their combination" (p. 6).

Gardner recognized that we each have different cognitive strengths and skills. He (Gardner, 2006a) identified a set of intelligences including: musical intelligence, bodily-kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, and intrapersonal intelligence (pp. 8-18). Gardner later added naturalist intelligence to his list (p. 19) and has discussed other possible intelligences.

Gardner (2006a) explained how individuals truly understand ideas or methods when they can apply what they have learned to a new situation (p. 124). Gardner also pointed out in his discussion of understanding that, to determine if a student has a clear understanding, "it is clear that understandings can be apprehended and appreciated only if they are performed by a student. We cannot know whether a student understands a

principle of physics unless he or she can produce a relevant performance" (p. 127). As he continued to discuss concepts of understanding, he stressed that it is important, when teaching, to have the students demonstrate their understanding throughout the course, not just at the end (p. 127). Gardner also pointed out that:

> assessment ought to be an activity of mutual engagement, in which students take regular and increasing responsibility for reflecting on the nature of their performances and on the means for improving them (p. 127).

In the counseling education program at IUP, students are required throughout their courses to not only use the Landro Play Analyzer system to demonstrate the counseling skills and knowledge they are learning, but they also are required to reflect throughout their courses on what and how they have learned.

Gardner (2006a) discussed how we master concepts through repeated exposure to the material:

> One almost never achieves instant understanding. But it is a mistake to present the same content in the same way. Understanding is far more likely to be achieved if the student encounters the material in a variety of guises and contexts. And the best way to bring this about is to draw on all of the intelligences that are relevant to that topic in as many legitimate ways as possible (p. 60).

The Landro Play Analyzer allows students to learn concepts and techniques in a variety of ways, and for the professors to introduce concepts and techniques multiple ways.

Howard Garner (2006a) explained how concepts can be taught in multiple ways (he actually suggests that any concept worth teaching can be presented in at least seven

different ways he called entry points), and how some students may learn better with one way concepts are presented, other students may learn better in a different way (p. 139). Gardner presented his seven entry points as: a narrational entry point where the concept is presented as a story or narration; a logical entry point where the concept is presented through a structured argument; a quantitative entry point where the concept is presented through numerical information; a foundational entry point where the concept is presented in a philosophical manner; an aesthetic approach where the concept is presented in an artistic or sensory manner; an experiential approach where the concept is presented in a hands-on approach; and a collaborative approach where the concept is presented through group work (pp. 139-141). Gardner also pointed out that "as students explore other entry points, they can develop multiple perspectives, which are the best antidote to stereotypical thinking" (p. 139).

Counselor Education Training

For many years in Counselor Education, training has involved not only traditional classes and coursework, use of case studies, and observation of both simulated and real counseling sessions, but has also included practical hands-on opportunities for counselor education students to apply what they have learned in the classes by performing the role of counselor or client while being observed by other students and closely supervised by counseling faculty.

In a study by Kaplan, Rothrock and Culkin (1999) regarding the use of counseling observations in a graduate counseling program, the authors discussed the effectiveness of modeling of counseling skills by instructors and by students. The authors (Kaplan, et al., 1999) described the use of live counseling sessions as well as videotaped counseling

sessions as an integral part of their courses. They described how "videotaped segments of sessions can also be shown in class to illustrate specific techniques and approaches presented in lectures and textbooks" (p. 5). In this study of 108 counseling students at Alfred University, the focus was for faculty to model effective counseling skills in counseling sessions for their students to observe. Both the quantitative data results and the qualitative results of the study showed that the counseling students felt very positive about the use of the model sessions in their class, and felt that it enhanced the course.

In a journal article, Baggerly (2002) discussed the incorporation of various technologies such as video clips, videoconferencing, video recording and review of counseling sessions, and other technological enhancements into counselor education and training and the impact that technology can have for the program. As he stated: "overall pedagogical principles in counselor education call for active learning strategies to engage students in the developmental and collaborative processes. This pedagogical principle must be the guide when considering the use of technology." (p. 2).

The counselor training and clinical observation system in the Counseling Department at Indiana University of Pennsylvania utilizes the Landro Play Analyzer system for recording and analyzing counseling sessions. Both of the studies above discussed the use of recording methods, and the Landro system is a newer technology that can replace the systems they discussed in their studies, and the Landro system can provide even more capabilities, as will be shown in later chapters of this study.

Clinical Supervision

As was pointed out in an authoritative book about clinical supervision by Bernard and Goodyear (2004), "clinical supervision is an intervention in its own right" (p. 1) and

thus requires very specific preparation and training. They (Bernard & Goodyear, 2004) also said, when discussing the need for counselor trainees to practice their skills and knowledge, that "unless practice is accompanied by the systematic feedback and reflection that supervision provides, supervisees may gain no more than the illusion that they are developing professional expertise" (p. 5). Bernard and Goodyear also provided a particularly interesting insight that:

> It is possible for a supervisor to gain a clarity of perspective about counseling or therapy processes precisely because she or he is not one of the involved parties. The supervisor works from a vantage point that is not afforded the therapist, who is actually involved in the process (p. 7).

In defining supervision, Bernard and Goodyear (2004) provided the following important insight:

> Supervision is an intervention provided by a more senior member of a profession to a more junior member or members of that same profession. This relationship is evaluative, extends over time, and has the simultaneous purposes of enhancing the professional functioning of the more junior person(s), monitoring the quality of professional services offered to the clients that she, he, or they see, and serving as a gatekeeper for those who are to enter the particular profession (p. 8).

Martin (1986) explored the clinical supervision process through an in-depth case study of one supervisor and one supervisee in a counselor clinical setting. One of his research questions was "what changes appear to occur within and across selected supervisory sessions" (p. 4)? He used a variety of assessment instruments and questionnaires throughout the semester as the training progressed in eleven weekly

sessions. He also audio recorded all sessions. He used several pre and post tests so that he could measure outcomes and progress, and he had three individuals code the transcripts of the audio recordings. In Martin's (1986) study, he documented the progress of supervisees through each of the sessions, as well as any problems that occurred in the sessions. He summarized by saying that "the utilization of case study methodology and the employment of multiple measures allowed for a more complete understanding and appreciation of this supervision experience" (p. 82) by both the supervisor and the supervisee.

As will be shown later in this study, the Landro system provides a variety of tools and capabilities to assist the faculty and the students in clinical supervision, and provides the ability to easily review counseling sessions and code and reflect on those sessions.

Reflection in Counselor Training

Nearly all methods for training counselors include some level of reflection and use of reflective practices. McCarthy (2007) extensively explored the use of reflection and reflective practices in teacher education and other professional areas. As she pointed out (McCarthy, 2007), "researchers suggest that to enhance metacognition in the areas of analysis, synthesis, and evaluation, instructional strategies must be designed in which students take an active role in analyzing, synthesizing and evaluating their own learning" (p. 26).

Student reflections of counseling sessions that they observe, or in which they are participants, are crucial to student understanding of counseling concepts and how to apply those concepts when they are involved in counseling situations. Corcoran (2001), in her ethnographic study of counseling therapist development and training, discussed

how reflective processes and practices help students better understand themselves, develop better skills to use in counseling sessions, and develop more confidence as a counselor. As she indicated in her study, "the combination of a reflecting team format and a solution-focused supervision model was effective in teaching students to engage in reflective process" (p. iv). The Landro system provides the capability to analyze recorded counseling sessions, aiding in student reflection and understanding. As the studies above indicate, reflection is very important in the learning processes, so some of the interview questions of this study will explore how the Landro system aides the counseling students in reflective practices.

Anxiety in Counselor Training

An issue that showed up in several studies regarding counselor trainees was that of anxiety. In Johnson's dissertation (1985), he evaluated two different forms of observation methods. In one method, which he called self-observation, he described the process of the counselor trainees viewing videos of themselves in interviews with no editing of the videos (p. 22). In the other method, which he called self-modeling, he described the process in which the video was edited and only positive portions of the counselor trainee sessions were shown (p. 23). He then studied both methods using seventeen subjects randomly assigned to one of the two groups. He found that the self-modeling group who viewed only positive examples of their own interviewing behavior "manifested less physiological and experiential anxiety than those subjects who observed videotapes of both positive and negative examples of their own behavior" (p. 68).

In Costa's journal article about reducing anxiety when using live counseling supervision (Costa, 1994), she discussed how the anxiety for counselor trainees can

impact the learning process for them. She differentiated live counseling supervision sessions from video recorded sessions because of the immediate intervention that can be made by the supervisor. She pointed out how "supervisees may be apprehensive, anxious, or at least ambivalent, about being directly observed and instructed by a supervisor" (p. 1). Since the observation system at IUP has the capability to not only record counseling sessions for later use, but also provides the opportunity for faculty to watch sessions live and directly interact with the counselor trainees through an audio feedback device (bug-in-the-ear), many of the issues that Costa raises are directly applicable to the IUP system.

Costa also reported that "ambivalence about receiving feedback and evaluation fears are common sources of anxiety in the supervisory relationship" (p. 2). Costa (1994) developed a set of six guidelines to reduce supervisee anxiety in counselor training:

1. "Negotiate a clear training contract
2. Match method to supervisee development stage
3. Directly address anxiety and fear
4. Develop a collaborative supervisory attitude
5. Create a positive evaluation focus
6. Encourage independence" (pp. 3-7).

Costa indicated that her guidelines help in minimizing anxiety when utilizing live supervision techniques in counselor training. She suggested that the supervisors can, by using her six guidelines, anticipate problems and address them directly as they occur. As she pointed out, "supervisors who are aware of and understand supervisee anxiety are in a

position to challenge supervisees to grow and develop as counselors, while working with supervisee fears and concerns" (p. 7).

Anxiety issues are not limited to just counselor training, nor to just the supervisees, but may appear in other disciplines, and in some cases the anxiety and tension may be that of the supervisor. Carney and Miller (2008) note in their study of video annotation software in teacher training that "on the one hand, the supervisors felt a responsibility to mentor teaching candidates, but on the other hand, they were responsible for candidates' evaluation, and were gatekeepers for their entry into the teaching profession" (p. 18). The supervisors felt their own tension because they performed dual roles of both coach and evaluator.

Some types of technology may actually increase anxiety when used in a training environment. For example, Jumper (1998) discussed how some devices such as bug-in-the-ear systems (discussed later in this chapter) can sometimes produce more anxiety and, at other times, may help the trainees to be more relaxed in their sessions (p. 128).

All of the studies above indicate that anxiety is an important factor to be considered in counselor training. Several of the interview questions and one of the research questions that will be used in this study will explore student anxiety when using the Landro system from both the perspective of the students and the perspective of the faculty.

Counselor Education Observation Systems

Over the years, as technology has changed and faculty have embraced new ideas and new methodologies for training counselor education students, a variety of different methods have evolved for observing both simulated and real counseling sessions. Some

of the methods have involved using new teaching and training materials and information, while others have involved the incorporation of various types of technology to assist in teaching and training. Of course, the ability to record audio and video has had a direct impact on the ability to more critically analyze counseling sessions and techniques. More recently, computer systems have impacted the counselor education field by providing even more ways that audio and video information can be stored, processed, and analyzed.

One-Way Windows and Observation Rooms

Observation rooms, each equipped with one-way windows to allow students and faculty to observe counseling sessions, have been used for many years in counselor training. In many cases, the observation rooms also contained an audio system to allow communication between observers and the counselor trainees. Small groups of students learned by watching through the one-way windows as other counseling students worked with clients in the observation rooms, and a faculty member supervised, usually from behind the one-way windows (Johnson, 1985). Many universities still use this type of observation system for clinical training. While one-way windows for observation rooms can still be effective in counselor training and are fairly inexpensive to construct, they are more limited systems than some of the others that are explored in this chapter. The one-way windows provide the opportunity to observe the session in the observation room only from a single limited viewpoint, so some of the gestures or expressions may be missed. Usually only a few students and supervisors can observe well. There is no recording of the sessions (unless recording cameras are added to the rooms), so the counselor trainee does not have the opportunity to review the session afterward. Communication between the supervisor and counselor trainee may be limited unless a

communication system such as a bug-in-the-ear system is also incorporated into the design.

Bug-in-the-Ear

A bug-in-the-ear system is one in which the supervisor is able to directly communicate with the counselor trainee during a live training session. The counselor trainee normally wears a wireless or wired earpiece, and the supervisor uses a microphone to talk to the trainee. The supervisor usually is in an adjacent room with a one-way mirrored window, or another room where there is video and audio so the session can be observed and heard. The supervisor can then give direction or suggestions to the counselor trainee while the session is in progress.

In a doctoral dissertation study (Jumper, 1998) about the use of a bug-in-the-ear system at the University of North Dakota, Jumper evaluated the progress of twenty counselor trainees. Ten of the counseling students used a bug-in-the-ear system and ten of the students did not, while all twenty students were involved in live supervision training. In his study, he used six different feedback comments and suggestive cues to let the trainees know how they were doing and what, if anything, they needed to change as they were conducting their training sessions. He found that the immediate feedback that the trainees received with the use of the bug-in-the-ear system "directly enhanced trainees' increases in counseling self-efficacy" (p. 132).

Jumper (1998) did not find any significant differences between anxiety levels of the two groups of students. However, he noted that some other studies have indicated that the bug-in-the-ear systems sometimes produce more anxiety, while other studies have

indicated that the bug-in-the-ear systems sometimes help the trainees to be more relaxed in their sessions (p. 128).

Mosley's dissertation study (Mosley, 1982) evaluated the use of three different feedback conditions, each using a bug-in-the-ear system. He had thirty-six counselor trainees in his study. Each trainee was assigned to one of the three feedback conditions. The conditions he used were: simple reinforcement, directions or observations, and reinforcement and directions. He found that the use of the bug-in-the-ear system with feedback of directions or observations had a significantly higher rating than just simple reinforcement feedback because the feedback of directions or comments about specific observations by the observer to the counselor trainee provided more specific help to the trainee.

Bernard and Goodyear (2004) mentioned several major advantages to using a bug-in-the-ear system including the fact that the supervisor can suggest things to the supervisee without disrupting the counseling session. The supervisor's comments and instructions cannot be heard by the client, so the client is not aware which comments are coming from the supervisee and which are being relayed from the supervisor. The authors also mentioned several disadvantages of the bug-in-the-ear system. Since it is a fairly non-intrusive system, the supervisor may overuse it and distract the supervisee too much. Also, the supervisee may just repeat the supervisor's comments without really understanding the reason for the comments and suggestions. Bernard and Goodyear pointed out that the bug-in-the-ear system can also create awkward situations where the supervisee may stop and wait for comments, or need to interrupt the session to clearly hear the comments from the supervisor. They also mentioned that the client may feel

uncomfortable because of the secret comments from the supervisor to the supervisee (p. 258).

The Landro system in the Counseling Department at Indiana University of Pennsylvania has a bug-in-the-ear system, so the studies above directly relate to this research study. Several interview questions in this study will explore how the bug-in-the-ear system impacts the observation process and how effective the student participants and the faculty participants feel it assists them in supervision.

Text Display

Watson (2003) discussed the use of a "bug in the eye" system where a computer screen is placed so that the counselor trainee can see it, but the client cannot see the screen. The system works similarly to a teleprompter used by television news broadcasters. When the supervisor wants to communicate with the supervisee, they can type their comments or instructions on a computer keyboard and the text will be displayed for the supervisee to see. As he pointed out, the system may be less cumbersome than the bug-in-the-ear system, since the supervisee does not have to wear a headphone or earpiece, and the text will be visible on the screen as long as needed. On the other hand, typing and reading the messages may not be as fast and effective as using the bug-in-the-ear system. While the Landro system in this study does not include a text display device, it may be an enhancement to consider for future upgrades to the system.

Audio Recording Systems

Audio recording devices (tape recorders) have been used for many years to capture the voices of both counselors and clients in counseling sessions. Even today, with the ability to use much more sophisticated technology tools, audio recording devices are

still used, because they tend to be less intrusive than some of the other technologies. Sometimes, clients in a counseling session feel very intimidated by the use of video technology, and there may be a feeling of more anonymity with the use of audio recorders only. The recent development of small and inexpensive digital audio recording units has provided even more opportunities to record and process audio interviews. However, video recording provides a much richer opportunity to study both the counselor trainee and the client, since facial expressions and body language are important in understanding emotions and responses.

Bernard and Goodyear (2004) pointed out that "although client resistance to taping may be real and must be addressed in a sensitive and ethical manner, it is often not the client, but the trainee, who is experiencing the greatest amount of discomfort at the prospect of being scrutinized" (p. 214). In their discussion of the use of audiotape, they indicated that most clients are not very concerned about audio recording as long as they are assured of the confidentiality and use of the recording.

Bernard and Goodyear (2004) also discussed the use of written analysis of audio recordings in the counseling supervision process. They explained how supervisors often record a live session, listen to the recording after the session is over, and write an analysis for the student to review. The written analysis can also be kept as part of the documentation regarding student progress and performance.

While the Landro system in this study utilizes video recording, an important component of the system is the recording of the voices in counseling sessions, so the points made in the above studies are important to this study.

Video Recording Systems

In recent years, the observation rooms at many universities, including the Counseling Department at IUP, have been outfitted with video cameras for recording the counseling sessions. As Johnson (1985) pointed out, "video recordings have offered counselor trainees and their supervisors complete records of the verbal and nonverbal interactions which took place during the student's practicum sessions" (p. 1). Johnson also discussed how the video recordings provide a way for the students to see themselves in actual counseling sessions, so that they can understand more about how they appear and sound to others and how they interact with others. The video recordings can be replayed at a later time, and often the counseling student transcribes word-for-word the audio portion of the video recordings, and adds an analysis of what happened during the session. Then the video recording, the transcription, and the analysis can be reviewed by a faculty member (Bloom & Walz, 2005). In some cases, counseling students have been required to review only their own video recorded sessions, while in other cases they may have been required to review other sessions as well (Johnson, 1985). Sometimes the video recordings are used in classrooms to demonstrate good or poor techniques and situations that occurred in training sessions. These methods of observation using video recordings, audio recordings, and other similar techniques for clinical training are used in many universities throughout the world today (Bernard & Goodyear, 2004). The Landro system in this study provides for the recording of video and audio from the counseling sessions. However, the Landro system also provides additional features that enhance the recording and reviewing process, and those features will be discussed in depth in other chapters of this study.

Video Annotation Software Systems

In recent years, there have been many advances in computer software technology that provide the ability to easily capture video and add additional audio and/or other annotations to the video. A system that was used with video recordings to assist supervisors with assessment of supervisees was discussed by Carney and Miller (2008b). In their conference paper, they described a video annotation software program called Video Traces that they have been using for assessment of teaching performances of pre-service teaching candidates. The software allows supervisors, while observing their supervisees in real time, to record their own voice comments as well as use a computer mouse to indicate points of interest by recording the pointing to specific areas of the screen (p. 1). In their conference paper, Carney and Miller briefly discussed other video annotation programs that are also available, but focused on the Video Traces software that was used in their specific study. Carney and Miller used qualitative research methodologies in their study of video annotation software. In their summary, they said that the supervisors felt that video annotation software "helped them notice more and different aspects of teaching and learning during their observations, enabled them to provide in-the-moment feedback on classroom-based activity in ways not traditionally possible during 'live' classroom observations, and compare their own evaluative decision-making with a colleague's" (p. 27).

In another paper by Carney and Miller (2008a) regarding their same qualitative study of video annotation software systems, they pointed out that the system also helped supervisors "assess candidate thinking, aggregate evidence of teaching competency and thus make evaluative judgment on the basis of greater evidence, expose candidates to

multiple evaluative perspectives, and enhance collaboration and learning among clinical faculty" (p. 19).

In a dissertation by Sicotte (2003) about the use of computerized behavioral observations in psychology, he discussed the need for supervisors to collect and analyze direct behavior observation data in clinical environments and then provide appropriate feedback in a timely manner to the supervisee. He discussed the use of various observation and documentation methodologies including computerized methods and manual methods. Sicotte's quantitative study included 243 undergraduate students who were enrolled in psychology classes at the University of Rhode Island. He used the same ten minute video of a child demonstrating various misbehaviors, and then the undergraduate students used a rating system on a computer to indicate the type of behaviors they were observing and to what degree the behaviors were being exhibited. He then analyzed the results of the responses from the students to determine how accurate their observations were. In his summary, Sicotte said that his "study presents support for computerized and partial-interval techniques as methods that enhance greater observational accuracy than narrative and unstructured recording methods" (p. 139).

The Landro system in this study uses an annotation system that allows students to clip sections of a recording and then code the sections with information identifying the types of behaviors or issues observed in a similar way to the study by Carney and Miller (2008a). And, in ways similar to Sicotte (2003), the Landro system also allows for recorded sessions to be displayed in the classrooms and faculty offices, as well as making copies of the sessions on DVDs for demonstrating either positive or negative behaviors in counseling sessions.

Advanced Counselor Education Observation Systems

While the systems described in the sections above involve the use of various types of technology, most are just methods used to record video and/or audio of a counseling session, or devices to provide feedback to the supervisee. The more advanced systems described in the following sections provide the ability to not only record counseling sessions, but also provide the ability to segment and code the many events or responses that take place within a session.

Landro Play Analyzer Used in Football Coaching

At first glance, the coaching of football teams would appear to be very different from training students to become counselors, but there are some similarities. In both fields, video and audio data are captured, recorded, and analyzed. In a recent dissertation (Cole, 2006), the impact that the Landro Play Analyzer has had on football coaching was explored. Cole (2006) explained how the Landro Play Analyzer allows coaches to record and then code each play. The Landro Play Analyzer allows the coach to mark the beginning and ending of each play in a game or practice, then code each play to indicate the down it is, which team has the ball, the type of play that is run, and the results of that play. For example, a portion of a recording might be marked as the opponent third down with short yardage to go, where they passed the ball to the right end, and gained nine yards.

The football coach can then access specific types of plays almost instantaneously without having to waste time going forward and back through video tapes, thus saving time and eliminating distractions for coaches and players. For example, in a meeting with his receivers, the coach might show them all of the plays where their opponents gained

more than five yards, or all of the plays involving passes on second or third down. The Landro Play Analyzer allows specific video and audio segments to be selected and played in almost any order. Cole (2006) studied the use of the Landro Play Analyzer by high school football teams in the Western Pennsylvania Interscholastic Athletic League and how it was used as a tool to aid with decision making and play calling, as well as training. His (Cole, 2006) study found that the Landro Play Analyzer affected decisions related to formulating the weekly game plan the most. "Coaches used the technological capabilities of the system to display clear tendencies, and to also reveal hidden ones on opponents in order to make decisions in the development of a plan of attack for their teams" (p. 92). "The Landro system also enables coaches to improve their decision making by giving them the ability to closely analyze details that can assist them in improving their programs" (pp. 92-93).

Landro Play Analyzer Used in Counseling Observations

While the Landro Play Analyzer (LPA) (Salandro, 2007b) by IRIS Technologies was designed specifically for football teams, The IUP counseling team felt that the Landro Play Analyzer provided all of the features needed to record, edit and code events (see Appendix I for examples of the coding used at IUP in counseling), and provide quick access to the counseling training session material. The CEO of IRIS Technologies, Mr. Jerry Salandro, agreed that their computer programming staff could modify the software in the Landro Play Analyzer so that it would provide the ability to code counseling recordings with the types of events observed in counseling sessions, rather than just code football plays.

While the Landro Play Analyzer is the key component in the IUP technology assisted counseling observation system, the other major component that was required was a device that would allow the routing of video and audio data from any of the five observation rooms to a variety of destinations. The destinations include any of the Landro Play Analyzers, any of the classrooms used by the Counseling Department faculty, and/or any of the faculty offices. The system also needed the ability to transmit audio from faculty to the counselor trainees in the observation rooms using a bug-in-the-ear device. The Video Commander (Salandro, 2007c) by IRIS Technologies met all of these needs extremely well. The Video Commander is a video and audio switching system that allows audio and/or video signals to be transmitted from nearly any type of audio/video device to nearly any type of destination. The Video Commander also allows the signals to be transmitted to multiple receiving points simultaneously.

As discussed in a journal article (Dandeneau & Guth, 2005a) about the use of the Landro Play Analyzer system at IUP, the combination of Landro Play Analyzers and the Video Commander "allows us to have tapeless, timeless, nonlinear and developmental access to supervisees' individual and group sessions" (p. 27). Specifically, the system allows for:

- Customization of a theoretically based database that includes responses specific to course learning objectives.
- Client and counselor response coding (basic and advanced skills and interventions).
- Frame-by-frame performance analysis of supervisees' clinical skills.
- Response coding searches within and across sessions.

- Identification of common response patterns across groups of supervisees.
- Targeted individual supervision to enhance skills acquisition.
- Enhanced group supervision (p. 27).

The Counseling Department at IUP began using the clinical observation system in their classes starting in the fall of 2004. In a journal article in Counseling Today (Dandeneau & Guth, 2005a), the authors described how their students use the counselor training and clinical observation system:

> The student first routes the session for recording to the LPA. Then he/she conducts the session. With the session now recorded, the student is ready to analyze the session using the LPA.
>
> Analyzing the session includes clipping and coding the responses. For example, a student would select a response, then code it for focus (counselor or client), type (such as reflection or feelings), effectiveness (using a 1-5 rating system) and other relevant categories. After the codes are entered, the student prepares for presentation and/or supervision.
>
> In supervision, the supervisor and student can query the coded responses. For example, the supervisor may say, 'Show me responses that demonstrate your ability to respond to the client's affect.' The student then selects the appropriate search criteria and displays all the 'clips' that demonstrate this skill. This search process can be within a session or across numerous sessions. For presentations for group supervision, multiple students can be asked to show clips that illustrate certain skills. For example, they could be asked to show how they discuss confidentiality with their clients, and each student's clip can be shown for class

> feedback. This search, whether in supervision or in class, is effortless and takes less than five seconds! This tapeless, timeless, nonlinear and developmental access has revolutionized how we conceptualize our instruction and supervision (p. 27).

Landro Play Analyzer Used in Other Disciplines

The Landro Play Analyzer is being used in other disciplines besides football and counseling. As is shown in Appendix H, Landro Play Analyzer systems have been installed in speech pathology programs, educational psychology programs, and counseling psychology programs. In each case, the systems have been adapted to meet the specific recording and coding needs of the discipline. For example, in a recent thesis by Thomas (2009), the author described the comparison of the use of the Landro system and a more traditional VCR system for analyzing stuttering in subjects in a speech-language pathology program. The results of his study showed that "while the LPA does not improve identification of disfluencies or decrease analysis time, it enhances detection of secondary behaviors" (p. 20). Thomas went on to say that "improving identification of secondary behaviors may have a great impact on treatment outcomes for clients" (pp. 20-21). Thomas explained that "the results of this study indicate that the use of advanced technology in stuttering analysis may improve identification for both clinicians and clients" (p. 21).

IUP has now installed Landro Play Analyzer systems in their Speech Pathology program and their Educational and School Psychology program. The Student Counseling office, the Psychology department, and the Nursing department at IUP are considering the purchase of Landro Play Analyzer systems to enhance their programs as well.

Use of Transcriptions of Video and Audio Recordings

Bernard and Goodyear (2004) extensively discussed the use of transcripts of audio and video recordings in counselor training. They discussed how some supervisors have their supervisees transcribe and then submit the transcriptions of their audio or video recordings. They discussed how the supervisees can benefit from their creation of the transcripts. They found that the supervisors are often more apt to spot problems when looking at a transcript of a recording, rather than just listening to or watching recordings. They also found that the use of transcripts of recordings "allows the student greater opportunity to critique their own work (at this early stage) than taping alone might afford" (p. 217). Bernard and Goodyear (2004) also pointed out that students are more familiar with paper documents, where they can see the wording, rather than just listen to an audio recording.

Bernard and Goodyear (2004) summarized their discussion of the use of transcripts of counseling sessions by indicating that, while the use of transcripts of counseling sessions can be very valuable for both the supervisor and supervisee, it can also be very time consuming. They recommended that "perhaps an intermittent or abbreviated (i.e., transcription of a certain number of minutes of a session) use of this supervision method represents its optimal use" (p. 217).

In the past in the Counseling program at IUP, students were required to create and submit transcripts of some of their training sessions by transcribing the audio from a video tape recording. The Landro Play Analyzer system used in the counseling observation system at IUP still provides the ability to record both audio and video, so students can still transcribe sessions. However, one of the greatest strengths of the Landro

system is the ability to mark segments of the recorded session with special codes, indicating what happened during specific portions of the training session. This feature of the Landro system, and how it is being used in counselor training at IUP, will be described in detail in later chapters of this dissertation.

There are numerous hardware devices and software programs to assist with the process of transcribing audio recordings, including the audio portion of video recordings. HTH Engineering, Inc. is the manufacturer of the Start-Stop Universal Transcription System (HTH, 2008). The Start-Stop system includes computer software and a foot pedal device that connects through the USB interface of a computer. The system provides an easy way to transfer an audio recording (either digital or analog) into a computer, and then the user, by using the foot pedal while listening to the recording on computer speakers or a computer headset, can easily move through the recording, backing up when needed, and slowing down and speeding up the playback of the recording. The user can then type the sections of the audio recording that they want while listening to it. This type of transcription system is used by many businesses as well as individuals who need to capture the exact wording of an audio recording, and convert it to text within a word processing program.

Nuance Communications, Inc. has created a computer software program called Dragon Naturally Speaking (Nuance, 2008). Dragon Naturally Speaking is one of the most popular software programs for converting speech to text. The user can transfer the audio recording (either digital or analog) into their computer, and then let the Dragon Naturally Speaking software convert the audio sounds to text in a word processing program. The software works best if the user uses the training option of the software to

assist the software to better understand the words of the person speaking. At this time, programs like Dragon Naturally Speaking are not 100 percent accurate in correctly interpreting all words. When the training option of the software is used, it can dramatically improve the accuracy of the speech to text conversion. The accuracy also depends on the quality of the recording, the clarity of speech, and the speed at which the speaker talks. The accuracy is usually decreased if two or more people are speaking in the recording. Also, the software has no way of identifying which person is speaking. Therefore, after the software has converted the recording from speech to text, it is normally necessary to review and edit the transcript while listening to the recording, to assure that it is accurate and that the people speaking are correctly identified.

Technology for Distance Communication in Counselor Training

The counseling observation system that is the focus of this dissertation, the Landro Play Analyzer, was designed and implemented for the faculty to directly observe their counselor trainees. At IUP, the observation rooms, faculty offices, and classrooms are located in close proximity to each other, and faculty and students can meet face-to-face for discussions and training. However, the system has the potential for training student counselors at remote locations, in the same manner as those students being trained on campus. In fact, as this study began, the IUP Counseling Department purchased an additional counseling observation system and installed it at a branch campus location, approximately 35 miles from the main campus. Plans include connecting the two observation systems together via the Internet so that students and faculty at both locations can easily work together despite the distance. The technology and issues discussed in this section of the literature review directly relate to the IUP

counseling observation system. Many of the technologies used for distance communication are very similar to features found in the IUP counseling observation system or available to the IUP faculty and students through university computers.

In some educational institutions, direct video observations are being used for counselor training (Astramovich, et al., 2004). Some institutions are using video conferencing systems (Kaplan, et al., 1999), telephones, and webcams to supervise counseling sessions, especially when the counseling students are in the field (McCurdy, 2002; Wilson, 2001).

A dissertation by McCurdy (2002) explored various uses of technology for counselor supervision from a distance. McCurdy surveyed members of the Association for Counselor Education and Supervision (ACES) regarding their perceptions of the effectiveness of using various technologies for supervising counselor trainees in distant locations. One of the technology tools that he explored was the use of telephones to provide counseling services, especially to "stabilize clients in crises situations, identify client needs, and refer clients to appropriate services regardless of geographic distance" (p. 9). He also discussed how telephones could be used to supervise counselor supervisees at a distant location.

McCurdy (2002) also explored the use of teleconferencing systems (also called videoconferencing systems) in distance learning programs where counselor supervisees needed to be supervised at a distant location. The teleconferencing systems that he examined had the ability to transmit both video and audio between two or more locations. McCurdy explained how teleconferencing "can be used to bridge the distance between counselor educators, lecturers, and students and allow individuals to see and hear each

other in real time" (p. 10). He not only discussed the use of teleconferencing in counselor education, but also in the supervision of student teachers, career counseling, and in medical fields where collaboration is needed over a great distance. He also discussed the use of teleconferencing for distance counseling sessions. While the supervisors in McCurdy's study felt that face-to-face interaction and supervision was the most effective, they also felt that the use of telephones and the use of video conferencing systems were also effective in supervision (pp. 155-156).

Some teleconferencing systems are very expensive and also require that both locations have compatible teleconferencing systems. Many teleconferencing systems are not portable, but instead require users to go to a teleconferencing center. In recent years, the cost of teleconferencing systems has dropped dramatically and there are numerous portable systems available.

As McCurdy (2002) explained, new technology advances have, in many cases, replaced the expensive teleconferencing systems with much less expensive systems using computers and the Internet. Web cameras and microphones can be purchased for just a few dollars and then, connected to computers with Internet access, can perform most or all of the functions of the dedicated teleconferencing systems. He also discussed the use of text messages, internet chat, and email to perform various counseling supervision functions. The supervisors in McCurdy's study felt that the use of internet chat and email were not as effective as telephone and video conferencing systems (pp. 155-156).

McCurdy's (2002) study found that, while counselor training has traditionally involved a very close relationship between supervisor and supervisee involving a face-to-

face process, other communication methods can also be used to produce favorable results when there is a geographical distance between supervisor and supervisee.

The results of a study of the use of telephone, text-chat, and video for counseling consultation (Astramovich, et al., 2004) indicated that the use of a telephone "may be an effective alternative to face-to-face contact in a counselling consultation scenario" (p. 6). The study involved teachers consulting with parents regarding the progress of their children in school. The authors went on to say that "video streaming with telephone appears to enhance counselling consultation even without having capabilities to stream the parent image back to the counsellor" (p. 6). The study also showed that the addition of video streaming can enhance text-chat when consulting. Their study was summarized by saying that "these results suggest that the development of quality videoconferencing capabilities on the Internet may indeed improve the provision of distance-based counselling consultation" (p. 6). Two of the authors, along with another (Jones, Loe, & Astramovich, 2006), replicated much of their study two years later, and their conclusions supported their previous findings. In their later study, they did note that an advantage of using text-chat rather than telephone is that a log of the actual chat discussion can easily be captured and stored.

Watson (2003) discussed the use of email as a means for effective communication between supervisors and supervisees, especially when supervision is being performed from a distance. He explained how the use of e-mail can be used to help the supervisor and supervisee keep in contact much more, and also a copy of all email messages can be kept. Watson also briefly discussed potential problems with confidentiality of data being transmitted via email, since it may not be a secure means of communication, or

individuals may not take precautions to keep email messages secure that they send or receive.

Watson (2003) also discussed the use of text-chat for real-time communication between counselor supervisors and supervisees. He also described the use of chat rooms for collaboration, not just between the supervisor and a single supervisee, but how a chat room could be used by the supervisor and a group of supervisees, so that all of them can collaborate together in real-time. By using real-time communication tools, people are able to ask and answer questions immediately, rather than having to wait for some time for an answer when using email and other communication tools that do not provide the real-time opportunities.

The use of videoconferencing for distant supervision of and communication with counselor trainees was also explored by Watson (2003). His conclusions indicated that not only does videoconferencing provide for a more rich observation opportunity to be able to see and hear each other, but "the audio-visual format also provides supervisors with a better sense of the counselors' concerns. They are able to monitor for verbal and nonverbal behaviors and obtain a clearer understanding of the skills and capabilities of their student counselors" (p. 6).

Another study (Wilson, 2001) also explored the use of video conferencing in distance supervision for counselor education to determine if there is "a difference in the development, nature, and efficacy of the supervisory relationship between a counselor supervisor and a counselor supervisee if the supervision process is conducted either by video conferencing or in a face-to-face setting" (pp. 17-18). Wilson used qualitative methods as he studied two supervisors and four counselor trainees in face-to-face

supervision, and two supervisors and two counselor trainees using video conferencing for supervision. Wilson concluded that "the use of video conferencing in counselor supervision was found to be an effective means to deliver supervision services" (p. 184). Wilson did report that, in his study, there were some technical problems with the video conferencing that "resulted in degraded visual presentations over the system; therefore, participants could not often judge fine-grained facial expressions or body movements that would normally provide visual cues to feelings" (p. 184). He did go on to say that when the system worked well, "the technology 'disappeared' from the conscious thought of the participants. During those periods, there was no difference between the face-to-face and video conferencing modalities" (p. 184).

Simulations, Gaming, and Virtual Worlds for Counselor Training

Another technology enhancement, available through the Internet, which has become available in just the past few years, is an interactive three-dimensional virtual world. Numerous studies are currently in progress about the educational opportunities that virtual worlds such as Second Life (Linden Research, 2008) are able to provide. Second Life and other virtual worlds provide the opportunity for supervisors and supervisees to communicate and collaborate from anywhere in the world. Many of the features and advantages of using technology for distance education and training also are available with the use of virtual world technologies. A podcast (Lenze & Onyett, 2008) about the uses of Second Life in counseling and other educational fields described how counselors are not only using the virtual world for training, but are actually providing some types of counseling services through this modality as well.

In a journal article about the use of gaming and simulation technologies in counselor education (Greenidge & Daire, 2005), the authors discussed the use of role playing, as well as feedback, as important components in counselor education. The authors then discussed how gaming and simulation systems can be used to provide opportunities for role playing and feedback, as well as teaching and reinforcing counseling theories. "Ultimately, the use of gaming in counselor education programs will serve to enhance the work of counselor educators in the classroom and enhance client outcomes" (p. 14).

Another journal article about the use of computer simulations in counselor training (Casey, 1999) discussed the use of a program called Basic Counseling Responses: A multimedia Learning System for the Helping Professional. The author used the Basic Counseling Responses (BCR) in his counseling courses. The program contains a series of client session videos, a series of counseling responses, and a set of therapeutic intents and focuses. The students watch a series of segments, interact with the simulation software to select responses, and are given immediate feedback about their response decisions. Students also reflect on the exercises. As Casey indicated in his summary, "the reaction expressed by the class members to the BCR program was the most enthusiastic response the author has observed in his twelve years of counselor education and supervision career" (p. 4). He continued:

> The consensus of the class was that the product not only reflected realistic counseling sessions but that the act of identifying responses, intents, and focuses forced them to scrutinize each portion of the session much more carefully.

> Moreover, the exercises evoked provocative discussion regarding the counselor/client interaction (pp. 4-5).

Several of the counseling faculty at Indiana University of Pennsylvania have explored the use of Second Life and other gaming and simulation systems in counseling. Even though such systems do not directly tie in to the Landro system, the potential is there to capture both video and audio and import the files in to the Landro system for clipping and coding and analysis.

Applying Technology in Counselor Training and Supervision

In the previous sections of this chapter, many types of technologies applicable to counselor training and supervision have been explored. While counselor training and supervision is possible without the use of technology, the training can be greatly enhanced by using various types of technology. However, just using technology for technology's sake is not the answer. The appropriate types of technology must be selected to aid with training and supervision. As Baggerly (2002) pointed out in his summary:

> A variety of technological applications can promote pedagogical principles of active learning in counselor education as long as form, i.e., technology, follows function, i.e., pedagogical principles of active learning. Counselor educators can use technology to shift their roles from being the 'sage on the stage' to being the 'guide on the side;' a more fitting stance for collaborative and developmental approaches (p. 10).

In a journal article, Watson (2003) summarized issues related to using technology in counselor supervision when he explained that "supervisors need to be aware of the

many options afforded them through the use of computer-based technology" (p.8). However, he then pointed out that it is important to select the appropriate technology, based on the specific needs of the supervisees and availability of resources. Watson (2003) explained that the use of technology "must legitimately add to the supervision experience for the supervisee to be truly effective" (p.8).

Summary

In this chapter, many uses of technology in counselor supervision and various counselor supervision issues have been examined. The use of the Landro Play Analyzer in counselor training and clinical observation incorporates cutting-edge technology and methodology, so even though there is very limited research material that directly relates to the Landro Play Analyzer, numerous articles and research documents were found that related to other types of observation systems and technologies in counselor supervision.

Chapter three will describe the methodology used in this study to explore the impact that the IUP counselor training and clinical observation system, utilizing the Landro Play Analyzer, has had on both teaching and learning. The results of this study should assist other departments and institutions in determining if a system such as the IUP counselor training and clinical observation system should be considered for installation for their use.

CHAPTER 3

METHODOLOGY

Introduction

In this chapter, the methodology used in this study of the technology enhanced counselor training and clinical observation system that was installed in the Counseling Department at Indiana University of Pennsylvania are discussed. The population and site studied are described. The limitations of the study, the questions used in the interviews, the methods used for the development and refinement of the interview instruments, and the results of the review by the expert panel are detailed. The theoretical framework that guided this study is discussed.

As discussed in previous chapters of this study, during the spring of 2004, the Counseling Department at Indiana University of Pennsylvania installed a technology enhanced counselor training and clinical observation system. The system was designed to replace their traditional video tape and one-way window observation systems used for counselor training and clinical supervision (Dandeneau & Guth, 2005a).

The combination of Landro Play Analyzers and the Video Commander allows "tapeless, timeless, nonlinear and developmental access to supervisees' individual and group sessions" (Dandeneau & Guth, 2005a). As discussed in chapter 1 of this dissertation, the system allows for a customized database (see Appendix I for examples of coding for the database) with responses that are specific to individual courses, coding of both client and counselor responses, detailed analysis of video and audio recordings, ability to search for specific response coding, identification of common patterns of

responses, and many other features that enhance the supervision in both group and individual training sessions (Dandeneau & Guth, 2005a).

Statement of the Problem

The implementation of a technology assisted counselor training and clinical observation system by the faculty in the IUP Counseling Department has modified the way in which the faculty members teach and the students learn. This study will explore the ways in which the faculty members have modified their teaching to incorporate the new observation system into the curriculum, and how student learning has been impacted.

Theoretical Framework of this Study

Howard Gardner's work with multiple intelligences was used as a theoretical framework in this study in helping to describe and understand how the Landro Play Analyzer has changed the many ways in which counselor training is being taught, and how it has changed the multiple ways the counselor education students are learning.

As discussed in previous chapters of this dissertation, the Landro Play Analyzer system used by the participants in this study allows students to learn in many different ways, and for the professors to teach in many different ways. We all find that certain concepts may be easily learned, and yet other concepts are more difficult for us to learn. Howard Gardner described in his multiple intelligences theory how we each have certain intelligences in which we are more proficient.

Gardner recognized that we each have different cognitive strengths and skills. He (Gardner, 2006a) identified a set of intelligences including: musical intelligence, bodily-kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, and intrapersonal intelligence (pp. 8-18). Gardner

later added naturalist intelligence to his list (p. 19) and discussed other possible intelligences.

Gardner (2006a) also discussed how we master concepts through repeated exposure to the material:

> One almost never achieves instant understanding. But it is a mistake to present the same content in the same way. Understanding is far more likely to be achieved if the student encounters the material in a variety of guises and contexts. And the best way to bring this about is to draw on all of the intelligences that are relevant to that topic in as many legitimate ways as possible (p. 60).

Gardner (2006a) stressed that "important materials can be taught in many ways, thereby activating a range of intelligences and consolidating learning" (p. 84). The Landro Play Analyzer allows students to learn concepts and techniques in a variety of ways, and for the professors to introduce concepts and techniques in multiple ways.

Research Questions

The specific research questions and assumptions that guided this study are:

1. What impact has the IUP counselor training and clinical observation system had on teaching and learning? This study assumes the observation system has had a significant impact on both teaching and learning, and will explore what that impact has been.
2. How have the IUP Counseling faculty changed the way they teach their students because of the IUP counselor training and clinical observation system? This study assumes the faculty members have changed the way

they teach because of the observation system, and will explore what those changes have been and why.

3. How has the way in which Counseling students learn their counseling skills changed because of the IUP counselor training and clinical observation system? This study assumes the way in which the students learn has changed because of the observation system, and will explore what those changes have been.

4. How does the IUP counselor training and clinical observation system provide for student reflection and feedback as they progress through their program of study? This study assumes that the observation system provides for student reflection and feedback, and will explore how that reflection and feedback works.

5. How does the IUP counselor training and clinical observation system reduce or increase the anxiety of students because their counseling sessions are recorded? This study assumes that the observation system has reduced the anxiety of students because the sessions are recorded rather than observed live by their professor. This study will explore anxiety issues of students using the observation system.

Appendix D contains the interview questions used with Counseling Education faculty in this study. Appendix E contains the interview questions for currently enrolled Counseling graduate students.

The following matrices show how the interview questions relate to the research questions (this mapping is described later in this chapter regarding the expert panel):

Table 1

Relationship of Interview Questions to Research Questions – Faculty (see Appendix D)

Research Question	Interview Questions
1	3, 4, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 31, 32, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 53, 54, 55, 56, 57, 58
2	7, 8, 9, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 30, 34, 35, 36, 42, 43, 47, 50, 55, 56, 58
3	12, 13, 14, 23, 31, 32, 33, 35, 37, 44, 46, 48, 49, 55, 56, 58
4	32, 35, 51, 58
5	33, 49, 52, 58

Table 2

Relationship of Interview Questions to Research Questions – Current Students (see Appendix E)

Research Question	Interview Questions
1	11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 27, 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 42, 43, 44, 45, 46
2	41
3	14, 16, 17, 18, 19, 25, 27, 28, 29, 31, 32, 33, 34, 35, 40, 41, 42, 43, 44, 45, 46
4	11, 12, 13, 15, 22, 23, 25, 26, 29, 31, 32, 33, 34, 35, 36, 40, 41, 42, 43, 44, 45, 46
5	22, 23, 24, 25, 26, 28, 32, 33, 34, 35, 36, 37, 38, 39, 42, 46

The last question in each set of interview questions asked "what additional comments do you have regarding the Landro system." The responses to that question were evaluated to determine the appropriate research question(s) to which to apply the responses.

Research Design

This study focused on the impact on teaching and learning that the IUP counselor training and clinical observation system affords, but did not focus specifically on issues regarding the training of counselors or on specific issues related to the field of counseling.

This qualitative research was an evaluative case study. Through interviews, information was collected from those faculty and students using this new system. The interviews were used to gather information from those faculty and students who used previous methods. The results of the interviews were analyzed using qualitative research tools including NVivo software (Bloomberg & Volpe, 2009) to try to determine if the new system had a significant impact or not. The identity of all participants were reported anonymously by assigning each participant a code or pseudonyms rather than using their real names or positions. The analysis of the interviews is presented in chapter 4 and conclusions are presented in chapter 5.

Seven of the faculty members in the IUP Counseling Department who are using the counselor training and clinical observation system were interviewed to determine what changes they have made to their teaching methods because of the system, what changes in the curriculum they have made, and why they made those curriculum changes. They were asked if they feel that the curriculum changes have been effective. They were

also questioned about their perceptions of the effectiveness of the system for teaching their counseling students, and how they felt it has changed the way their students are learning. Some of the interview questions were used to gather additional data from the faculty such as the amount of training time needed by their students to use the system, the number of counseling sessions each student is required to perform with the system, the amount of increase or decrease of time spent by students with the new system versus the traditional video tapes and transcripts used in the past, the amount of time needed by faculty to review student sessions, and other comparative data that helped in understanding the impact on instruction. The identity of all participants is reported anonymously in the analysis and conclusions of this study by assigning each participant a code or fictitious name rather than using their real names or positions.

Five currently enrolled students in the Counselor Education program that have had at least one class that utilized the Landro Play Analyzer system were interviewed to determine their perceptions of the effectiveness of the training using the observation system. Some of the interview questions were used to gather additional data such as the amount of training time needed by the students to feel comfortable with using the system, the number of counseling sessions each student uses the system, the amount of time necessary to mark and code the counseling sessions, and other comparative data that helped in understanding the impact on learning. The identity of all participants is reported anonymously in the analysis and conclusions of this study by assigning each participant a code or fictitious name rather than using their real names or positions.

Description of Research Site and Participants

Seven of the faculty in the IUP Counseling Department who are using the IUP counselor training and clinical observation system were interviewed, and five currently enrolled students in the IUP Counselor Education program who are using the counselor training and clinical observation system were selected to be interviewed. A request for volunteers to participate in a qualitative study related to counselor training clinical observations was sent to all Counseling Department faculty members who have utilized the Landro system in one or more classes (the chair of the Counseling Department identified those faculty members who have utilized the Landro Play Analyzer system). A request for volunteers to participate in a qualitative study related to counselor training clinical observations was sent to all graduate students currently enrolled in the IUP Counselor Education program that have completed at least one class that utilized the Landro Play Analyzer system. Seven faculty and five currently enrolled graduate students were selected from the two groups of volunteers.

All interviews of participants were conducted at IUP in a setting appropriate and mutually agreeable to conduct the interview. The setting was quiet and conducive to a confidential interview.

Instruments Used

Appendix D contains the interview questions used with Counseling Education faculty in this study. Appendix E contains the interview questions for currently enrolled Counseling students.

Several other dissertations were reviewed that used interview questions in studying observation methods and systems in Counselor Education students. In “The

Application of Technology to Counselor Education: Video Conferencing in Distance Supervision" (Wilson, 2001), the researcher developed three sets of interview questions, one for each of two groups of students being observed using different observation methods, and one for the observers of the students. In the second dissertation, "The Perceptions of Supervising Counselors Regarding Alternative Methods of Communication" (McCurdy, 2002), a single set of interview questions was developed for supervising counselors. After review of the two dissertations, this researcher developed two sets of interview questions to directly address specific issues of the study.

This study used the appropriate set of interview questions when meeting individually with each participant in the two study groups. The researcher asked the interview questions and any appropriate follow-up questions for clarification. To reduce the chance of misunderstanding of interview questions, each interview question was displayed on the screen of a laptop computer so the participant not only heard the question from the researcher, but also was able to see the question as it was asked. All of the interview sessions were audio recorded and then transcribed for later reference and study. When necessary, a follow-up interview was conducted with participants after the initial interview to clarify any ambiguities that appeared as the transcriptions were analyzed. The identity of all participants was reported anonymously in the analysis and conclusions of this study by assigning a fictitious name or code to each participant.

This researcher is employed as the Assistant Dean for Technology in the College of Education and Educational Technology at Indiana University of Pennsylvania. While he works with the faculty and students in the Counseling Department and other departments within the College of Education and Educational Technology, he has no

supervisory role or authority over them. His role is to assist the faculty, staff and students within the College of Education and Educational Technology with issues related to computer hardware and software and other types of technology. While some people may feel this is a dual role that might have impact on the study, it is common in qualitative research for the researcher to be closely involved with the research participants, and the researcher did all he could to assure that his relationship with the participants did not influence their responses nor his conclusions.

Validity and Reliability

Wilson's dissertation that was used for examples of interview questions for this study did not indicate that he piloted his interview instruments. He did, however, use triangulation and other means to assure validity and reliability. Wilson used triangulation in his study by having his subjects keep a weekly journal, and by conducting two recorded interviews of each of his subjects five weeks apart. He also collected journals and conducted interviews with two sets of participants (face-to-face supervisees and video conferencing supervisees) (Wilson, 2001).

McCurdy's dissertation was also used for examples of interview questions for this study. He (McCurdy, 2002) modified a standard instrument, the CERS-MMV (Counselor Evaluation Rating Scale-Multiple Modalities Version) that "seemed to have face validity" (p. 112) , and then conducted a pilot study using twenty individuals including professional supervising counselors, counselor educators and doctoral students to further evaluate the reliability of the CERS-MMV for the study. The results of the pilot produced a Cronbach's coefficient alpha with a reliability coefficient of .97. The pilot also identified problems with the administration of the instrument (McCurdy, 2002). Some of

his subjects were confused by the instructions, some subjects did not use the scoring method, but instead just put check marks by the questions, and some of the subjects were frustrated with how he had reversed the scoring scales in several of the questions. McCurdy improved the instructions and modified the scoring scales before using the CERS-MMV with the actual subjects of his study.

Since there may be bias because of the use of volunteers, and since this study utilized volunteers from currently enrolled Counseling students, this may have introduced some bias in the study, however the researcher attempted to eliminate bias wherever possible by creating an appropriate set of interview questions that not only asked for specific responses, but also asked why the participants felt the way they did about the issue addressed in the questions.

The interview questions for this study were reviewed by an expert panel of faculty and graduate students before using them in the actual research. This researcher conducted interviews of two separate groups of subjects, and conducted follow-up interviews when needed.

Review Procedures for Interview Questions

An expert panel made up of three of the faculty in the Educational and School Psychology Department at IUP and two graduate students of the Educational and School Psychology program reviewed both sets of questions for content validity. The decision to use faculty from the Educational and School Psychology Department as part of the expert panel was made because they are in a similar discipline to the Counseling Department, they perform clinical research similar to that done by the Counseling Department, and most of their faculty are extremely experienced with developing and administering

interview and survey questions, as well as the assessment of the results. The faculty members selected for the expert panel have each worked extensively with the Landro system in their department. The faculty from the Educational and School Psychology Department were selected for an expert panel, rather than faculty from the Counseling Department, since some of the faculty in the Counseling Department were part of the actual study. The two Educational and School Psychology graduate students were not part of the study group for this research project, but are typical of the student population that was studied. Both graduate students have used the Landro system extensively in their program.

In addition to reviewing the interview questions, the faculty members and the graduate students also went through a mock interview process, simulating the interview process used in the actual research study, but no responses to the questions were recorded. None of the expert panel members were identified in the results of this study, nor were any of their responses from the mock interview process used in this study.

Based on the results of the expert panel feedback and any issues that arose with the mock interviews, revisions to the questions were made, and then resubmitted to the five members of the expert panel for a final review before using them in the actual study. While the members of the expert panel were making their final review of the interview questions, they were also asked to map each of the interview questions to the five research questions, and also to rank the relevance of each interview question to the overall study. The mapping of the interview questions by the expert panel assisted in the analysis of interview responses, and the ranking of the relevance of each interview

question provided a final determination of any questions to be eliminated from the interviews.

Expert Panel Review Results

The three faculty from the IUP Educational and School Psychology Department reviewed both sets of questions, those designed for interviews with Counseling faculty, and those designed for interviews with Counseling students. They suggested the addition of seven new questions, suggested deletion of two questions, and suggested modifications to eight of the questions to help clarify and simplify them. The two graduate students from the Educational and School Psychology program also reviewed both sets of questions, and they suggested four new questions, suggested deletion of three questions, and suggested modifications to six of the questions to help clarify them. After all of the questions were revised, all five members of the expert panel reviewed the changes and did not suggest further changes.

All five expert panel members felt that the mock interviews went well and had no suggestions for improvement.

The mapping by the expert panel of the interview questions to the research questions (see Tables 1 and 2 earlier in this chapter) provided the researcher with information that was used to assist in the evaluation of the interview responses. When the results of each of the individual expert panel members' mapping of interview questions to the research questions was completed, their mapping suggestions were placed into an Excel worksheet. All five sets of mapping suggestions were then analyzed, and when at least three of the expert panel member suggestions matched for the mapping of an interview question to a research question, the researcher accepted that mapping and

entered the mapping into tables 1 and 2 to assist with the later evaluation of interview responses to be discussed in chapter 4 and chapter 5 of this study.

The ranking by the expert panel of the relevance of each interview question to the overall research study indicated that all of the questions, after suggested modifications from the expert panel had been made, should be included in the interviews.

Data Analysis

The results of the interviews with the faculty and students of the Counselor Education department at Indiana University of Pennsylvania were analyzed. NVivo 9 software (QSR International, 2010) was used to assist with the analysis of the qualitative data that was collected through the use of interviews of the two groups of participants described above. NVivo 9 is the most recent update of a qualitative research software system formerly named NUD*IST (QSR International, 2007). The audio recordings of each of the interviews were transcribed, and then NVivo 9 was used to code and categorize the responses. NVivo 9 was used to assist in the identification of patterns of responses, and the grouping of responses into nodes. Nodes are "like virtual filing boxes that allow you to see all information on a theme summarized together" (Bloomberg & Volpe, 2009). The software allows the nodes to be organized into hierarchies for analysis and ease of access to the data. NVivo provides the ability to identify the words and phrases most frequently used within the information being analyzed. The NVivo system allows the researcher to discover even subtle trends and patterns in the interview transcripts, and lets the researcher compare various factors within the data. The NVivo software can also provide a graphical display of data to assist in identifying and explaining results.

Summary

The observation system that was designed and installed in the Counseling department at IUP was very expensive and time consuming to implement. Before more departments and institutions decide to purchase such a system, they need to have more information about how the system will impact their programs.

This qualitative study of the impact the IUP counselor training and clinical observation system has had on teaching and learning should be very useful as other universities explore ways to enhance their counselor training programs. This study should also help the IUP Counseling department continue to improve their observation system. In addition, other training and clinical programs at IUP and other universities should be able to use the results of this study to determine if a training and clinical observation system similar to this one would be appropriate for their programs.

CHAPTER 4

DATA AND ANALYSIS

Introduction

The implementation of a technology assisted counselor training and clinical observation system by the faculty in the IUP Counseling Department modified the way in which the faculty members teach and the students learn. This qualitative study explores the ways in which the faculty members modified their teaching to incorporate the new observation system into the curriculum and how student learning has been changed.

In this chapter, the interviews are discussed, as well as the analysis of the data collected in the interviews. The 58 questions in the 7 faculty interviews and the 46 questions in the 5 graduate student interviews were analyzed using the NVivo 9 (QSR International, 2010) software.

Research Tools

The transcriptions of the audio recordings of the interviews were imported into NVivo, and then the researcher used the software to assist with coding and categorizing the responses. The NVivo software assisted in the identification of patterns of responses, and the grouping of responses into nodes. Nodes are "like virtual filing boxes that allow you to see all information on a theme summarized together" (Bloomberg & Volpe, 2009). Using the software allowed the nodes to be organized into hierarchies for analysis and ease of access to the data. NVivo provided the ability to identify the words and phrases most frequently used within the information being analyzed. By means of the NVivo software, the researcher discovered subtle trends and patterns in the interview transcripts, and was able to compare various factors within the data.

The NVivo software assisted the researcher in relating the interview responses back to the research questions as well as the theoretical framework of the study. As was discussed in chapter 3 of this study, the mapping of interview questions to the research questions by the expert panel (see table 1 and table 2 in chapter 3) greatly assisted the researcher in utilizing NVivo to relate the responses to the research questions. Each interview question was established as a node in NVivo, and each research question was established as a node. The researcher was able to then link the interview responses to the research question nodes. Using the NVivo software, the researcher compared the responses from the student participants with the responses from the faculty participants where there were similar or same interview questions asked. Once the links were created, the researcher explored the trends and patterns which emerged. The software assisted the researcher in analyzing and understanding the responses more thoroughly as well as clarifying their relationship to the study.

Overview of the Study Site

The study site was the Counseling Education Department at Indiana University of Pennsylvania, a medium sized state university. During the spring of 2004, the Counseling Department at Indiana University of Pennsylvania installed a technology enhanced counselor training and clinical observation system. The system was designed to replace their traditional video tape and one-way window observation systems used for counselor training and clinical supervision (Dandeneau & Guth, 2005a). The system, manufactured by IRIS Technologies (Salandro, 2007a), is called the Landro Play Analyzer (LPA) (Salandro, 2007b), and was originally designed to record football practices and games for use in training of the football players. The system allowed for the marking and coding of

each football play to indicate the down, the type of play, and the play results. The IUP Counseling faculty selected the Landro Play Analyzer because it provided all of the features needed to record, edit and mark events, and provided quick access to the counseling training session material. The software in the Landro Play Analyzer was modified so that it would provide the ability to code counseling recordings with the types of events observed in counseling sessions, rather than just record and code football plays for which it was originally designed (see Appendix I for examples of coding).

The other major component of the counselor training and clinical observation system is the Video Commander (Salandro, 2007c) also produced by IRIS Technologies. The Video Commander is a video and audio switching system which allows audio and/or video signals to be transmitted from nearly any type of audio/video device to nearly any type of destination. The Video Commander also allows the signals to be transmitted to multiple receiving points simultaneously.

The IUP counselor training and clinical observation system includes five Landro Play Analyzers (LPA), a Video Commander, ten video cameras (two in each of the five observation rooms), five microphones, five VCRs, five DVD recorders, and software and hardware for faculty computers to access the system. Dedicated network cabling and a network hub were also installed to provide dedicated and secure connectivity between all of the components and the Video Commander. Each faculty office computer was connected to the dedicated network using a second network interface card (NIC) in each computer enabling the faculty computers also to access the regular university network as well as the counselor training and clinical observation system.

The five Landro Play Analyzers, Video Commander, the five VCRs, the five DVD recorders, a computer connected to the Video Commander, the network hub, and five student editing stations are all housed in a control and editing room. The five observation rooms down the hall are each outfitted with a microphone and two cameras, and also include chairs and tables and other furniture for the student counselor trainees and clients.

Participants in the Study

The plan, as discussed in the Methodology chapter, envisioned interviewing five faculty from within the Counseling Education Department of the university, and five graduate students currently enrolled in the program, all of whom have experience using the Landro system. However, since there were seven faculty volunteers and five graduate student volunteers, the researcher, after checking with his dissertation advisor, decided to interview all twelve of the volunteers. As detailed in Chapter 3, the researcher used two separate sets of interview questions for the two groups of participants (see Appendix D for the 58 interview questions for the faculty and Appendix E for the 46 interview questions for the graduate students).

To provide for confidentiality and anonymity of the actual participants, the researcher assigned pseudonyms to identify each of them, rather than using their real names. The faculty pseudonyms are: Dr. Adams, Dr. Baker, Dr. Clark, Dr. Davis, Dr. Evans, Dr. Fisher and Dr. Given. The graduate student pseudonyms are: Jesse, Kendall, Logan, Morgan and Nolan. Note that gender neutral pseudonyms were chosen, since this study did not consider gender in any of the interview questions or in the research questions; however, all of the faculty participants were female.

Faculty Participants

The seven faculty participants in the study group range in age from 31 to 59 years old. Five of the faculty participants have Ph.D. degrees in Counselor Education, while Dr. Davis has a Ph.D. in Counseling Psychology and Dr. Clark has a Ph.D. in Rehabilitation Counseling. Dr. Fisher, has taught Counseling Education for only two years. Of the other six faculty members, two of them have taught for five years, one has taught for seven years, and three have taught for ten or more years. All but Dr. Given have spent the majority of their university teaching career at IUP.

All of the faculty have worked with a variety of counseling agencies and have counseling experiences in such areas as alternative treatment centers, group homes, prisons, private practices, community agencies, mental health agencies, and K-12 school counseling. Dr. Adams worked for approximately seven years with at risk youth and alternative treatment programs, and in residential facilities primarily with at risk and disturbed adolescents. Dr. Baker worked for about five years with families and children impacted by sexual abuse and did a lot of play therapy and family counseling. Dr. Clark worked as a licensed psychologist in private practice for about nineteen years. Dr. Davis worked for a year with a variety of community agencies and settings, a year in developmental disabilities, and in private practice for three years. Dr. Evans worked for several years at a community mental health agency. Dr. Fisher worked as a school counselor for three years. Dr. Given worked as a psycho-therapist for about three years, and worked more than two years with children with disabilities.

When asked about their level of technology skills, Drs. Adams, Baker, Davis and Evans rated themselves highest (see table 3) on a scale of zero to ten, with zero indicating

none and ten indicating excellent. And, when asked about their level of technology knowledge, Drs. Adams, Baker and Evans rated themselves highest (see table 3) using the same type of scale. When asked why they rated themselves as they did on technology skills and on technology knowledge, those who rated themselves highest indicated that they are comfortable with using technology and learning new uses of technology. They also indicated that they continually attempt to stay current with technology, and recognize technology is always growing and changing. Those who rated themselves lower indicated that they use technology as needed but are not comfortable with technology, and two indicated anxiety about technology. Several faculty participants indicated they do not have a lot of formal technology training, but tend to gain technology skills and knowledge with hands on experiences. Dr. Fisher said "I am constantly surprised when I hear about a new technology, and then it makes me wonder how much I really know about it." When asked to compare themselves to their peers regarding technology knowledge and skills, Drs. Adams and Baker rated themselves higher than their peers, Dr. Given indicated knowing less, and the rest rated themselves as about the same as their peers.

Table 3

Technology Skills and Technology Knowledge of Faculty Participants

	Faculty Participant Ratings							Mean
	Adams	Baker	Clark	Davis	Evans	Fisher	Given	
Skill	7.5	6.5	4	6	7	5	4	5.7
Knowledge	8.5	6.5	4	5	5.5	5	4	5.5

While all seven of the faculty participants have taught using the IUP counselor training and clinical observation system, Drs. Fisher and Given have each only used it for one semester. Throughout the interview with Dr. Fisher, she frequently mentioned her lack of experience with using the Landro system, and her low technology skills, and tended to rate the Landro system lower than her colleagues in many of the interview questions. All of the other faculty participants used the system for at least five semesters. Only Dr. Adams and Dr. Davis taught counselor education courses at IUP prior to the implementation of the counselor training and clinical observation system. All of the faculty participants except Dr. Fisher taught counselor education courses at other institutions where a system similar to the Landro system was not available.

Graduate Student Participants

The five graduate students in the study group range in age from 24 to 56 years old, with three of them in their mid twenties. Two of the students received their bachelors degree from IUP. Jesse, Morgan and Nolan have their bachelors degree in Psychology and Morgan also has a bachelors degree in Sociology. Kendall has a bachelors degree in Communications with an emphasis in Journalism, and Logan has a bachelors degree in Education with a concentration in drug and alcohol addiction. All five students are in their second year of courses in the counseling education program at Indiana University of Pennsylvania. Jesse is pursuing a master's degree in Secondary School Counseling, while the other four are pursuing their degrees in Community Counseling. Morgan and Nolan are specializing in the Adolescent Adult track within the Community Counseling program.

All of the student participants in this study except Morgan had other counseling experiences. Jesse worked as a counselor with a youth group and also worked as a drug and youth counselor for a human services organization. Kendall had experiences as a counseling client and Logan had experiences in a 12 step recovery fellowship. Nolan worked as a therapeutic support staff member for children with autism and also worked as a summer camp counselor.

When asked about their level of technology skills, Kendall, Morgan and Nolan rated themselves highest (see table 4) on a scale of zero to ten, with zero indicating none and ten indicating excellent. When asked about their level of technology knowledge, Kendall and Nolan rated themselves highest (see table 4) using the same type of scale.

When asked why they rated themselves as they did on technology skills and on technology knowledge, those who rated themselves highest indicated very similar reasons as the faculty participants, stating they are comfortable with using technology and learning new uses of technology. Morgan pointed out that "it takes me awhile to learn technology, but once I learn it, I feel I am very proficient in it and using it."

Those who rated themselves lower indicated that they are not comfortable with technology, and two indicated anxiety about technology. Several of the students indicated that they only had to use very basic features of programs such as Word, Excel and PowerPoint in their undergraduate programs, and need to learn more.

When asked to compare themselves to their peers in the counseling program regarding technology knowledge and skills, Jesse and Kendall rated themselves as about the same as their peers, but Logan, Morgan and Nolan rated themselves lower than their peers.

Table 4

Technology Skills and Technology Knowledge of Student Participants

	Graduate Student Participant Ratings					Mean
	Jesse	Kendall	Logan	Morgan	Nolan	
Skill	5	6	5	7	6.5	5.9
Knowledge	4	5	4	4	4.5	4.3

All five of the graduate student participants used the IUP counselor training and clinical observation system in their classes. All of the students except Logan indicated that they used the training and observation system in twenty to thirty sessions. Logan indicated only using the system for six or seven sessions to date.

Themes and Trends Found in the Study

Various themes and trends were found in the interviews of the faculty participants and the graduate student participants. The next sections of this chapter discuss the comments made by the participants regarding the use of the counselor training and observation system and how it has impacted the way in which faculty members are teaching and students are learning.

Course and Syllabi Changes

With the implementation of the counselor training and observation system (the Landro system), all of the faculty in the study group changed the way they teach their classes and all made changes to their course syllabi. Some made changes, switching from having students make video tape recordings and then transcribing those recordings, to

now using the Landro system as the recording medium. Other faculty changed their class assignments and the entire way they had students review and code their sessions with clients.

Dr. Adams gave a detailed explanation of how the use of the Landro system has dramatically changed courses she teaches:

> In terms of the course syllabi, there have been multiple generations in my adaptation of using the Landro system and understanding how to use it to teach in a different sort of way. One of the things you would notice on my pre-Landro syllabi would have been having students try to pick out small segments of their video so I could watch. And, so they would do a paper around that, or they would have to tape and transcribe a good portion of their sessions. They would all submit their tapes and I would spend weekends here, just watching tapes and going through tapes, and only able to listen to about 10 minutes of each of the tapes submitted. So how I have adapted my syllabi is that I now use it in a much more targeted sort of way.

On the other hand, Dr. Adams indicated "in my group practicum, I am not using it for micro-skills, so I am not having them look and clip everything that they do." And Dr. Adams also indicated "in group, I am doing more of a utilization of it for key events in the group process, and helping to teach process." Additionally, Dr. Adams has the students create recordings of their skills as they are doing summative assignments. Dr. Adams indicated "I can actually have the students use the system in a much more purposeful way to target their learning." She went on to say "for me, the ability to be able

to structure what I want them to actually bring in to supervision and what I want them to clip has changed how I think about what I want them to do as part of their learning."

When asked about specific assignment changes because of the availability of the Landro system, Dr. Adams said she can "now be much more purposeful in terms of the skills I want them to look at." She said she can be "like the one-room school house teacher, where I can customize what I am doing with individual students, based on what I am seeing as part of their supervision." She also indicated she is more thoughtful and deliberate about what she has the students clip and code, and is "more customized, as opposed to general" as it relates to the goals of the course. Dr. Adams also indicated she has her students clip and code "based on where they are at and what their skill levels might be." She pointed out how, once a session has been clipped and coded, any of the data become accessible for evaluation and demonstration, and how well the retrieval process works with the system.

Dr. Baker explained how the Landro system provides her students the ability to "show evidence of knowing the skills, what they are, what they look like", and then labeling them clearly with the clipping and coding process. She said the system has allowed her to greatly enhance her classes.

In the interview with Dr. Davis, she described the changes she made in her courses, emphasizing how she used to require word-for-word transcriptions of training sessions, but now has the students using clipping and coding. This change had a dramatic impact on the way in which she conducts the courses. She described the changes in the following way:

> One of the things that I used to require was transcriptions of video tapes, so they would have to video record their sessions, and then, in order to have a way to look at what is being said, they would need to transcribe their responses and turn that in. After the Landro, they did not need to transcribe anymore, but instead can do clipping and coding of key responses or segments of sessions that are more easily retrieved for supervision.

Dr. Davis summarized the reason for making the changes by saying that she feels that not having the students prepare word-for-word transcriptions "is better because they do not need to spend a lot of time on non-counseling related things like typing, but instead can focus on their responses and look at it in a more efficient way." Her students are "bringing more segments to supervision so we can look at them and we can be more purposeful in what they are looking at and what feedback they want in supervision."

Dr. Evans made changes in several courses because of the availability of the Landro system. In the Basic Skills class, "I was able to develop some different assignments based on the Landro, where I could create a simulated counseling session and purposely put things in there for students to identify and critique." Dr. Evans continued to explain that the simulated counseling sessions have made "a very important learning curve for them, and has made a big difference from when I taught that class before." Dr. Evans also discussed how, in the Group Practice class, "because of the availability of Landro when students run their groups, I was able to conduct additional hours where students were able to create training videos using the Landro, which is something we would not have been able to do before." Dr. Evans said it enhanced her ability to use the training videos in supervision. She went on to say that part of her

teaching philosophy is to "really pay attention to diverse learning styles, and a lot of students, in their feedback, will say that they are a hands-on learner and need to be doing experiential things, and the Landro lends itself very well to that." She also explained that students need to see and practice "and be able to break down frame-by-frame what is happening in the sessions", and the Landro system provides that capability. Dr. Evans also discussed how she has students create a suicide assessment video where she can then look for specific skills, and use those clips and codes to teach other students.

Dr. Fisher explained how her students use clipping and coding so she can then more effectively analyze their sessions, and she does not have to fast forward through a batch of video tapes, or take the time in class to cue up tapes to show specific issues to her class.

Effectiveness of the Landro System for Teaching

Twelve of the faculty interview questions and ten of the graduate student interview questions asked the participants to rate various aspects of the counselor training and clinical observation system (the Landro system) on a likert scale of one to six. The specific scale values were: 1 – strongly disagree, 2 – disagree, 3 – slightly disagree, 4 – slightly agree, 5 – agree, 6 – strongly agree, and 0 – not applicable.

When asked if the Landro system is very effective for teaching counselor education students, four of the faculty participants answered that they strongly agree (6), and the other three answered that they agree (5), resulting in a mean of 5.6 on the 6 point scale. The graduate student participants were asked the same question, and all five of them answered that they strongly agree (6) that the Landro system is very effective for teaching.

When asked if the Landro system is a significantly better way to teach students than using video tapes and transcriptions of the tapes, five of the faculty answered that they strongly agree (6), and the other two answered that they agree (5), resulting in a mean of 5.7. Dr. Adams indicated that she felt that there still is some benefit from transcribing, but she agreed the Landro system is significantly better than having students just transcribe sessions.

Later in the interview, faculty and student participants were each asked, on a likert scale of zero to ten where zero meant terrible and ten meant excellent, how they would rate the Landro system as a teaching tool for counselor education. All of the faculty participants gave a rating of seven or higher with the exception of Dr. Fisher who gave a rating of five. The mean was 8.3 for the faculty ratings for the question. Table 5 shows the ratings of the faculty participants:

Table 5

Faculty Rating of the Landro System as a Teaching Tool

	Faculty Participant Ratings							Mean
	Adams	Baker	Clark	Davis	Evans	Fisher	Given	
Teaching Tool	9.5	8.5	7	10	9	5	9	8.3

When asked why they rated the Landro system the way they did as a teaching tool, the faculty participants responded with some insights. Dr. Adams (rating of 9.5) explained that the Landro system gives access to much more information than any previously used system. As she pointed out:

> It was sort of a best held secret in the profession that we have students create all of these video tapes, but we were not using hardly any of the data, and so we were perpetuating the myth that we were doing database provision, but nine times out of ten, what was actually happening was self report supervision, so I would say "how was your session", and get an answer that "oh, my session was fine." So, as a counselor educator, I might have only watched a very small portion of what the students were actually doing. With the Landro system, because of the clipping and coding, I can watch the pieces that are most important.

Dr. Baker (rating of 8.5) discussed how there is always room for improvement, but "coming from the land of video recordings, it is a big improvement." Dr. Clark (rating of 7) felt the Landro system can be relied on too heavily, and "then we end up seeing the trees and not the forest." She indicated that while it is a very useful system, it does have limits. Dr. Davis (rating of 10) discussed the ability not only "to search within one person's session, but it is possible to search across sessions" as a very valuable feature of the Landro system. Dr. Evans (rating of 9) explained how the system allows exposing students to more concepts more quickly, and how the students get a lot more visual learning than before the implementation of the Landro system. She mentioned that the system reaches learners who are more hands-on and visual. Dr. Fisher (rating of 5) explained that while the Landro is more convenient, and the clipping and coding helps demonstrate and teach skills, because the system is not portable and the students have to go to the system to use it for clipping and coding, she feels "that really limits me as a teacher." She went on to say "I wish there was a way to save all of the files in one space for easy and efficient access, but that may be possible and I just do not know how." Dr.

Given (rating of 9) said the Landro system is invaluable, and is very effective for students to hone their specific skills.

The graduate student participants were also asked to rate the Landro system as a teaching tool. All of the students gave a rating of nine or higher with the exception of Nolan who gave a rating of eight. The mean was 9.2 for the graduate student ratings for the question. Table 6 shows the ratings of the graduate students:

Table 6

Graduate Student Rating of the Landro System as a Teaching Tool

	Graduate Student Participant Ratings					Mean
	Jesse	Kendall	Logan	Morgan	Nolan	
Teaching Tool	9	9	10	10	8	9.2

When asked why they rated the Landro system the way they did as a teaching tool, the graduate students provided perspectives. Jesse (rating of 9) said that it "gives professors a really good way to point out different things we should change or should keep." Jesse went on to say that the Landro system allows the faculty to be very specific. Instead of saying in a general way, "well, this is what you need to do", the faculty can say "see, you did this here, and you need to try this next time." Kendall (rating of 9) said the Landro is a "tool that helps you review and rethink what you have done in a very practical situation."

Logan (rating of 10) pointed out that the Landro system enables you to "show examples of what counseling should be, and just as importantly, what counseling should not be." Morgan (rating of 10) discussed how important it is that the Landro system

enables students to “go back to previous questions, where colleagues and faculty or supervisors are able to watch you and critique what you can improve upon.” Morgan also explained how the feedback is important whether you are doing well or need to improve on specific concepts or techniques. Nolan (rating of 8) discussed many of the same benefits of the Landro that the other student participants addressed, but also pointed out that the “faculty do not have to be with us while we are doing our sessions, but yet they can still have access to the recordings and the clipping and coding to see how we are doing.” Nolan also pointed out something that none of the other student participants or faculty participants mentioned by saying it “makes me feel comfortable that I am being recorded, and I think it is good for liability purposes in case something would happen and a client would complain.”

The faculty members also were asked to rate on a scale of zero to ten how the Landro system impacts their effectiveness as a teacher, and why they would rate it that way. Drs. Adams, Davis and Evans rated their response as an eight. Dr. Clark rated it as a seven. Dr. Baker and Dr. Fisher rated it as a six. Dr. Given rated it as a five. As Dr. Adams explained, “my effectiveness is really impacted by how I interface with the technology.” She went on to say that “I do not think the technology impacts me, but I am effective depending on how I use the technology.” Dr. Baker said, “the Landro technology is something that I have integrated into how I teach, so it gives me quicker access to things, and gives practical examples, and helps students identify the skills.” Dr. Clark said the Landro “is a wonderful tool in class where I can show a session, stop and then teach spontaneously based on what was occurring on the screen.” Dr. Davis pointed out “because there is content that you have to deliver, I would not say that effectiveness

is based just on the Landro system, but it does help." Both Dr. Evans and Dr. Fisher cited the creativity and flexibility the Landro provides for their teaching. Dr. Given felt the Landro system has fewer technology glitches than the video tapes had. In each case, the faculty indicated the positive aspects of using the Landro system, and the positive impacts on their effectiveness as a teacher.

However, when asked how the Landro system negatively impacted their teaching experiences, several issues were identified by the faculty members. Dr. Adams said she sometimes wonders if the technology gets in the way of the teaching. She went on to say that at first she had the students clipping and coding too much and it was somewhat of an overload, but now she has the students doing more purposeful clipping and coding of sessions. Several faculty, including Dr. Baker, Dr. Davis and Dr. Evans pointed to instances where the technology fails or freezes or files get lost or damaged, and they described how that leads to frustration for both the faculty and the students when this occurs. Dr. Fisher discussed, as a new faculty member, how she did not know the Landro system as well as she needed to, so it was frustrating for her and for her students at first. Dr. Given cited the inability to take the system home to review student work as a problem at times.

Effectiveness of the Landro System for Learning

On a scale of zero to ten, where zero meant terrible and ten meant excellent, when asked to rate the Landro system as a learning tool for students, all of the faculty gave a rating of eight or higher with the exception of Dr. Fisher who gave a rating of six and Dr. Given who gave a rating of five. The mean was 7.6 for the faculty ratings for the question. Table 7 shows the ratings of the faculty participants:

Table 7

Faculty Rating of the Landro System as a Learning Tool

	Faculty Participant Ratings							Mean
	Adams	Baker	Clark	Davis	Evans	Fisher	Given	
Learning Tool	8.5	9	8	8	9	6	5	7.6

When asked why they rated the Landro system the way they did as a learning tool, the faculty responded with a variety of comments. Dr. Adams (rating of 8.5) explained that sometimes doing transcripts of recordings can be a bit more effective than clipping and coding with the Landro system. She gave as an example " if you are trying to teach word economy, and they have to type out their responses, they learn very quickly how much they actually talk and how much they intervene, so the Landro does not totally replace other methods used." On the other hand, Dr. Baker (rating of 9) said "they are able to sit down and watch themselves and not be bogged down in transcription, and it pushes them to identify what it is they are doing and they can rate how effective it is." She went on to say "there are so many more levels of learning that take place for the student if I compare it to the transcription methods I used before."

Dr. Clark (rating of 8) indicated that it is very valuable for students to be able to go through and see recordings of their work, and be able to reflect on that work. Dr. Davis (rating of 8) pointed out that, while most of the students love the Landro system and feel it is a very valuable tool for learning, some struggle with the technology, especially at first. Dr. Evans (rating of 9) explained that "because counseling is such a skill based profession, the more practice and the more critiquing and feedback students

receive on their counseling, the stronger they become, and the Landro system lends itself very well to that." Dr. Fisher (rating of 6) felt, since students do not have to work with video tapes and the system speeds up the ability to show examples and the learning process, that the Landro system aids significantly in learning. Dr. Given (rating of 5) said that once she gets more experience with clipping and coding, she feels she would be able to rate the Landro system a nine as a learning tool for students.

When the graduate students were asked, on the likert scale of one to six mentioned in the previous section, how they would rate the Landro system as being very important in their learning of counseling concepts and techniques, all of the students except for Nolan rated it as a six (strongly agree). Nolan rated it as a three (slightly disagree), and the mean for the question was 5.4. Nolan commented that there are many tools that are important in helping the students learn counseling concepts, and the Landro system is just one of those tools. When the same question was asked of the faculty members, two rated it as a six (strongly agree), two rated it as a five (agree), and two rated it as a four (slightly agree). Dr. Fisher rated it as a two (disagree), and the mean for the question was a 4.6.

The graduate students were asked on a scale of one to ten, where one meant much worse and ten meant much better, relative to other learning experiences, techniques, and tools used in the counseling program, how they would rate the Landro system as a means to build their counseling skills. Three of the students gave a rating of nine or higher. Nolan gave a rating of seven and Logan gave a rating of eight. The mean was 8.7 for the graduate student ratings for the question. Table 8 shows the ratings of the graduate students:

Table 8

Graduate Student Rating of the Landro System Building Counseling Skills

	Graduate Student Ratings					Mean
	Jesse	Kendall	Logan	Morgan	Nolan	
Build Skills	9	9.5	8	10	7	8.7

Jesse (rating of 9) said "I cannot imagine learning my counseling skills in any other way." Jesse went on to say that the ability to show the recordings and coding and clipping to other people for feedback was extremely helpful. Kendall (rating of 9.5) described how the Landro system allows students to review sessions and see and hear how and what they did, as well as what the client said and did. Kendall said "it is hard to remember, especially as a new counselor, what goes on exactly in a session because you are nervous, so the Landro definitely helps." Logan (rating of 8) pointed out how the personal interaction with the instructors is the most important factor in developing counselor skills, and peer interaction is also important, and the Landro aids with both of those. Morgan (rating of 10) explained that the Landro system allows colleagues and supervisors to watch and then "help me improve upon the skills I am lacking and build upon the skills where I can do better." Nolan (rating of 7) expressed how useful it was to see "how I started, and then how I have progressed through the course." Nolan said the Landro system allows the professors to show portions of sessions that could have been done better, and point out those areas that really need work.

When the faculty members were asked to rate the overall effectiveness of the Landro system, all of them except Dr. Clark and Dr. Fisher agreed or strongly agreed that

it had dramatically improved the counselor education program. Dr. Clark slightly agreed and Dr. Fisher slightly disagreed. When the graduate students were asked the same question, all of them agreed or strongly agreed.

Ease of Use of the Landro System

When faculty members were asked whether the Landro system is more difficult to use by them than the former system of video tapes and transcripts, only Dr. Clark and Dr. Davis slightly agreed. All of the other faculty participants felt that the Landro system was easier for faculty to use than video tapes, and was a much more powerful tool.

When the faculty members were asked whether the Landro system is more difficult to use by students than the former system of video tapes and transcripts, only Dr. Baker and Dr. Davis slightly agreed, while all of the other faculty participants felt that the Landro system was easier for students to use. When the graduate students were asked whether the Landro system is more difficult to use by students, Jesse and Logan slightly agreed, while the other three disagreed or slightly disagreed and felt the system was easier for students to use.

The faculty participants were also asked if they felt the Landro system is more time consuming to use by the faculty members than the former system of video tapes. Their responses were widely spread with Dr. Adams and Dr. Baker strongly disagreeing and Dr. Davis disagreeing that it was more time consuming, while Dr. Clark and Dr. Evans slightly agreed it was more time consuming for them. Dr. Given agreed it was more time consuming, and Dr. Fisher strongly agreed it was more time consuming to use the Landro system than the former system of video tapes. However, Dr. Given pointed out that the only reason she feels the Landro system is more time consuming for her is

she used to be able to take video tapes home and review them, but has to be in her office to use the Landro system. Dr. Baker explained that using the Landro system is much less time consuming because of the ability to watch the clips and coding, rather than having to rewind and fast forward through tapes.

When the faculty participants were asked if they felt the Landro system is more time consuming to use by students than the former system of video tapes, Dr. Adams and Dr. Baker again strongly disagreed, Dr. Clark and Dr. Davis and Dr. Given disagreed, and Dr. Fisher slightly disagreed. Dr. Evans slightly agreed the Landro system was more time consuming for students. When the graduate student participants were asked if the Landro system was more time consuming for them, Logan strongly agreed, Jesse and Morgan agreed, and Kendall and Nolan slightly agreed. Overall, the graduate students perceived the Landro system as more time consuming for themselves than the faculty felt it was for the students. On the other hand, when the graduate students were asked if the time they have to spend is worth the effort, all of them except Nolan felt strongly that it is time well spent.

Training

The Landro system is a fairly complex system, requiring training for both faculty members and students. When the faculty participants were asked if significantly more training time is needed by faculty and students than the former system of video tapes, six of the seven felt that a significant amount of training time is needed to learn to use the Landro system. Only Dr. Davis disagreed about the amount of training time needed. When the student participants were asked if a significant amount of training time is needed to learn to use the Landro system, four of the five graduate students felt that was

not the case, with only Logan agreeing with the statement. However, when the student participants were asked if a significant amount of training time is needed to understand how to code counseling sessions, all five agreed and, in each case, the student participants felt more training time is needed to understand how to code than is needed to learn to use the Landro system. When asked if the training for using the Landro system was well done, only Jesse disagreed.

Dr. Adams mentioned that she felt there was a higher learning curve for the faculty members than for the students. She said "I think for students, it's a fairly easy system to learn." Dr. Baker felt it is necessary for her to teach how to use the Landro system in every class where she uses it. She indicated she spends about three hours with the training in the basic counseling skills class, and about half that amount of time in the practicum classes. On the other hand, Dr. Clark said that she only spends about 45 minutes teaching the students to use the Landro system. Dr. Davis felt that it takes about the same amount of time to train the students to use the Landro system as it used to take to teach them how to do video tape recordings. Dr. Given stated that an hour of training was all that is needed in most cases. Dr. Evans said that an orientation to the Landro system would help because "we have a lot of non-traditional students whose technology skills are such that they are less confident, so providing more in-depth training outside of class time would help them be more effective learners." Dr. Fisher felt that there is a high learning curve, and "if you are not tech savvy, it is difficult to figure out how to use the Landro system."

Jesse indicated that at first it sometimes was confusing to know how to use the Landro system, but after just a few hours, it really started making sense. Kendall felt that

about two hours was all that was needed to feel comfortable using the Landro system, but when it came to the coding, "we do not have time to get through all of the different types of codes, so I do not have a clear understanding what all of the interventions are." Logan talked about receiving instruction sheets to help learn how to use the Landro system, and found that, even though two hours seemed to be enough basic training on the system, peers in the classes often were the greatest help. Logan also mentioned the need for more training regarding the coding, and said "sometimes students do not understand which counseling technique to code for a particular segment in a session, especially when there is an interaction between the student and client." Morgan stated that it only took about a half hour to fully understand the Landro system and be able to comfortably utilize it. Nolan said that it was confusing at first, and "when I started working with sessions and getting help from other students, it took until about the middle of my first semester before I became comfortable with the Landro system." Nolan felt that it took about ten hours using the system before it all started making sense.

Dr. Evans explained that there are even more things that the faculty members could be doing with the Landro that they are not yet doing, but training is a key part of expanding the utilization of the system in more ways. She stated "I think we use it in a pretty limited way in our clinical classes, and I think there is a lot more potential that more training would help with."

Transparency of the Technology

When the faculty participants were asked if the Landro system is transparent to the client, all of them indicated that it was similar to being recorded by a VCR or DVD, so it was no more intrusive than that type of recording technology. The clients are all told

that they are being recorded and must sign a release form, as they formerly did when the sessions were audio recorded or video recorded. And, as Dr. Davis explained, the client is not told specifically how the sessions are being recorded, so it does not seem to make any difference. Dr. Evans said that the Landro system cameras are smaller than the former video cameras, so that makes the Landro system less invasive and more transparent. Several of the faculty members mentioned that both students and clients tend to forget about the camera as they get into their session. Dr. Clark mentioned that she felt it is a bit more intimidating than just using an audio recorder because there is more anonymity with an audio recorder than a video recorder, since audio recorders only record voices.

When the graduate student participants were asked the same question, all of them felt that the Landro system is not intrusive for clients. Logan felt that a regular video camera would be more distracting than the small Landro camera. Morgan explained that "clients sometimes do not feel comfortable with being recorded at first, but after the first session, they do not seem to mind." Morgan went on to say "when I explain this is being recorded, and that it is for my training and my professor will use it to critique my counseling skills, not to watch what you are saying and doing, then they seem to relax."

The faculty participants were also asked if the Landro system negatively impacts the student/client relationship, and all of them said no. Dr. Adams discussed how the bug-in-the-ear feature of the Landro system can occasionally cause problems during a session if the student does not have the ear piece in properly and the client can hear the professor giving directions or suggestions to the student. Also, if the student inadvertently responds verbally or nods their head when being told something through the ear piece, that can be

distracting. Dr. Adams also pointed out that, when the bug-in-the-ear feature is being used, the clients are informed and they can also see the ear piece.

Reflection and Feedback

One of the most important ways that counseling students learn is from the feedback they get from counseling sessions in which they are involved. The Landro system provides many opportunities for faculty and other students to provide feedback, and the clipping and coding process greatly aids with feedback. The clipping and coding process also facilitates reflection by students on their own sessions. Dr. Adams explained, "I am of the opinion that the clipping and coding is learning, and I think the more they clip and code, the more that they will learn." She went on to explain that in their basic counseling skills classes, "they have to reflect on micro skills and look at what they are doing", and then they are able "to go in and sometimes be self-reflective, but I think their supervision and feedback can be much more targeted" because of the clipping and coding that the students do.

Dr. Baker described how students can save their recorded sessions throughout the semester, and then go back and access and review them. They can "look at the clips easily and compare their growth and learning from the beginning of the semester to the end." She said "it is a powerful process for students to recognize their growth, and the Landro is a very effective tool because access to the clips is at your fingertips." Dr. Clark explained how she has her students watch their sessions and then reflect upon and critique each session. The clipping and coding the students perform allows her to then use the recorded sessions the next week in class, "so it is totally a feedback loop that is extremely effective."

Dr. Davis pointed out that "it is not the Landro system that provides the feedback and reflection, but it is the assignments given using the Landro." She discussed how she has students come to class with specific clips they want to show and get feedback on from the professor and from other students. She also discussed how students use clips to show they have met certain skills or competencies. Dr. Evans explained that "the more practice and the more that the students critique and get feedback on their counseling skills, the stronger they become, and the Landro lends itself very well to that." Dr. Fisher said that she feels the Landro system is better at helping the students review their recordings and reflect on the various parts of the sessions. Dr. Given also agreed that the Landro system is very effective in helping the students analyze and reflect on their sessions.

All of the graduate students agreed that the Landro system was a very effective tool to assist with reflection and feedback. As Logan pointed out, "it is a new experience to see yourself on a video, and to see how you interact with a client, what techniques you use, your voice level, your non-verbal behaviors, and it is an incredibly good way to make you a better counselor." Morgan discussed how having other students and supervisors critique session recordings helps in the development of better counseling skills. Nolan described how the feedback and reflection aids in developing counseling skills, and the ability to go back and look at sessions helps develop more confidence.

Anxiety

When the faculty participants and graduate student participants were asked if the Landro system reduces or increases the anxiety of students during their counseling sessions, most of them indicated some increased anxiety and nervousness in the

beginning, but after one or two sessions, that anxiety normally disappeared. As Dr. Adams stated:

> I think anxiety is totally irrespective of whether it is the Landro or not. I think the anxiety comes from being on video whether digitally recorded or analog recorded. Over time, different levels of anxiety are experienced. One thing we know is that counselors in training go through a developmental progression, so in the beginning they are anxious about a certain set of tasks and skills, and so with their basic skills, they have anxiety. Then, when they get on to group practicum, there is a another whole level of anxiety, so I think eventually they become less anxious, but developing a new skill always creates anxiety, and I do not know that the Landro adds to that.

Dr. Adams went on to say that she had students tell her that the ability to use the bug-in-the-ear feature of the Landro system decreases their anxiety some because the professor is able to help them if they need it. On the other hand, she had several students say "I cannot believe you are going to be talking in my ear while all the rest is going on in a counseling session."

Dr. Baker pointed out how, in the beginning of the semester, when students are just getting familiar with everything, "it can increase their anxiety because of what they are having to manage and learn all at once, but then as the semester progresses, it goes down because it becomes old hat." Dr. Clark mentioned how students are sometimes concerned in the beginning about how to use the Landro system and worried about what happens if there is trouble with the technology during their counseling sessions. Dr. Davis talked about how the process of being recorded causes anxiety, and whether it was

using the Landro system, or a VCR or DVD, the students "would have the same level of anxiety." Dr. Evans explained that sometimes, in the group practicum classes, because the supervision is often done live, since the students know they are being watched as well as recorded, "the knowledge or awareness of that happening in the moment can be distracting."

Jesse said the anxiety and nervousness went away after about the first ten minutes. Kendall pointed out that, if it were a video recorder, it would have caused more anxiety for both the student and the client because video cameras are usually larger, more obvious and more intrusive, but the cameras used with the Landro system are smaller and partially hidden inside an enclosure mount. Logan was anxious at first, knowing that the recording would be viewed by the professor and possibly by the entire class, but relaxed after the first few sessions. Morgan said knowing that the recording was going to be critiqued by the professor and colleagues created some anxiety during the first two sessions, "but in the end, knowing it is going to help me grow professionally, it did not bother me anymore." Morgan also realized "it is not about how I look or how my voice sounds, but all about me learning the skills needed to become a counselor."

Problems Encountered with the Landro System

When the graduate student participants were asked about problems they had with using the Landro system, including both hardware and software, there were very few issues mentioned. Nolan indicated an occasional problem some of the students had with the audio not recording for a session. Jesse was one of the students who lost the audio on a recording. Logan had problems with the coding in the beginning, and felt it took a

considerable amount of time to perform the coding operations, but once the professors explained which codes to use with a particular situation, then it got much better.

When the faculty participants were asked about problems with using the Landro system, including hardware and software, a few more issues were brought up. Dr. Adams explained that when you lose the video signal, “then you are done”, but went on to say it would be the same if you were using video cameras. Dr. Adams also pointed out that most of the problems are operator error. If you forget to push the correct button, or do not get the audio and video signals routed to the Landro system from the observation room, then there will be problems. Dr. Adams does the signal routing for her students to reduce the chance of error. Dr. Adams also mentioned problems with getting the audio and video signals from the Landro system to the classroom computer, but felt the problems were usually with the classroom computer, rather than the Landro system, and pointed out how important it is for faculty to make sure the technology in the classroom is working properly before class sessions.

Dr. Baker also mentioned problems with the classroom connection, as well as with students having problems with recording audio and video, but often it is student error rather than the Landro system. Dr. Baker makes sure that the students make quite a few recordings, so if one fails they can just use another session recording. Dr. Clark said the problems she had were minimal, and usually it was the classroom computer rather than the Landro system. Dr. Davis had experienced problems with the audio not recording, but does not know if it was software, hardware, network, or user error. Dr. Evans experienced loss of sessions once because of a power outage, and occasionally had problems with the classroom computer. Once Dr. Evans received more training in order

to become more familiar with the Landro system, the classroom computer problems went away.

Dr. Fisher experienced a problem with the Landro system failing during finals week one semester, causing some students to lose their final recordings. Now that she has experienced that type of a problem, she has a better idea of how to handle a similar situation if it ever occurs. A few of Dr. Given's students had a problem with getting a session to record, but she felt the cause was they did not press the correct button, or they made other operator errors.

Limitations of the Landro System

Both Jesse and Nolan indicated there are not enough Landro system stations for all of the students to do their clipping and coding when they want, so at times they had to wait for a system to become available. Dr. Adams pointed out that the storage capacity of each of the Landro systems is somewhat limited, so all of the sessions must be erased at the end of each semester to make room for new sessions. Several of the faculty participants, and most of the graduate student participants in the study discussed the need for portability of the Landro system, so it could be taken to a location off campus for counseling sessions.

Obsolescence of the Current Landro System

The Landro system was installed at Indiana University of Pennsylvania in 2004. Since that time, several new versions of the Landro system have been developed by IRIS Technologies, including a server based version that eliminated the need for separate Landro system stations, and allowed the use of standard personal computers connected to the server instead. IRIS Technologies recently developed a laptop version of the Landro

system, comprised completely of software that will run on most laptop computers. Several of the faculty participants brought up the need to replace the current Landro system with new technology. Dr. Adams mentioned, when she described the storage capacity of the individual Landro systems, that the server version of the Landro system allows for virtually unlimited storage of recordings, so that would allow for a way to "keep, in a longitudinal way, the student data from multiple semesters, so we could then look at progress over time." Dr. Adams mentioned the new laptop version of the Landro would have considerably more storage capacity because of the improvement in hard drive technology. Dr. Baker explained that a new system would make the retrieval of recordings faster and add more features that would enhance the classroom instruction. Dr. Davis stated that the version of the Landro system used at the university is not compatible with Microsoft Windows7, so all office and classroom computers connected to the Landro system must continue running WindowsXP, and Microsoft will only support the WindowsXP operating system for several more years. In addition, most replacement parts for the existing system are no longer available. Dr. Davis also explained that IRIS Technologies no longer supports the newer server based version of Landro, but replacement parts may still be available for it, but the server based system is also not compatible with Windows7.

Positive Aspects of the Current Landro System

When the faculty participants were asked to provide up to five descriptors for the positive aspects of the Landro system, a wide range of responses were received. Dr. Adams responded with "it allows for purposeful supervision", "it allows for an incredible amount of access to data", and "it can be utilized across multiple roles of the counselor

educator as a teacher, consultant, or counselor." Dr. Adams also mentioned the ability to quickly and easily access session recordings and the clipping and coding information. Dr. Baker cited the ability to access the Landro system from her office as well as the classroom. She also indicated it was "always there and available." Dr. Clark discussed the flexibility of the Landro system, along with the efficiency and the ability to show "real life clinical vignettes" in class. She mentioned "when I critique a student session in class, I phrase it in terms of we are all learning from this." Dr. Davis mentioned skill development, and efficient coding and searching. Dr. Evans stressed that the Landro system is "developmental in the sense that we can watch students transform their skills even within one semester." Dr. Evans also mentioned the creative and experiential capabilities the Landro system provides. Dr. Fisher mentioned accuracy and efficiency, but also said the Landro system helps us keep our program competitive in the higher education market. Dr. Given discussed the reliability of the system, the clipping and coding capabilities, the ability to change the coding tables in the system for different courses, and the use of the bug-in-the-ear feature for live supervision.

When the graduate students were asked to provide up to five descriptors for the positive aspects of the Landro system, they also provided a wide range of responses. Jesse described the Landro system as efficient, useful, and unique. Kendall said the system was easy to learn and a time saver. Kendall also noted the ability to review the audio and video, observe body language, and review sessions with their professors. Logan mentioned observing their own counseling skills, and pointed out the ability to "pick out the particular parts of the counseling session where you did not perform up to particular standards." Logan also described how observing someone else's counseling

session that was done in an excellent manner was very helpful, and also observing a session where there were problems and learning why those problems occurred. In addition, Logan mentioned that the Landro system helped students become more technologically knowledgeable. Morgan described the Landro system as resourceful, helpful, easy to use, and a "great learning tool that helps students figure out how to improve for the next time." Nolan described the system as convenient and a patient training tool.

Negative Aspects of the Current Landro System

When the faculty participants were asked to provide up to five descriptors for the negative aspects of the Landro system, a range of responses were again received, but fewer than for positive aspects. Dr. Adams described the limitation of having to do all of the clipping and coding directly on the Landro systems in the control room, rather than being able to have the Landro software on office or lab computers and laptops. She also discussed the tendency of students to do "over coding and over use of information that is not always purposeful." Dr. Baker described frustration when the computer freezes in the classroom when trying to play video from the Landro system, but went on to explain that it most likely was not the Landro system, but either the classroom computer or the network. Dr. Baker also mentioned the problems with students being intimidated by the system at first and having a fear about using it, but once they became familiar with it, most of those problems disappeared. Dr. Clark felt at times that the Landro system "fosters a false feeling in students that it is only a series of micro skills that they need to master to become a great counselor." She also discussed the anxiety about getting the sessions routed properly through the Video Commander to the Landro system, and the

frustration when the Landro system does not work properly. Dr. Davis mentioned the problems with the Landro system not being compatible with Windows7, and the high cost of the system. Dr. Evans cited the amount of time it takes to train students and the limited access, since not all of the classrooms are connected to the Landro system. She also mentioned wishing there was a technician for the Landro available at night to help if there is a problem or a student loses work. Dr. Fisher felt that if one is not tech savvy, it is difficult and time consuming to figure how to use the Landro system. Dr. Given addressed the need for mobile Landro systems for both students and faculty members.

When the graduate students were asked to provide up to five descriptors for the negative aspects of the Landro system, just as was the case with the faculty members, they provided a more limited number of responses. All but Morgan mentioned being confused, frustrated, or anxious at first, both with being recorded, and learning to use the Landro system, but then getting beyond that in a short time. Jesse mentioned the disappointment and frustration when there was a problem. Logan mentioned difficulty learning how to code sessions, and Nolan mentioned the amount of time it took to code.

Multiple Intelligences and Learning Styles

As mentioned in previous chapters, Howard Gardner's work with multiple intelligences is used as a theoretical framework in this study in helping to describe and understand how the Landro system changed the many ways in which counselor training is taught, and how it has changed the multiple ways the counselor education students learn.

The concept of multiple intelligences, as introduced by Howard Gardner (2006a) explains how each person has certain strengths and weaknesses in the ability to learn and apply what has been learned. People find that certain concepts may be easily learned, and

yet other concepts are more difficult to learn. Howard Gardner describes in his multiple intelligences theory how people each have certain intelligences in which they are more proficient. As Gardner (2006a) pointed out:

> I believe that human cognitive competence is better described in terms of a set of abilities, talents, or mental skills, which I call intelligences. All normal individuals possess each of these skills to some extent; individuals differ in the degree or skill and in the nature of their combination (p. 6).

Gardner recognized that people each have different cognitive strengths and skills. He (Gardner, 2006a) identified a set of intelligences including: musical intelligence, bodily-kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, and intrapersonal intelligence (pp. 8-18). Gardner later added naturalist intelligence to his list (p. 19) and discussed other possible intelligences.

Gardner (2006a) also discussed how people master concepts through repeated exposure to the material in the following:

> One almost never achieves instant understanding. But it is a mistake to present the same content in the same way. Understanding is far more likely to be achieved if the student encounters the material in a variety of guises and contexts. And the best way to bring this about is to draw on all of the intelligences that are relevant to that topic in as many legitimate ways as possible (p. 60).

Gardner (2006a) stresses that "important materials can be taught in many ways, thereby activating a range of intelligences and consolidating learning" (p. 84).

During the interviews of this study, both faculty participants and graduate student participants described how the Landro system allows students to learn concepts and techniques in a variety of ways, and for the professors to introduce concepts and techniques multiple ways. Both Dr. Adams and Dr. Davis described how the Landro system allows for multiple roles that supervisors play when working with their students, such as a role as a teacher, a consultant, or as a counselor. Dr. Adams also described how the system enables the students to think about such different areas as personalization, intervention, and conceptualization. Dr. Adams said students in a basic skills class "have to reflect on micro skills and look at what they are doing, and the more they clip and code, the more they are able to go in and sometimes be self-reflective." Dr. Baker described students "learning both how to label skills and recognize skills, as well as how to do them in sessions." Dr. Baker explained "there are just so many more levels of learning that take place for the student, compared to the transcription methods I used before." Dr. Baker also pointed out how students can look at the clips they have coded on the Landro and "easily compare their growth and learning from the beginning of the semester to the end, and that is a very powerful process for students to recognize their growth."

Dr. Clark described the process where students "do a session, then watch their session, clip and code important segments, critique and reflect on the session, and then I use it for teaching the next week, so it is a total feedback loop that is extremely effective." Dr. Clark also discussed how the Landro allows for spontaneous teaching where "the Landro system provides me with real life clinical vignettes that I use to teach my class, and it greatly enhances my teaching." Dr. Davis explained how students bring

specific session clips to class and receive feedback from the students as well as the professor, and that feedback helps the students improve their skills.

Dr. Evans detailed how she felt the Landro system addresses different learning styles. She explained that "the technology addresses students who learn well with hands-on learning, those who like to see things modeled, and those who learn from seeing examples by experts." She continued with: "I can create any level of skill that is conducive for my students' learning, and it has enhanced their ability to see it done in a real way and modeled for them because of the Landro system." Dr. Evans also explained that "the Landro system is very effective because a lot of students, especially when talking about skill based courses, need to see and practice and be able to break down frame-by-frame what is happening." She also discussed how showing multiple samples to her students reinforces the learning process, and also how students can see their own growth over time using the Landro system. Both Dr. Fisher and Dr. Given discussed the ability of students to review their work over and over and watch and learn from other recorded sessions. Also, doing the aforementioned, along with going through the clipping and coding process, all reinforce the learning in many different ways.

From the graduate student viewpoint, Jesse explained the following about the Landro system effectiveness with learning:

> It offers a lot of feedback and reflection opportunities. A lot of people have tendencies that they never notice, such as hand movements, or umms, and you never really catch that until you see it. Just seeing how you interact with other people, even laughing when you should not, really helps because you do not really notice it until you see it. It offers great reflection and feedback.

Jesse continued to describe the importance of being able to show the clips of sessions to other students and the professors to get their feedback, rather than students only observing themselves and thinking "this is what I did, or this is what happened", which may not always be the case.

Kendall said the Landro system helps you not only see and hear what you did in a session, but also what the client said and did, and "then the clipping and coding process makes it even more clear about what happened and why." Kendall also mentioned that the non-verbal body language was also important to see and clip and code. Logan cited some of the same Landro features as Kendall, and stressed "to see how you interact with a particular client, what techniques you use, your voice level, your non-verbal behaviors, is incredibly a factor in making you a better counselor." Logan also stated "personal interaction with the instructor is the most important factor in developing my counselor skills, and the Landro system aids with that." Logan continued "you are able to see examples of what counseling should be, and just as importantly, what counseling should not be."

Morgan indicated that having other students and professors watch the clips of sessions, and critiquing what went well and what areas need to be improved, is extremely helpful in improving counseling skills. Nolan stressed the importance of the ability to go back and look at sessions over and over, as well as getting feedback from other students and the professors. "Knowing you can go back and look at sessions helps a lot and gives us more confidence." Nolan continued, "By using the Landro system, I was able to see how I started and how I progressed through a course, and how I was not using my skills well in the beginning, but got more comfortable as I went along."

Each of the faculty members and the graduate students, in the comments earlier in this section, as well as in other comments throughout the interviews, frequently explained the importance of the ability to see not only recordings of themselves, but also those of other students. The ability to go back and review past sessions also added to the learning process. Each participant explained the importance of feedback from other students and from the professors. Frequent remarks were made about the different ways in which the Landro system provides the ability to learn from the recorded sessions.

Summary

The implementation of a technology assisted counselor training and clinical observation system by the faculty in the IUP Counseling Department enabled modifications in the ways in which the faculty members teach and the students learn. This qualitative study explored the ways in which the faculty members modified their teaching to incorporate the new observation system into the curriculum and how student learning has been changed.

In this chapter, the study site was described, and the two groups of participants, seven IUP Counseling Department faculty members and five graduate students enrolled in the counseling program at IUP, were described regarding their demographic, educational, and work experience backgrounds, as well as their technological skills and technological knowledge levels. The 58 questions in the 7 faculty interviews and the 46 questions in the 5 graduate student interviews were coded and analyzed by the researcher using the NVivo 9 (QSR International, 2010) software to assist in exploring themes and trends in the responses. Individual responses to the interview questions, along with trends that emerged from the responses, were discussed in the various sections of this chapter. In

many cases, trends not only emerged from members of the two individual interview groups, but, most of the time, similar trends emerged from both the faculty participants and the graduate student participants combined.

Many themes and trends were revealed and explored as the interview responses were evaluated throughout this chapter. Among those were changes made to courses and syllabi, effectiveness of the Landro system for teaching and learning, ease of use of the Landro system, training issues, transparency of the technology to the client and the student, and various anxiety issues. Another major theme that arose throughout the interviews was the way the Landro system aided in reflection and feedback as students progressed through their classes. Additional themes and trends explored included problems encountered with utilization of the Landro system, limitations of the Landro system, obsolescence of the Landro system as new technologies and systems have emerged, and both the positive and negative aspects of the current Landro system. In addition, various interview responses were explored regarding the different learning styles of students, how the Landro system facilitates teaching and learning in multiple ways, and how it enables repetitive reviewing and learning.

While this chapter discussed the information obtained from the interviews of seven faculty participants and five graduate student participants, chapter five will describe the results and knowledge gained from the study, tied back to the five research questions of this study. Chapter 5 will also include recommendations for improvements to the Landro system, possible future upgrades and/or replacements, and suggestions for further related studies.

CHAPTER 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Introduction

The implementation of a technology assisted counselor training and clinical observation system in the Indiana University of Pennsylvania Counseling Department created change for both faculty and students. As the faculty incorporated the Landro system into their classes, they made changes in their syllabi and course assignments, as well as changes in some of the ways they teach the classes. The Landro system enables students in the counseling program to learn and develop their counseling skills and knowledge in some different ways than in the past.

In this chapter, the results and knowledge gained from interviews with seven faculty members and five graduate students of the IUP Counseling Department are linked back to the five research questions of this study, and the interview responses are tied back, where appropriate, to the theoretical framework for this study. This chapter also includes recommendations for improvements to the Landro system, possible future upgrades and/or replacements, and suggestions for further related studies.

The specific research questions and assumptions which guided this qualitative study are:

1. What impact has the IUP counselor training and clinical observation system had on teaching and learning? This study assumes the observation system has had a significant impact on both teaching and learning, and will explore what that impact has been.

2. How have the IUP Counseling faculty changed the way they teach their students because of the IUP counselor training and clinical observation system? This study assumes the faculty members have changed the way they teach because of the observation system, and will explore what those changes have been and why.

3. How has the way in which Counseling students learn their counseling skills changed because of the IUP counselor training and clinical observation system? This study assumes the way in which the students learn has changed because of the observation system, and will explore what those changes have been.

4. How does the IUP counselor training and clinical observation system provide for student reflection and feedback as they progress through their program of study? This study assumes that the observation system provides for student reflection and feedback, and will explore how that reflection and feedback works.

5. How does the IUP counselor training and clinical observation system reduce or increase the anxiety of students because their counseling sessions are recorded? This study assumes that the observation system has reduced the anxiety of students because the sessions are recorded rather than observed live by their professor. This study will explore anxiety issues of students using the observation system.

As was discussed in chapters 3 and 4 of this study, the 58 questions in the 7 faculty interviews and the 46 questions in the 5 graduate student interviews were

analyzed using the NVivo 9 (QSR International, 2010) software to assist the researcher in identifying trends and themes in the responses from the participants. With the assistance of the expert panel members who reviewed the interview questions prior to the beginning of the study, the individual interview questions were mapped to each of the specific research questions (see chapter 3 for the relationship of interview questions to research questions).

Answering the Research Questions

This section will discuss each of the five research questions and the findings related to them, based on the responses to the interview questions used in this study. See Appendix D for the 58 interview questions for the 7 faculty interviews, and see Appendix E for the 46 interview questions for the 5 graduate student interviews.

Question 1: Impact on Teaching and Learning

Research question #1: What impact has the IUP counselor training and clinical observation system had on teaching and learning?

As discussed in chapter 4, when the seven faculty participants were asked if the Landro system is very effective for teaching counselor education students, four of them answered that they strongly agree, and the other three answered that they agree. When the five graduate student participants were asked the same question, all five of them answered that they strongly agree that the Landro system is very effective for teaching. Similar results were found when the faculty participants were asked to compare the Landro system to previously used systems that used video tape recordings, with all agreeing or strongly agreeing the Landro system was a significantly better way of

teaching. When the faculty and student participants were asked about the effectiveness of the Landro system on learning, most were very positive.

The participants in this study pointed out how the Landro system has had a significant impact on both teaching and learning. Throughout the study, faculty and student participants cited many of the capabilities of the Landro system including clipping and coding (see Appendix I for examples of coding), storage capability, ease of retrieval, ability to observe live sessions, ability to show examples in class, ability to observe sessions from faculty offices and classrooms, and the ability to easily review sessions over and over.

As detailed in the discussions regarding other research questions of this study, the Landro has had a major impact on the way in which the faculty members are teaching and the students are learning. Faculty members changed their syllabi and course assignments to incorporate the Landro system into the courses, and they felt the changes were very helpful. The Landro system is used by the students in many of their classes, and the student participants in this study felt the Landro system was an effective learning tool. As Jesse explained, "I cannot imagine learning my counseling skills in any other way."

Schlechty (2001) discussed how, in education, students are often referred to as products, rather than as customers. When he discussed this, he explained how it is better to think of "students as customers and the experiences provided to the students as products" (p.89). He went on to say that more positive results can be obtained if teachers "seek to provide direction for student action and to transform student needs into wants and desires" (p.90). The Landro system assists the faculty to provide direction, and assists students in learning counseling concepts.

The Landro system changed the way in which the counseling faculty members teach and the counseling students learn. The system had made a major impact on the department, the faculty and the students. The system has influenced nearly every course offered within the department, and all of the participants in this study felt that the Landro system is very effective for teaching counselor education students.

Question 2: Changes to Teaching

Research question #2: How have the IUP Counseling faculty changed the way they teach their students because of the IUP counselor training and clinical observation system?

As discussed in chapter 4, all of the faculty members in the study group changed the way in which they taught their classes, and all made changes to their course syllabi. They made the changes so they could incorporate the Landro system into their courses to enhance learning for their students. Dr. Adams said, now that she is able to use the Landro system for her students, she can be "like the one-room school house teacher, where I can customize what I am doing with individual students, based on what I am seeing as part of their supervision." Several of the faculty explained how the Landro system has allowed them to target specific counseling skills their students need to master. Dr. Adams explained that she can have her students "use the system in a much more purposeful way to target their learning."

Dr. Baker explained how, by using the clipping and coding features of the Landro system, it provides her students the ability to "show evidence of knowing the skills, what they are, what they look like", and she said the system allowed her to greatly enhance her classes. Several of the faculty members discussed how, in the past, they required their

students to transcribe video tapes, but now, with the Landro system, as Dr. Davis pointed out, the students "do clipping and coding of key responses or segments of sessions that are more easily retrieved for supervision." Dr. Adams said "with the Landro system, because of the clipping and coding, I can watch the pieces that are most important."

In some classes, the Landro system is being used to create simulated counseling sessions for their students. As Dr. Evans discussed, the simulated counseling sessions have made "a very important learning curve for them, and has made a big difference from when I taught the class before." Several faculty participants discussed how the ability to create training videos using the Landro enhances their classes and helps students understand counseling concepts more clearly.

Several of the faculty participants discussed how the Landro system has assisted with training students who have different learning styles, since the Landro system provides various ways that it can be used to help faculty members teach counseling concepts. Dr. Davis described the ability not only to "search within one person's session, but it is possible to search across sessions" as a very valuable feature of the Landro system.

The student participants very highly rated the Landro system as a teaching tool, and described how the various features of the Landro system help their professors teach counseling concepts and skills. While the student participants had not seen the specific changes that faculty members made to incorporate the Landro system into the courses, they did see the benefits of the system. As Logan pointed out, the Landro system enables you to "show examples of what counseling should be, and just as importantly, what counseling should not be."

Question 3: Changes to Learning

Research question #3: How has the way in which Counseling students learn their counseling skills changed because of the IUP counselor training and clinical observation system?

Not only has the Landro system changed some of the ways the faculty members teach their classes, but the Landro system also changed how students learn their counseling skills and concepts. As Dr. Baker explained, the clipping and coding capabilities of the Landro system allow students to "show evidence of knowing the skills, what they are, what they look like." In the past, a considerable amount of time was spent by students transcribing video tapes, but now with the Landro system, the students spend time clipping and coding segments of their counseling sessions.

Throughout the interviews, all of the faculty participants explained the value for students seeing recordings of their counseling sessions and to reflect on that work. As Dr. Evans explained, "because counseling is such a skill based profession, the more practice and the more critiquing and feedback students receive on their counseling, the stronger they become, and the Landro system lends itself very well to that." All of the student participants in this study told of the importance of being able to see themselves in counseling sessions, and being able to review and clip and code those session recordings. Morgan explained how the Landro system allows colleagues and supervisors to watch and then "help me improve upon the skills I am lacking and build up the skills where I can do better." Several students noted the importance of seeing their progress through the course by reviewing clips from different portions of the semester. When the student

participants were asked if the felt the Landro system had dramatically improved the counselor education program, they all agreed or strongly agreed.

Training was an issue brought up by many of the faculty and student participants. Some of the participants felt more training was needed than for former systems. However, most of the comments by student participants about training focused on the need for more training to understand how to code counseling sessions, rather than a need for more training to learn to use the Landro system. Training does impact the ability of the students to effectively use the Landro system.

As discussed earlier, the Landro system provides many capabilities that former systems did not. These capabilities enhance the way students learn their counseling skills. The ability to clip and code segments of sessions appears to be the most powerful feature of the Landro which has an impact on learning, since it provides the ability easily to retrieve and review portions of sessions, to reflect more easily on parts of the sessions, and study the sessions in greater depth. The ability to create training sessions using the Landro system also enhances the learning of counseling skills and knowledge. As described in chapter 4, all of the faculty and student participants in this study gave multiple examples of how the Landro system improves the learning process.

Question 4: Reflection and Feedback

Research question #4: How does the IUP counselor training and clinical observation system provide for student reflection and feedback as they progress through their program of study?

One of the most important ways counseling students learn is from the feedback they get from counseling sessions in which they are involved. As was discussed in

chapter 4 of this study, the Landro system provides many opportunities for faculty and other students to provide feedback, and the clipping and coding process greatly aids feedback. And, as discussed by both the faculty and student participants in this study, the clipping and coding process also facilitates reflection by students on their own sessions. Dr. Adams explained "I am of the opinion that the clipping and coding is learning, and I think the more they clip and code, the more that they will learn."

When addressing reflection specifically, Dr. Adams said "they have to reflect on micro skills and look at what they are doing" and then they are able "to go in and sometimes be self-reflective, but I think their supervision and feedback can be much more targeted" because of the clipping and coding that the students do. Dr. Davis explained "it is not the Landro system that provides the feedback and reflection, but it is the assignments given using the Landro." And Dr. Evans explained "the more practice and the more that the students critique and get feedback on their counseling skills, the stronger they become, and the Landro lends itself very well to that."

All of the student participants indicated that the Landro system is a very effective tool to assist with reflection and feedback. Several of the student participants discussed how seeing themselves on video is very helpful in building their counseling skills. Logan discussed how the system helps students see how they interact with clients, techniques they use, and non-verbal behaviors. All of the students described various ways the Landro system aids in reflection and feedback and how important they are for their growth.

The most important element of the Landro system that pertains to reflection and feedback is the clipping and coding, since it provides the ability easily to retrieve, review,

and share segments of session recordings. The ability to retrieve and review session segments over the entire semester also aids in the reflection and feedback process.

Question 5: Student Anxiety

Research question #5: How does the IUP counselor training and clinical observation system reduce or increase the anxiety of students because their counseling sessions are recorded?

When the faculty and student participants were asked if the Landro system reduces or increases the level of anxiety of students, most of them indicated some increased anxiety and nervousness in the beginning, but after one or two sessions, anxiety normally disappeared or was significantly reduced. As Dr. Adams explained, "I think anxiety is totally irrespective of whether it is the Landro or not. I think the anxiety comes from being on video whether digitally recorded or analog recorded." This same feeling was expressed by several other faculty and student participants that it is not the Landro system, but just the process of recording, that creates anxiety.

Dr. Adams explained in counselor training "over time, different levels of anxiety are experienced." She continued to describe the counselor training process and said "one thing we know is that counselors in training go through a developmental progression, so in the beginning they are anxious about a certain set of tasks and skills, and so with their basic skills, they have anxiety." Dr. Adams stated "I think eventually they become less anxious, but developing a new skill always creates anxiety, and I do not know that the Landro adds to that."

Several faculty participants explained that some of the student anxiety of using the Landro system comes from worry that there may be technology problems with the

system during their counseling sessions. Dr. Evans mentioned that when the supervision is done live, such as is sometimes done in the group practicum classes, since the students know they are being watched as well as recorded, "the knowledge or awareness of that happening in the moment can be distracting."

Some students told Dr. Adams that the bug-in-the-ear feature of the Landro system actually decreases their anxiety because the professor is able to help them if they need it during a counseling session. However, she had students tell her that their anxiety is elevated as a result of the bug-in-the-ear because their professor talks to them during the counseling session.

The student participants all indicated some anxiety in the beginning, but as they became more familiar with the Landro system, and more comfortable being recorded, their anxiety was diminished.

Overall, the Landro system does not appear to have any significant impact on prolonged anxiety levels of counseling students, whether the sessions are recorded or being watched live. Most of the participants in the study did not indicate any significant difference in anxiety levels, whether the recording was being done via the Landro system or some other recording system. According to the faculty and the student participants, experiencing anxiety in learning to become a counselor is normal and usually reduces with experience and time. As Morgan expressed about being recorded, "it is not about how I look or how my voice sounds, but all about me learning the skills needed to become a counselor."

Theoretical Framework

As discussed in previous chapters of this study, Howard Gardner's work with multiple intelligences is used as a theoretical framework in this study in helping to understand how the Landro system changed the many ways in which counselor training is taught, and how it has changed the multiple ways the counselor education students learn.

Howard Gardner (2006a) explains how we each have various strengths and weaknesses in our ability to learn and apply what we have learned. Some concepts may be easy for us to learn, while other concepts are more difficult. Gardner (2006a) points out that we each have "a set of abilities, talents, or mental skills" (p. 6) which he calls intelligences.

Gardner (2006a) describes his set of intelligences as: musical intelligence, bodily-kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, and intrapersonal intelligence (pp. 8-18). Gardner later adds naturalist intelligence to his list (p. 19) and discusses other possible intelligences.

While Gardner's multiple intelligence theory encompasses at least seven types of intelligence, not all of his intelligences apply to every person and situation. Those that appear most closely related to this study and the field of counselor education are interpersonal intelligence, intrapersonal intelligence, and linguistic intelligence.

Gardner (2006b) describes interpersonal intelligence as "the ability to understand other people: what motivates them, how they work, how to work cooperatively with them" (p. 50). In the field of counselor education, counselors must work with and understand these concepts in order to assist their subjects. Throughout the interviews in

this study, the faculty members and the students discussed how the Landro system allows them to review and analyze the recorded sessions in detail, and the clipping and coding and reflection processes assist the students in better understanding what occurred in their sessions, and how they can improve their counseling skills.

Gardner (2006b) describes intrapersonal intelligence as "the capacity to form an accurate, veridical model of oneself and to be able to use that model to operate effectively in life" (p. 50). As discussed throughout this study, the Landro system provides the ability for the students to record and analyze their sessions so they can better understand their own skills and knowledge and how they can improve their counseling techniques. The Landro system aids the faculty members in showing examples of good and poor counseling techniques to assist their students in developing better counseling skills and knowledge.

Gardner (2006c) explains linguistic intelligence with the example of "the conversationalist who is able to secure useful information by skilled questioning and discussion with others" (p. 31). The field of counseling relies very heavily on skilled listening, questioning, and discussing with their subjects. The Landro system aids the students by allowing them to review, reflect, and critique their counseling skills.

Gardner (2006a) explains how individuals truly understand ideas or methods when they can apply what they have learned to a new situation (p. 124). Gardner also points out in his discussion of understanding that, to determine if a student has a clear understanding, it is necessary for the student to demonstrate that understanding (p. 127). Gardner stresses that it is important, when teaching, to have the students demonstrate their understanding throughout the course, not just at the end (p. 127). Gardner also

points out that "assessment ought to be an activity of mutual engagement, in which students take regular and increasing responsibility for reflecting on the nature of their performances and on the means for improving them" (p. 127). In the counseling education program at IUP, students are required throughout their courses to not only use the Landro Play Analyzer system to demonstrate the counseling skills and knowledge they are learning, but they also are required to reflect throughout their courses on what and how they have learned.

Gardner (2006b) says "if we believe that mind is neither singular nor revealed in a single language of representation, then our use of technologies should reflect the fact that individuals construct their understandings in different ways" (p. 80). Gardner (2006b) goes on to say:

> Technologies like CD-ROM that include a variety of media and ways to make meaning may well be able to help more students form rich representations of an event and cultivate deeper understandings. However, it is unrealistic to expect this educational outcome to be achieved as a simple consequence of adding more information and more media. Instead, our authoring has to have the explicit goal of greater access for more students, and we need ways to assess whether and how the information has been apprehended (p.80).

Gardner (2006a) points out numerous times in his books how we master concepts through repeated exposure to the material. He discusses how we are more likely to learn when we encounter "the material in a variety of guises and contexts" (p. 60).

Gardner (2006a) stresses that "important materials can be taught in many ways, thereby activating a range of intelligences and consolidating learning" (p. 84). As

discussed in chapter 4 of this study, during the interviews of this study, both faculty participants and graduate student participants described how the Landro system allows students to learn concepts and techniques in a variety of ways, and for the professors to introduce concepts and techniques multiple ways. Several faculty participants described how the Landro system allows for multiple roles that supervisors play when working with their students, such as a role as a teacher, a consultant, or as a counselor. In the interview with Dr. Adams, she described how the system enables the students to think about such different areas as personalization, intervention, and conceptualization. Dr. Adams discussed how students are able to use the system to "self-reflect" when they review the recordings of their sessions. Dr. Baker explained "there are just so many more levels of learning that take place for the student, compared to the transcription methods I used before." Additionally, Dr. Baker pointed out how students can look at the clips they have coded on the Landro and "easily compare their growth and learning from the beginning of the semester to the end, and that is a very powerful process for students to recognize their growth."

As discussed in chapter 4, Dr. Evans said that part of her teaching philosophy is to "really pay attention to diverse learning styles, and a lot of students, in their feedback, will say that they are a hands-on learner and need to be doing experiential things, and the Landro lends itself very well to that." Dr. Evans detailed how she felt the Landro system addresses different learning styles. She explained that "the technology addresses students who learn well with hands-on learning, those who like to see things modeled, and those who learn from seeing examples by experts." Dr. Evans also explained "the Landro system is very effective because a lot of students, especially when talking about skill

based courses, need to see and practice and be able to break down frame-by-frame what is happening." She also discussed how showing multiple samples to her students reinforces the learning process, and also how students can see their own growth over time using the Landro system. Faculty participants discussed the ability of students to review their work over and over, and to be able to watch and learn from other recorded sessions, and going through the clipping and coding process all reinforce the learning in many different ways.

From the graduate student viewpoint, Jesse explained the following about the Landro system effectiveness with learning:

> It offers a lot of feedback and reflection opportunities. A lot of people have tendencies that they never notice, such as hand movements, or umms, and you never really catch that until you see it. Just seeing how you interact with other people, even laughing when you should not, really helps because you do not really notice it until you see it. It offers great reflection and feedback.

Jesse continued describing the importance of being able to show the clips of sessions to other students and the professors to get their feedback, rather than just what students observe about themselves, and thinking "this is what I did, or this is what happened", which may not always be the case.

Several of the graduate student participants mentioned that the non-verbal body language was important to see and clip and code. Logan stressed "to see how you interact with a particular client, what techniques you use, your voice level, your non-verbal behaviors, is incredibly a factor in making you a better counselor."

Morgan indicated that having other students and faculty watch the clips of your sessions and critique what went well and what areas need to be improved is extremely helpful in developing counseling skills. Nolan stressed the importance of the ability to go back and look at sessions over and over, as well as getting feedback from other students and the professors. “Knowing you can go back and look at sessions helps a lot and gives us more confidence.” Nolan continued, “by using the Landro system, I was able to see how I started and how I progressed through a course, and how I was not using my skills well in the beginning, but got more comfortable as I went along.”

Each of the faculty and the graduate student participants in this study frequently explained the importance of the ability to see not only recordings of themselves, but to see other student sessions as well, and also to be able to go back and review past sessions. All of the participants explained the importance of feedback from other students and from the professors.

In summary regarding the theoretical framework used in this study, Howard Gardner (2006b) explains that he defines understanding “as the capacity to take knowledge, skills, concepts, facts learned in one context, usually the school context, and use that knowledge in a new context, in a place where you haven’t been forewarned to make use of that knowledge” (p. 134). The Landro system enables the students in the Counseling Education program at Indiana University of Pennsylvania to understand more clearly what occurs in their counseling training sessions with clients, to analyze details of specific segments of their sessions, and to reflect on how they have performed their role as a counselor educator and how they can improve in future sessions.

Suggestions for Improvement of the Landro System

Several interview questions directly asked for suggestions for improvement of the Landro system. Nearly all of the faculty participants and graduate student participants discussed the need for the Landro system to be made portable so it can be taken out into the field to record sessions, and to provide the ability to take the Landro system home or to other locations, so clipping and coding and reviewing can be done more conveniently. A laptop version of the Landro system has recently been developed by IRIS Technologies, and that may solve the issues of portability and the ability to clip and code at more convenient locations.

Several participants addressed the obsolescence of the current Landro system and concerns about lack of availability of replacement parts, and therefore the need to replace the Landro system with new hardware and software. Two faculty participants are concerned that the Landro system is not compatible with the Microsoft Windows7 operating system and, therefore, prevents the upgrade of the office computers connected to the Landro system, thus creating potential security issues when Microsoft stops releasing upgrades to the Windows XP operating system. IRIS Technologies no longer makes hardware, but recently released a new version of the Landro software that is compatible with Microsoft Windows7. Commander, the device that routes the audio and video from the observation rooms to faculty offices and classrooms, as well as to the classrooms, is no longer made. However, there are several similar routing systems on the market that are manufactured by other companies.

Several participants addressed the need to be able to have compatibility between the main campus and the branch campuses of the university so that recorded session files

could easily be moved between sites. One faculty participant suggests the desirability to have a file server which can be used to store recorded files with clips and codes, and then access those files from any location through a secure connection. A file server can also provide for the storage of many semesters of recordings, providing the ability to be able to review student progress not only during a semester, but over their entire time in the counseling education program. The price of file storage has dropped significantly in recent years and the increased speed of data transmission provides the opportunity to create central storage of the recorded files, and the ability to access the files from off campus locations.

Recommendations for Future Research

While there have been many studies about various tools used in counselor education training, as discussed in chapter 2 of this dissertation, this dissertation focuses on a technology based system which has changed the way faculty are teaching and students are learning. Prior to this study, one doctoral dissertation (Cole, 2006) explored the use of the Landro system for football coaching, and a master's thesis (Thomas, 2009) explored the use of the Landro system in analyzing stuttering in participants in a speech-language pathology program. This qualitative study has explored the impact the Landro system has had on both teaching and learning in counselor education training from the perspective of both the faculty and the students.

The Landro system has made a significant impact on the IUP counselor training program. Other universities have adopted the Landro system (see Appendix H), some for counselor training, some for speech and hearing, several for psychology and, of course, many universities are using the Landro system for football coaching. Studies of the use of

the Landro system in other disciplines may yield additional insights into the benefits of the system.

Since other universities are using the Landro system, a study could be conducted to compare how it is being used at other institutions. The comparison could be between similar disciplines at different institutions, or could compare different approaches utilizing the Landro system.

Since a laptop version of the Landro system has recently been developed by IRIS Technologies, a study of how this latest version of the Landro system can be utilized to enhance educational training and provide more flexibility and opportunities should provide a wealth of information. The laptop version of the software will provide opportunities not only for conducting observations in the field, but also provide the ability to analyze the recorded data at home and other convenient locations.

A potential quantitative study could look at archival data such as student grades prior to the implementation of the Landro system compared to student grades after implementation of the Landro system.

Another interesting line of research could involve investigating other software that allows for the clipping and coding of recorded video and audio information. While the Landro system, after an extensive search, was the only system that met the needs of the IUP Counseling Department in 2004, other companies have recently released software that allows for many of the features the Landro system affords. Even software such as NVivo (QSR International, 2010), used to help in the analysis of this study, provides for the ability to clip and code segments of recordings, and may be useful in

providing many of the features which are important in the Landro system for counselor education.

Summary

This qualitative study of the impact the IUP counselor training and clinical observation system has had on teaching and learning should be very useful as other universities explore ways to enhance their counselor training programs. This study should also help the IUP Counseling department continue to improve their observation system. In addition, other training and clinical programs at IUP and other universities should be able to use the results of this study to determine if a training and clinical observation system similar to this one would be appropriate for their programs.

In this qualitative study, the study site was described, and the two groups of participants, seven IUP Counseling Department faculty and five graduate students enrolled in the counseling program at IUP, were described regarding their demographic, educational, and work experience backgrounds, as well as their technological skills and technological knowledge levels. The 58 questions in the 7 faculty interviews and the 46 questions in the 5 graduate student interviews were coded and analyzed by the researcher using the NVivo 9 (QSR International, 2010) software to assist in exploring themes and trends in the responses. Individual responses to the interview questions, along with trends which emerged from the responses, were discussed in detail in chapter 4 of this study. In many cases, trends not only emerged from members of the two individual interview groups, but most of the time similar trends emerged from both the faculty participants and the graduate student participants combined.

Many themes and trends were revealed and explored as the interview responses were evaluated throughout this study. Among those were changes made to courses and syllabi, effectiveness of the Landro system for teaching and for learning, ease of use of the Landro system, training issues, transparency of the technology to the client and to the student, and various anxiety issues. Another major theme which arose throughout the interviews is the way the Landro system aids in reflection and feedback as students progress through their classes. Additional themes and trends explored include problems encountered with utilization of the Landro system, limitations of the Landro system, obsolescence of the Landro system as new technologies and systems emerge, and both the positive and negative aspects of the current Landro system. In addition, various interview responses were explored regarding the different learning styles of students and how the Landro system facilitates teaching and learning in multiple ways, and also enables repetitive reviewing and learning.

Based on the feedback from the seven faculty participants and the five student participants, this study shows that the counselor training and clinical observation system in the Counseling Department at Indiana University of Pennsylvania had a significant impact on both learning and teaching. Faculty members incorporated the Landro Play Analyzer into their courses and the system changed the way students learn counseling skills. The Landro system provides innovative ways for students to record, review, clip and code, and reflect on their counselor training sessions. The system provides the opportunity for faculty members to more effectively review counseling sessions of their students, and even have the ability to watch sessions live from their offices. Professors can provide instant feedback to students during counseling sessions when needed.

Reinforcement of counseling concepts and techniques is enhanced by the Landro system due to the capability to review, clip and code, and compare progress over time. When issues regarding anxiety were discussed in the interviews, several faculty and student participants explained that it is not the Landro system, but just the process of being recorded, that creates anxiety.

As mentioned earlier in this chapter, Gardner (2006a) stresses "important materials can be taught in many ways, thereby activating a range of intelligences and consolidating learning" (p. 84). The Landro system provides the ability to teach and to learn in multiple ways, and provides the ability for students to review their work multiple times, reinforcing the learning processes.

Since the implementation of the Landro system at Indiana University of Pennsylvania, numerous other educational institutions (see Appendix H) installed Landro systems in their Counselor Education departments and other clinical oriented departments. This study has shown that the Landro system has been a very effective system that has significantly enhanced both teaching and learning. This study has also discussed problems encountered with the Landro system, system limitations, obsolescence and newer versions of the Landro system, positive and negative aspects of the system, and suggestions for improvements for the technology enhanced counselor training and clinical observation system. This researcher hopes that this study will provide assistance to faculty and staff at other educational institutions who are exploring how they might enhance their various educational programs with an observation system such as the one installed in the Counselor Education department at Indiana University of Pennsylvania.

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APPENDICES

APPENDIX A

HUMAN SUBJECTS RESEARCH PROJECT

A. PURPOSE, RESEARCH VARIABLES, AND POPULATION

Purpose of the study

The implementation of a technology assisted counselor training and clinical observation system (the Landro system) by the faculty in the IUP Counseling Department has modified the way in which the faculty members teach and the students learn. This study will explore the ways in which the faculty members have modified their teaching to incorporate the new observation system into the curriculum, and how student learning has been changed. This study will focus on the impact on teaching and learning that the IUP counselor training and clinical observation system (the Landro system) affords, but will not focus specifically on issues regarding the training of counselors or on specific issues related to the field of counseling.

The study will involve an ethnographic type of qualitative research rather than quantitative, due to the nature of the system being studied and the way in which it is being used. Through interviews, information will be collected from those faculty and students using this new system. The interviews will also be used to gather information from those faculty and students who used previous methods. The results of the interviews will be analyzed using qualitative research tools including NVivo software.

The results of the study will be published in a doctoral dissertation, and hopefully will provide information for other institutions to be able to determine if a system such as the Landro system will be helpful for their programs.

Background

For many years, the Counseling Department at Indiana University of Pennsylvania (IUP) used a traditional observation system for counselor training and clinical observation. The system consisted of five observation rooms, each equipped with one-way windows to allow students and faculty to observe counseling sessions. The observation rooms contained an audio system to allow communication between observers and the counselor trainees. Small groups of students learned by watching through the one-way windows as other counseling students worked with clients in the observation rooms while a faculty member supervised. More recently, the observation rooms at many universities, including the Counseling Department at IUP, have been outfitted with video cameras for recording the counseling sessions. The video recordings could then be replayed at a later time, and often the counseling student would transcribe word-for-word the audio portion of the video tapes, and add an analysis of what happened during the session.

During the spring of 2004, the Counseling Department at Indiana University of Pennsylvania installed a technology enhanced counselor training and clinical observation system (the Landro system). The system was designed to replace their traditional video

tape and one-way window observation systems used for counselor training and clinical supervision. The Counseling Department at IUP began using the clinical observation system in their classes starting in the fall of 2004.

To date, no in-depth study has been conducted to determine the impact the Landro system has had on teaching and learning in the IUP Counseling Department.

Research Questions

2) What impact has the IUP counselor training and clinical observation system had on teaching and learning?
3) How have the IUP Counseling faculty changed the way they teach their students because of the IUP counselor training and clinical observation system.
4) How has the way in which Counseling students learn their counseling skills changed because of the IUP counselor training and clinical observation system?
5) How does the IUP counselor training and clinical observation system provide for student reflection and feedback as they progress through their program of study?
6) How does the IUP counselor training and clinical observation system reduce or increase the anxiety of students because their counseling sessions are recorded?

Characteristics of the Subject Population

a. Age Range- Participants are faculty and graduate students, and all will be 21 years or older.
b. Sex- Both males and females may be included.
c. Number-This study will include five faculty from the IUP Counselor Education Department and five graduate students enrolled in the IUP Counselor Education Department.
d. Inclusion Criteria- (1) Faculty from the IUP Counselor Education Department who have used the Landro system in one or more classes and (2) graduate students enrolled in the IUP Counselor Education Department who have completed at least one class that utilized the Landro system.
e. Exclusion Criteria- Anyone who does not meet the inclusion criteria above.
f. Vulnerable Subjects- It is not anticipated that there will be any vulnerable subjects included in this study. All participants will be adults who, because of their chosen profession, are schooled in the psychological dimensions of interviews and observations.

B. METHODS AND PROCEDURES

Method of Subject Selection

A request for volunteers (see Appendix B) to participate in a qualitative study related to counselor training clinical observations will be sent by the Chair of the Counseling Department to all Counseling Department faculty members who have utilized the Landro system in one or more classes. A request for volunteers (see Appendix B) to participate in a qualitative study related to counselor training clinical observations will also be sent by the Chair of the Counseling Department to all graduate students currently enrolled in the IUP Counselor Education program who have completed at least one class that utilized the Landro system. Five

faculty and five currently enrolled graduate students will be randomly selected from the two groups of volunteers.

This researcher is employed as the Assistant Dean for Technology in the College of Education and Educational Technology at Indiana University of Pennsylvania. While he works with the faculty and students in the Counseling Department and other departments within the College of Education and Educational Technology, he has no supervisory role or authority over them. His role is to assist the faculty, staff and students within the College of Education and Educational Technology with issues related to computer hardware and software and other types of technology. While some people may feel this is a dual role that may have impact on the study, it is common in qualitative research, and especially in ethnographic studies, for the researcher to be closely involved with the research subjects, and the researcher will do all he can to assure that his relationship with the subjects does not influence their responses nor his conclusions.

Study Site- All interviews of subjects will be conducted at IUP in a setting appropriate and mutually agreeable to conduct the interview. The setting will be quiet and conducive to a confidential interview.

Methods and Procedures Applied to Human Subjects

Proper protocol will be followed to safeguard the protection of the participants through the Indiana University of Pennsylvania Institutional Review Board.

The study will involve an ethnographic type of qualitative research rather than quantitative, due to the nature of the system being studied and the way in which it is being used.

As described in the "Method of Subject Selection" section above, a letter will be distributed to potential participants (both Counseling Department faculty members and graduate students in the Counselor Education program at IUP). Once potential participants have returned their signed consent forms (see Appendix C) agreeing to participate in the study, five faculty and five currently enrolled graduate students will be randomly selected from the two groups of volunteers by assigning each responder a number, then having a disinterested person pull numbers from a hat for each participant group. The researcher will then contact each participant by email to schedule the interviews.

One interview will be required of each participant, lasting approximately one hour. At this interview, a series of questions will be asked for their response (see Appendix D for copies of the questions for faculty, and Appendix E for copies of the questions for graduate students). As each question is asked, the researcher will also show an index card with the question on it so the interviewee will clearly understand the question. The interviews will be audio recorded for accuracy of data collected as agreed to in the consent form (see Appendix C). A follow-up interview may be needed in some instances to clarify or expand on responses. Interviews will be conducted at IUP in a setting appropriate and agreeable to conduct the interview. The setting will be in a setting that is quiet and conducive to a confidential interview.

The results of the interviews will be analyzed using qualitative research tools including NVivo software. The identity of all participants will be reported anonymously in the dissertation study by assigning each participant a code or pseudonym rather than using their real names or positions.

All data will be kept in a locked file cabinet in the primary investigator's residence for a period of no less than three years. Digital recordings will be kept on a secure computer and files will be password protected on a computer at the primary investigator's residence for a period of no less than three years.

C. RISKS/BENEFITS

Potential Risks- This study poses minimal risk to participants.

Protection Against Risks- The researcher is dealing with and minimizing risks to the participants, even though he is in a dual role, as discussed in Methods of Subject Selection above. The researcher will do all he can to assure that his relationship with the subjects does not influence their responses nor his conclusions. An expert panel reviewed all of the interview questions and the interview process, and the expert panel members felt that none of the questions posed a risk to the subjects. All subjects are 21 years or older.

Potential Benefits- The results of the study will be published in a doctoral dissertation, and hopefully will provide information for other institutions to be able to determine if a system such as the Landro system will be helpful for their programs.

Compensation for Participation- No compensation will be provided for participation in this study.

Alternatives to Participation- There are no alternatives to participation in this study.

Information Withheld- No information will be purposely withheld from study participants.

Debriefing- There is no debriefing planned for participants, however a follow-up session may be arranged with participants if additional clarification is needed for some of their responses.

D. CONFIDENTIALITY

Confidentiality of data will be maintained by disassociating participants' identifying information from all data collected. When direct quotes are incorporated into findings, participants will be identified either with pseudonyms or by numeric identifiers (e.g., participant 1, participant 2, etc.). All data will be kept in a locked file cabinet in the primary investigator's residence at 137 Wren Street, Indiana, PA 15701 for a period of no less than three years. Digital recordings will be kept on a secure computer and files will be

password protected on a computer at the primary investigator's residence at 137 Wren Street, Indiana, PA 15701 for a period of no less than three years.

E. COPY OF CONSENT FORM

Please see attached Informed Consent Form (Appendix B).

APPENDIX B

IUP Administration and Leadership Studies Letterhead

INFORMED CONSENT FORM

Date
Dear (name of participant)

Technology has changed the nature of how we collect, code, save, analyze, disseminate and use information in many fields. You are invited to participate in a study that will investigate the impact of a technology enhanced system on the teaching and learning process in a university setting.

You are invited to participate in a study to be conducted by Lloyd Onyett, an Indiana University of Pennsylvania doctoral student in the Administration and Leadership program, under the supervision of Dr. Cathy Kaufman, dissertation committee chairperson and professor at Indiana University of Pennsylvania.

The purpose of this study is to explore the ways in which the faculty members have modified their teaching to incorporate the Landro system into the curriculum, and how student learning has been changed by the use of the Landro system. This study will focus on the impact on teaching and learning that the IUP counselor training and clinical observation system (the Landro system) affords, but will not focus specifically on issues regarding the training of counselors or on specific issues related to the field of counseling.

The study will involve qualitative research. Through interviews, information will be collected from those faculty and students using the Landro system. The interviews will also be used to gather information from those faculty and students who used previous methods. The results of the interviews will be analyzed using qualitative research tools including NVivo software.

The results of the study will be published in a doctoral dissertation, and hopefully will provide information for other institutions to be able to determine if a system such as the Landro system will be helpful for their programs.

One interview will be required, lasting approximately one hour. At this interview, a series of questions will be asked for your response. The interview will be audio recorded for accuracy of data collected. A follow-up interview may be needed in some instances to clarify or expand on responses. Interviews will be conducted at IUP in a setting appropriate and agreeable to conduct the interview. The setting will be in a setting that is quiet and conducive to a confidential interview.

Your participation in this study is completely voluntary, and no known risks to you are involved. You are free to decide not to participate in this study, or to withdraw from the study at any time. Should you make a request to withdraw; all information pertaining to you will be destroyed. If you choose to participate, your name and other identifiable information will be held in the strictest confidence. Confidentiality of data will be maintained by disassociating participants' identifying information from all data collected. When direct quotes are incorporated into findings, participants will be identified either with pseudonyms or by numeric identifiers.

If you are willing to participate in this study, please sign the voluntary consent form attached and return in the self addressed stamped envelope no later than September 20, 2010. Keep the second copy of the voluntary consent form for your own records, along with this letter. Please contact me if you have any questions concerning your potential participation in this study.

Sincerely,

Lloyd Onyett, Principal Researcher
137 Wren Street
Indiana, PA 15701
724-388-4093
lonyett@iup.edu

Cathy Kaufman, Ph.D., Dissertation Chair
126 Davis Hall
Indiana, PA 15705
724-357-3928
ckaufman@iup.edu

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724-357-7730).

APPENDIX C

VOLUNTARY CONSENT FORM

I have read and understand the information on the attached Informed Consent Form and I consent to volunteer to be a subject in this study (A Technology Assisted Counseling Observation System: A Study of the Impact on Teaching and Learning). I understand that my name will not be used in the reporting of the results of this study. I understand that my responses are completely confidential and that I have the right to withdraw at any time. I have received an unsigned copy of this informed Consent Form to keep in my possession.

Name (PLEASE PRINT):_____

Signature:_____Date:_____

Phone number or location where you can be reached:_____

Email address:_____

Best days and times to reach you:_____

(Do not write below this line. The area below is for Primary Researcher use only)

I certify that I have explained to the above individual the nature and purpose, the potential benefits, and possible risks associated with participating in this research study, have answered any questions that have been raised, and have witnessed the above signature.

_____ _____

Date Primary Researcher's Signature

APPENDIX D

INTERVIEW QUESTIONS FOR COUNSELING FACULTY

1. What degrees and certifications do you hold, and from what institutions?
2. What is your age?
3. How many total years have you taught counseling education including all locations and settings?
4. How many of those years have you taught counseling education at IUP?
5. At what other institutions or agencies did you teach counseling education, and for how many years at each?
6. What other counseling experiences have you had?
7. On a scale of 0 to 10, with 0 meaning none and 10 meaning excellent, how would you rate your level of technology skills? Why would you rate yourself that way?
8. On a scale of 0 to 10, with 0 meaning none and 10 meaning excellent, how would you rate your level of technology knowledge? Why would you rate yourself that way?
9. In comparison to your peers, do you feel you know more, less, or about the same regarding technology?
10. Please briefly describe your theoretical orientation in counseling.
11. How would you describe what you would consider to be an excellent supervisory relationship between counseling faculty and counselor students?
12. Have you taught using the IUP counselor training and clinical observation system (the Landro Play Analyzer)?
13. If you have taught using the Landro system, for what classes have you used it?

14. If you have taught using the Landro system, how many semesters have you used it for each of those classes?
15. Did you teach counselor education classes at IUP prior to the implementation of the Landro system?
16. If you taught counselor education classes at IUP prior to the implementation of the Landro system, what classes did you teach, and for how many semesters?
17. What changes have you made to your course syllabi because of the Landro system?
18. Why did you make the changes, if any, to your course syllabi?
19. Can you provide me with a copy of your previous syllabi (prior to changing as a result of the Landro system) and your current syllabi?
20. What changes have you made to specific course assignments because of the Landro system?
21. Why did you make the changes, if any, to your assignments?
22. Can you provide me with a copy of your previous course assignments (prior to changing as a result of the Landro system) and your current assignments?
23. Do you feel the curriculum changes you have made because of the Landro system have been more effective or less effective, and why do you feel that way?

Please answer the following questions on a scale from 1 (strongly disagree) to 6 (strongly agree) with how strongly you agree or disagree with the statement. If you have not been able to observe the particular situation or example, then please mark N/A for Not Applicable.

Question	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Slightly agree	5 Agree	6 Strongly agree	0 N/A
24. The Landro system is very effective for teaching our counselor education students.							
25. The Landro system is a significantly better way to teach our students than using video tapes and transcriptions of the tapes.							
26. The Landro system is more time consuming to use by faculty than the former system of video tapes and transcripts.							
27. The Landro system is more difficult to use by faculty than the former system of video tapes and transcripts.							
28. The Landro system is more time consuming to use by students than the former system of video tapes and transcripts.							
29. The Landro system is more difficult to use by students than the former system of video tapes and transcripts.							
30. Significantly more training time is needed by faculty and students than the former system.							
31. Students are able to understand counseling concepts better using the Landro system rather than the former system.							
32. Students can experience more counseling sessions with the Landro system than they could with the former system.							
33. Students need to spend more time coding and reviewing their sessions with the Landro system than they did with the former system.							
34. Faculty need to spend more time reviewing student sessions with the Landro system than they did with the former system.							
35. Overall, the Landro system has dramatically improved the counselor education program.							

36. What changes would you make to the Landro system to make it more effective for your teaching?

37. What changes would you make to the Landro system to make it more effective for student learning?

38. What problems have you encountered with using the Landro system?

39. How often have you experienced problems with the Landro hardware?

40. How often have you experienced problems with the Landro software?

41. How has the nature of the problems changed for you in using the Landro system as you have become more familiar with using it? To what degree and what specific kinds of problems have you had as you became more familiar with using it?

42. On a scale of 0 to 10, with 0 meaning terrible and 10 meaning excellent, how would you rate the Landro system as a teaching tool for counselor education? Why do you feel that way?

43. On a scale of 0 to 10, with 0 meaning terrible and 10 meaning excellent, how would you rate how the Landro system impacts your effectiveness as a teacher? Why do you feel that way?

44. On a scale of 0 to 10, with 0 meaning terrible and 10 meaning excellent, how would you rate the Landro system as a learning tool for your students? Why do you feel that way?

45. In what ways has the Landro system negatively impacted your teaching experiences?

46. Do students who are “high tech” do better than students who are “low tech” in learning counselor concepts by using the Landro system?
47. Do you have to give up time for instruction of content in order to teach using the Landro system?
48. Is the use of the Landro system transparent to the client?
49. Does the Landro system negatively impact the student/client relationship? If so, in what ways?
50. Do you think that you are a more effective teacher when using the Landro system than you were before the Landro system?
51. How does the Landro system provide for student reflection and feedback as they progress through their program of study? How effective is the Landro in providing that?
52. Does the Landro system reduce or increase the anxiety of the students during their counseling sessions? Why?
53. If it became more costly to maintain or update the Landro system, what would you be willing to give up to keep the Landro system? Is the Landro system worth the cost?
54. Do you just use the Landro system because it is there, or how strongly do you feel it helps in the Counselor Education program?
55. Give me 5 descriptors that accurately describe the positive aspects of using the Landro system.
56. Give me 5 descriptors that accurately describe the negative aspects of using the Landro system.

57. Would you recommend the Landro system to other universities? Why?

58. What additional comments do you have regarding the Landro system?

APPENDIX E

INTERVIEW QUESTIONS FOR CURRENT STUDENTS

Without evaluating the members of the faculty, please respond to the following questions regarding the evaluation of how the Landro system aids or diminishes your learning in the Counselor Education program:

1. What degrees and certifications do you hold, and from what institutions?
2. What was your major as an undergraduate student?
3. What is your current program and class level?
4. What is your age?
5. How many years have you been involved in counseling education?
6. How many years have you been enrolled in counseling education at IUP?
7. What other counseling experiences have you had, and for how long for each?
8. On a scale of 0 to 10, with 0 meaning none and 10 meaning excellent, how would you rate your level of technology skills? Why would you rate yourself that way?
9. On a scale of 0 to 10, with 0 meaning none and 10 meaning excellent, how would you rate your level of technology knowledge? Why would you rate yourself that way?
10. In comparison to your peers, do you feel you know more, less, or about the same regarding technology?
11. Was the training you received sufficient and appropriate to learn to use the Landro system?
12. How much training time did you need in order to feel comfortable with using the Landro system?

13. How many counseling sessions have you had where you used the Landro system?

14. For what classes have you used the Landro system?

15. How much time do you normally take to mark and code your counseling sessions using the Landro system?

16. How would you describe what you would consider to be an excellent supervisory relationship between counseling faculty and counselor students?

17. Did you take any classes in counselor education at IUP that required you to do counseling sessions, but did not use the Landro system?

18. If you took classes in counselor education at IUP that required you to do counseling sessions, but did not use the Landro system, did you feel the counseling session observations were more or less effective than using the Landro system? Why do you feel that way?

19. What other tools, besides the Landro system, have you used in counselor education classes? Were they more or less effective than using the Landro system?

Please answer the following questions on a scale from 1 (strongly disagree) to 6 (strongly agree) with how strongly you agree or disagree with the statement. If you have not been able to observe the particular situation or example, then please mark N/A for Not Applicable.

Question	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Slightly agree	5 Agree	6 Strongly agree	0 N/A
20. The Landro system is very effective for teaching our counselor education students.							

21. The training for the use of the Landro system was very well done.							
22. The Landro system is very time consuming to use by students.							
23. The Landro system is very difficult to use by students.							
24. A significant amount of training time is needed to understand how to use the Landro system.							
25. A significant amount of training time is needed to understand how to code counseling sessions using the Landro system.							
26. The amount of time it takes to use the Landro system is not worth the effort.							
27. The Landro system has been very important in my learning of counseling concepts and techniques.							
28. If 2 Counselor Education programs at different universities were of equal reputation, I would choose the one that did not use the Landro system, but used some other equivalent system.							
29. Overall, the Landro system has made a dramatic impact on the counselor education program.							

30. What changes would you make to the Landro system to make it more effective for your professors for teaching course content?

31. What changes would you make to the Landro system to make it more effective for you in learning course content?

32. What problems have you encountered with using the Landro system?

33. How often have you experienced problems with the Landro hardware?

34. How often have you experienced problems with the Landro software?

35. How has the nature of the problems changed for you in using the Landro system as you have become more familiar with using it? To what degree and what

specific kinds of problems have you had as you became more familiar with using it?

36. How does the Landro system provide for student reflection and feedback as they progress through their program of study? How effective is the Landro in providing that?
37. Do students who are “high tech” do better than students who are “low tech” in learning counselor concepts by using the Landro system?
38. Is the use of the Landro system transparent to the client?
39. Does the Landro system reduce or increase the anxiety of the students during their counseling sessions? Why?
40. On a scale of 0 to 10, with 0 meaning much worse and 10 meaning much better, relative to other learning experiences, techniques, and tools used in your program, how would you rate the Landro system as a means to build your counseling skills? Why do you feel that way?
41. On a scale of 0 to 10, with 0 meaning terrible and 10 meaning excellent, how would you rate the Landro system as a teaching tool for counselor education? Why do you feel that way?
42. In what ways has the Landro system negatively impacted your learning experiences?
43. Give me 5 descriptors that accurately describe the positive aspects of using the Landro system.
44. Give me 5 descriptors that accurately describe the negative aspects of using the Landro system.

45. Would you recommend the Landro system to other universities? Why?

46. What additional comments do you have regarding the Landro system?

APPENDIX F

LANDRO PLAY ANALYZER

http://www.landro.com/fb/index.html

(Salandro, 2007b)

Landro PLAY ANALYZER

Tapeless Access to 100,000 Plays ...In Less than a Second!

Home CoachTalk GameXchange News Video Order Support

NEW! Landro for Laptop Only $1,495! Click here!

Football Edition

Go to Basketball...

Landro Podcasts

Landro Representative Opportunities

Sign up for Landro updates and a chance to win a *FREE* Digital Video Camera!

Landro Basics

What does a typical printed report from Landro look like?

What is a Landro Student Manager?

How Coaches Help Players Get Smarter...Faster

Landro vs Video Editing

Why Booster Clubs Want Landro for Coaches

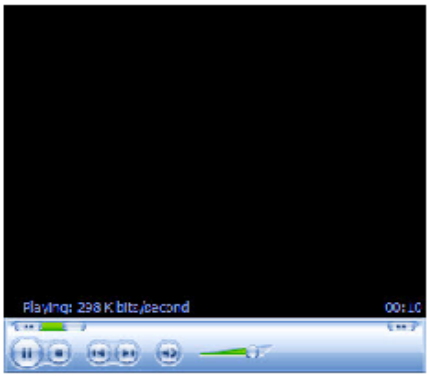
How Hard is Landro to Use?

What Else Will I Need?

Biggest Questions

New For Football Coaches

Play analyzer helps coaches review more video in 30 minutes than they could with a VCR in 10 hours!



Never rewind or fast-forward a VCR to find a play ever again...

Landro play analyzer is a presentation device used to study game videos. In fact, up to 50,000 plays or 115 games can be randomly accessed without ever using video tapes or DVDs. Designed especially for coaches, it allows you to instantly jump to plays without ever using video tape again. Click here to watch a video demo.

This new kind of digital product allows coaches to analyze their plays, study players' techniques and their opponents' tendencies... without ever using video tape. That's why it's called Landro play analyzer. It helps coaches analyze their video **100 times faster than using video tape.**

In less than a second, you can find all of your third downs...

Landro play analyzer will help you create a smarter football program by analyzing the exact plays you and your players need to study, without dealing with the miserable hassles of videotape. Never again will you have to fast-forward and rewind and search through hours of tape. Press one button and ***BAM*** you're there!

Landro is a scholarship machine! Landro creates awesome highlight tapes for recruiting purposes in seconds. No more cut and paste with multiple VCRs...

With Landro, you can find and analyze all of your third downs, or all of your defensive plays, in less than a second! You can find all pass plays, or all run plays, or all offensive plays, instantly... without ever rewinding again!

APPENDIX G

VIDEO COMMANDER

http://www.videocommander.com/

(Salandro, 2007c)

Video Commander®

Contact Us | Help

800-354-4747
Call us today!

Home | Software | Hardware | Demos | Order | Support

You Can Take Control of Your Cables

If you work with video and audio devices, you know that connecting them together is often the hardest part of using them! Sure, setting up cables *one time* isn't so bad. But when you have to keep changing cables for different tasks... putting them back... remembering which cables go where and why they are there... then the "simple" task of hooking up equipment becomes an ongoing, time-consuming nightmare.

"Video Commander is so easy to use that training time on the system is measured in minutes instead of hours."
—Robert Mack
ABC Radio Networks

more reviews...

Cables have your hands tied? Take back control with Video Commander!

The Video Commander signal routing system puts you back in control. See and understand your connections at a glance. Touch pictures of your devices on a computer screen to change the connections in seconds. There isn't anything that can compare to Video Commander for solving the hassles of cables.

Make Cable Changes in Seconds

With Video Commander, each device you work with appears on your computer screen as a button with a picture and a name. Touch a source device—maybe a DVD or a camera. Touch each destination device you want to connect to, such as monitors, projectors and recorders. Touch the "Done" button on the screen to finish the job. That's it! The devices are instantly connected, and their buttons on your screen change to their own unique color to show that they are connected.

"We have hundreds of audio and video devices. Teaching someone to use a typical routing system takes months. The Video Commander allows us to touch an icon that represents the source, then an icon for the destination, and it's done... switched and routed in less than a second. It takes about ten seconds to learn how to use it. Even the news guys can use it... but don't tell them that!"
—Phil Selby
Technical Director
CBS Sports

With cables, connecting a signal to several destinations requires external "distribution amplifiers" or causes a loss in signal quality. Not with Video Commander! The Video Commander routing hardware produces the same high-quality signal whether it's going to one destination or every destination.

see larger picture

The colors on the device buttons mean you always know what devices are connected together: just see which buttons share the same color! There's no need to follow a maze of cables or maintain a log of changes, because everything you might need to know about your connections is visible on your screen immediately.

For years our customers have been telling us they can't believe connections could be this easy!

APPENDIX H

UNIVERSITIES USING THE LANDRO PLAY ANALYZER
FOR COUNSELOR TRAINING AND OTHER CLINICAL OBSERVATIONS

Below is a list of some of the universities using the Landro Play Analyzer for counselor training and other clinical observations. The list is as of March 2011 and was provided by Mr. Jerry Salandro of IRIS Technologies.

INSTITUTION	**DEPARTMENT**
Abilene Christian University	Counselor Education
Appalachian State University	Counselor Education
Boise State University	Psychology
Boise State University	Family Studies
Buffalo State College	Speech and Hearing
Brigham Young University	Counselor Education
California State University, San Bernardino	Educational Psychology
California State University, San Bernardino	Counselor Education
California University of Pennsylvania	Counselor Education
Duquesne University	Speech and Hearing
Eastern Washington University	Marriage and Family Therapy
Fontbonne University	Speech and Hearing
Gallaudet University	Speech and Hearing
Harding University	Counselor Education
Idaho State University	Counselor Education
Indiana University	Speech and Hearing
Indiana University of Pennsylvania	Counselor Education
Indiana University of Pennsylvania	Educational Psychology
Indiana University of Pennsylvania	Speech and Hearing
Ithaca College	Counselor Education
Jackson State University	Speech and Hearing
Marshall University	Counselor Education

Marshall University	Speech and Hearing
Misericordia University	Speech and Hearing
Missouri State University	Counselor Education
Montana State University, Bozeman	Health & Human Development
North Dakota State University	Marriage & Family Therapy
North Dakota State University	Counselor Education
Northern Illinois University	Counselor Education
Pfeiffer University	Marriage & Family Therapy
Portland State University	Counselor Education
Radford University	Counselor Education
Radford University	Speech and Hearing
Richmont Graduate University	Counselor Education
Slippery Rock University	Counselor Education
Southern Illinois University, Edwardsville	Special Education
State University of New York, Cortland	Speech and Hearing
State University of New York, Buffalo	Counselor Education
Texas Christian University	Speech and Hearing
Texas Women's University	Speech and Hearing
Truman State University	Counselor Education
Universite de Montreal	Speech and Hearing
University of Akron	Counselor Education
University of Central Missouri	Speech and Hearing
University of Houston	Speech and Hearing
University of Memphis	Speech and Hearing
University of Montreal	Audiology
University of North Carolina, Greensboro	Counselor Education
University of Northern Illinois	Counselor Education
University of Northern Iowa	Speech and Hearing
University of Pittsburgh Medical Center	Speech and Hearing
University of Scranton	Counselor Education
University of Wisconsin, Eau Claire	Speech and Hearing

University of Wisconsin, Oshkosh	Counselor Education
University of Wisconsin, Oshkosh	Nursing
University of Wyoming	Speech and Hearing
University of Wyoming	Counselor Education
Vanderbilt University	Counselor Education
Walsh University	Counselor Education
Western Michigan	Counseling Psychology
Western Michigan – Grand Rapids	Counselor Education
Western Washington University	Speech and Hearing

APPENDIX I

EXAMPLES OF CODES USED FOR THE LANDRO PLAY ANALYZER

Below is a list of some of the typical codes used in the Counseling Department at Indiana University of Pennsylvania. This list was provided by Dr. Lorraine Guth and Dr. Claire Dandeneau. The codes are entered into a database within the Landro Play Analyzer software.

CONCEPTUALIZATION

Adv: Adlerian
Adv: Behavioral
Adv: CBT
Adv: Existential
Adv: Family Systems
Adv: Feminist
Adv: Gestalt
Adv: Integrated
Adv: Other
Adv: Person Centered
Adv: Psychoanalytic
Adv: Reality
Adv: REBT
Adv: Solution/Brief
BS: Affective
BS: Behavioral
BS: Case Concept. Pres
BS: Cognitive
BS: Systemic

INTERVENTIONS AFFECTIVE

Biofeedback
Body Awareness
Breathing
Countertransference Analysis
Dreamwork
Eliciting Feelings
Empty Chair
Fantasy
Free Association
Guided Imagery
Incomplete Sentences
Other
Permission to Feel
Transference Analysis

INTERVENTIONS BEHAVIORAL

Assertiveness Training
Behavioral Rehearsal
Contracting
Guided Imagery
Other
Physiological Recording
Role Playing
Self-Management Plan
Social Modeling
Social Skills Training
Systematic Desensitization

INTERVENTIONS COGNITIVE

ABCDE Analysis
Agenda Setting
Agenda Working
Bank Statement
Bibliography
Brainstorming
Closing Summary
Coaching
Cost Benefit Ratio
Daily Thought Log
Downward Arrow
Evidence Chart
Feedback
Homework Assignment
Media Tapes
Mood Check
Pie Chart
Plan Next Session
Problem Definition
Pros and Cons
Reframing
Review Previous Session
Script Analysis
Six Hats
Thought Stopping
Triple Column Technique
Utility Chart

INTERVENTIONS SYSTEMIC

Addressing Alliances
Addressing Subsystems
Addressing Triangulation
Boundaries
Disengagement/Diff
Enmeshment
Genogram
Other
Reframing
Shifting Alliances
Shifting Triangulation

CLIP EVALUATION

1=Highly Ineffective
2=Moderately Ineffective
3=Somewhat Effective
4=Moderately Effective
5=Highly Effective

SUPERVISOR COMMENTS

Conceptually Congruent
Conceptually Incongruent
Growth Needed
Highlight for Class
Inappropriate Response/Beh
Outstanding Empathy
Outstanding Intervention
Outstanding Skills
See Me Now
Significant Growth
To Discuss in Supervision

CLIP FOCUS

Client
Counselor
Group

CLIENT PRESENTATION

Affect
Behavior
Cognition
System

INDIVIDUAL RESPONSE TYPE

Accent
Acknowledgement of Nonverbals
Advanced Empathy
Challenging
Closed Question
Closure
Confidentiality
Counselor Roles
Goal Setting
Interpreting
Logistics
MVR
Needs/Wants
Open Ended Question
Paraphrase
Probe
Problem Definition
Reflection of Feeling
Request for Clarification
Self-Disclosure
Silence
Summary of Cognitive Content
Summary of Feelings
Unstructured Invitation

GROUP EVENTS

Deep Disclosure
Feedback Member to Member
Here & Now Discussion
Key Event
Norm Challenging
Norm Example
Norm Reinforcing
Norm Setting
Sub Group Identification

GROUP RESPONSE TYPE

Addressing Here & Now
Addressing Here & Then
Addressing There & Then
Cutting Off Group
Cutting Off Individual
Deepen Focus
Drawing Out Group
Drawing Out Individual
Encouraging the Group
Encouraging the Process
Hold Focus
Linking
Mini-Lecture
Model Self-Disclosure
Question Process/Norm
Reflection Affect Process/Norm
Reflection Process/Norm
Scan & Verbalize
Shift Focus
Statement of Process/Norm
Use of Exercise