EXAMINING DISTANCE EDUCATION IN TEACHING CLINICAL

COUNSELING SKILLS TO REHABILITATION COUNSELORS- IN-TRAINING

by

Lisa Degiorgio

_____

A Dissertation Submitted to the Faculty of the

DEPARTMENT OF SPECIAL EDUCATION, REHABILITATION, AND SCHOOL

PSYCHOLOGY

In partial fulfillment of the requirements
for the Degree of

DOCTOR OF PHILOSOPHY

WITH A MAJOR IN REHABILITATION

In the Graduate College

THE UNIVERSITY OF ARIZONA

2009

THE UNIVERSITY OF ARIZONA
GRADUATE COLLEGE

As members of the Dissertation Committee, we certify that we have read the dissertation prepared by Lisa Degiorgio entitled

Examining Distance Education in Teaching Clinical Counseling Skills to Rehabilitation Counselors- in –Training

and recommend that it be accepted as fulfilling the dissertation requirement for the

Degree of Doctor of Philosophy

_____ Date: 2/4/2009
Charlene M. Kampfe

_____ Date: 2/4/2009
Amos P. Sales

_____ Date: 2/4/2009
Susan F. Moore

_____ Date: 2/4/2009
Philip E. Callahan

Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copies of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

_____ Date: 4/13/2009
Dissertation Director: Charlene M. Kampfe

STATEMENT BY AUTHOR

This dissertation has been submitted in partial fulfillment of requirements for an advanced degree at the University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this dissertation are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: Lisa Degiorgio

ACKNOWLEDGEMENTS

I am so grateful for my family and friends who offered support, love and encouragement over these last six years. While many of you questioned my desire to return to school and worried about my future, you never tried to talk me out of, or offered words of discouragement. The accomplishment could not have happened without each of you.

I owe a special thank you and acknowledgement to Dr. Charlene Kampfe. Your kindness and gentle nudging were appreciated. Your APA style reminders and helpful edits have help to produce a strong and clear manuscript. You have been a wonderful mentor and strong example of dedication to our profession.

Thank you all.

TABLE OF CONTENTS

TABLE OF CONTENTS - *Continued*

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This exploratory study was designed to examine counseling skill acquisition for Rehabilitation Counseling education students enrolled in a distance education Practicum I course. The course utilized interactive television (ITV), Desire 2 Learn (D2L), a course management system, and some formalized group meetings for curriculum delivery. Students were asked to provide two audio recordings that served as pre-test and post-test measures of counseling skills. Recordings were analyzed by two evaluators. In addition to the recordings, students completed two survey instruments, an initial demographic questionnaire and a survey of attitudes towards the use of technology in the course that was completed along with the post-test recording. A comparison of pre-test and post-test means on the audio recordings revealed no significant change in counseling skills for students enrolled in this course. There was an increase in the number of empathetic responses, clarifying statements, paraphrasing, questions and closing statements on the post-test recordings but a decrease in attending responses and opening statements. Survey findings indicated that students perceived distance education to be an effective use of their time and improved the quality of course interactions. Students also reported that technology made interacting with their peers difficult and somewhat impersonal. Approximately half of the students agreed that they were comfortable with the course technology. A majority to students indicated they would have preferred a traditional approach to learning counseling skills. These findings have implications for counseling programs currently utilizing ITV or webconferencing to deliver clinical skills courses. It may have broader implications for other clinical skills training programs delivering training via other distance education modalities.

CHAPTER ONE

INTRODUCTION

Rehabilitation counseling education (RCE) programs have utilized technology to provide degrees and courses via distance education to train "qualified professionals" since 1993 (Davis & Yazak, 1995). Several researchers in the field of rehabilitation counseling have examined the adoption of technology into RCE programs but have not explored counseling skill development using distance education (DE). In the broader field of education, comparison studies of traditional versus distance education courses have revealed no significant differences in outcomes between the two mediums; however, no studies of clinical skills training via distance education have been conducted in rehabilitation counseling or in the broader field of counseling. The intention of this study was to examine skill acquisition for rehabilitation counseling graduate students enrolled in a distance education clinical skills course.

Background

The use of distance education for course delivery across university settings has increased over the last decade (National Center on Education Statistics, 2004; Northrup, 2002). According to results from the National Center for Education Statistics, published in August 2003, 55% of all 2-year and 4-year institutions offered distance education courses at either the undergraduate or graduate/first-professional level. The growth in distance education in RCE programs parallels that of general education programs, and has been consistent over time. Beginning in 1993, three grants were awarded to Utah State University, University of Northern Colorado, and San Diego State University, with the purpose of

providing education and training via distance education (Davis & Yazak, 1995; Eldredge, et al., 1999; Stebnicki & Glover, 2001).

At present, 54% of RCE programs offer one or more courses via DE, and 38% of accredited programs offer degrees via DE (Council on Rehabilitation Education, 2005). These programs have adopted many forms of technology in order to provide instruction, using DE, to their students. Degiorgio and Kampfe (2008) surveyed CORE accredited rehabilitation counseling programs and identified which types of technology were being utilized in each of the required rehabilitation courses. A majority of survey respondents reported using email, course management systems, discussion boards and e-reserves in required rehabilitation courses. Fewer programs reported using interactive television (ITV), teleconferencing, and webconferencing to deliver courses. Approximately 5% of survey respondents reported utilizing ITV, teleconferencing and webconferencing in Practicum and Internship courses.

As with any shift in method or medium, questions have arisen regarding the effectiveness and quality of DE (Clark, 1983; Davis & Yazak, 1995; Kauppi, 1999; Smart 1999). Researchers have used meta-analysis to address these questions (Machtmes & Asher, 2000; Zhao et al., 2005), and have found no significant differences in outcomes between traditional and distance education courses. No peer-reviewed publications examining the effectiveness of DE when teaching counseling skills have been identified in the counseling education literature.

Significance of the Problem

Although technology is being utilized by RCE programs to deliver courses and entire degree programs via distance education, there is limited information about the effectiveness of distance education in rehabilitation counselor preparation, specifically in the areas of counseling skills development. The purpose of this research was to measure the degree to which distance education is effective in teaching clinical skills to rehabilitation counseling students.

The research questions guiding this proposal were:

RQ1: Do counseling skill levels improve from the beginning of Practicum I to the end of Practicum I for practicing rehabilitation counseling (RC) graduate students who are receiving instruction via distance education.

RQ2: How does the use of technology impact RC students' experiences in a clinical counseling skills course?

<div align="center">Rationale for the study</div>

Thirty-eight percent (38%) of the 88 accredited rehabilitation counselor education (RCE) programs are providing masters degrees using distance education (CORE, 2005). At present, limited data exist in the rehabilitation literature regarding outcomes of these programs. Articles in the field of rehabilitation counseling education support and encourage the utilization of distance education (Armstrong, 2003; Crimando, Flowers & Riggar, 2004; Eldredge et al., 1999; Moore et al., 2005; Smart, 1999); however, no studies have been conducted that examine the effectiveness of distance education using an experimental methodology. Moreover, no studies have been conducted, in the field of RCE, to determine the effectiveness of clinical skills development when using distance education mediums.

Definition of Terms

Distance education: utilization of technology to transcend temporal and geographic boundaries to provide instruction.

Counseling and Counseling Related Education Programs (CACREP): national accrediting organization for counselor education programs.

Council on Rehabilitation Education (CORE): national accrediting organization for rehabilitation counselor education programs.

Practicum I: includes classroom experiences dealing with rehabilitation counseling concerns and clinical experiences (on and off campus) that facilitate the development of basic counseling skills. The Council on Rehabilitation Education require that students have a minimum of 45 clock hours of supervised rehabilitation counseling practicum.

Clinical counseling skills: demonstration of facilitative conditions, basic counseling responses, specific counseling techniques, and reflection. These skills are gain through practice and are initially taught in Practicum courses.

Simple technology: refers to a model of technology adoption that describes the complexity and convenience of technology. Simple technology refers to types of technology which are widely available to facilitate communication and interaction between students and instructors. Examples of simple technology include email exchanges, facsimiles, telephones and voicemail.

Moderate technology: refers to a model of technology adoption that describes the complexity and convenience of technology. Moderate adoption involves use of the Internet or Intranet to replace traditional information dissemination practices. Moderate technology

improves or enhances classroom communication. Examples of moderate technology may include web sites, course management systems, listservs and chat rooms.

Complex technology: refers to a model of technology adoption that describes the complexity and convenience of technology. Complex technology involves the use of a two-way telecommunication system where content and instruction is provided "face-to-face" rather than in person. Examples of complex technology include, ITV and web conferencing.

Total technology: refers to a model of technology adoption that describes the complexity and convenience of technology. Total technology means a substitution of the traditional academic experience. This is often referred to a "virtual approach," meaning that a student may not ever meet his peers or the instructor. Access to university services and materials can be accesses without ever having to attend a physical location.

Interactive Television (ITV): A close circuit television system that allows images of the instructor to be broadcast to remote sites. ITV utilizes television screens and network connections to provide an interactive learning environment. Viewers are able to interact with students and the instructor.

Desire 2 Learn (D2L): Is a version of a class/course management system. The system provides students and faculty a forum to communicate and interact. Common elements found in case management systems are chat rooms, discussion boards, quizzes and tests, and electronic reserves. Course management systems rely on a computer to provide much of the learning environment.

CHAPTER TWO

LITERATURE REVIEW

The introduction of the personal computer, the internet, and educational software, as well as increased connection speed and efficiency has enabled many students to participate in higher education courses and degree programs (McIssac & Gunawardena, 1996; Rea, White, McHaney, & Sanchez, 2000). Using technology to provide distance education (DE) has increased access to higher education for many traditionally underserved students. Limited access to higher education has tended to disproportionately impact students with disabilities, students living in rural areas and students who work full-time (Gilbride, Breithaupt, & Hoehle, 1996; Moore et al., 2005; National Center on Education Statistics, 2004; Rea et al., 2000; Stevens, Dobrovolny, Kent, & Shulman, 2002; Wantz, Tromski, Mortsolf, Yoxtheimer, Brill, & Cole, 2003). It is anticipated that universities and colleges will continue to invest in technological advances in order to provide more opportunities for students to participate via distance education (Rea et al.).

During the 1990s, Rehabilitation Counselor Education (RCE) programs identified a need to train "qualified" rehabilitation professionals. A 1998 amendment to the Rehabilitation Act required the hiring of "qualified" rehabilitation professionals to provide rehabilitation counseling. Qualified rehabilitation professional is defined as having a Masters degrees and certification as a rehabilitation counselor (CRC). RCE programs began investing in technology as way to meet the legislative requirements and to deliver instruction to students with limited access to traditional education programs (Eldredge et al., 1999; Smart, 1999). In 1993, three training grants were awarded to Utah State University,

University of Northern Colorado, and San Diego State University, with the purpose of providing rehabilitation education via distance education (Davis & Yazak, 1995; Eldredge et al., 1999; Stebnicki & Glover, 2001). Degiorgio and Kampfe (2008), in a survey of RCE program coordinators, found that 90% of RCE program directors who responded to the survey, indicated that their programs were utilizing some form of technology to communicate with students, provide instructional materials, or deliver an entire course via distance education (Degiorgio & Kampfe, 2008).

The following pages will describe technology adoption in distance education, review the history of distance education in rehabilitation counseling, examine the effectiveness of distance education versus that of traditional education, and provide an overview of clinical training for the field of counseling.

<div align="center">Adoption of Technology and Distance Education</div>

Much of the growth of distance education can be attributed to advances in technology (McIssac & Gunawardena, 1996). Utilization of technology and the adoption of technology into educational programs are influenced by several factors, including current resources, funding, administrative support, technical support and long-term program objectives. Rea and colleagues (2000) developed a model of technology adoption that describes four categories that reflect the complexity of the technology and the impact that technology has on students and instructors. The categories are simple, moderate, complex, and total adoption of technology (Rea et al.).   The model is a useful tool for describing and organizing elements of technology that are often associated with course development and delivery.

Simple technology refers to types of technology that are widely available to educators and students and that facilitate communication and interaction. Examples of simple technology that have been incorporated into counseling education programs include voicemail, fax machines, and email exchanges (Degiorgio & Kampfe, 2008; Quinn, Hohenshil, & Fortune 2002; Rea et al., 2000; Wantz et al., 2003). Simple technology increases access of the students to faculty and faculty to their students. Messages and responses can be submitted at all hours and from any location; unfortunately, greater convenience can lead to a sense of immediacy which often places greater demands on faculty time to respond to students in a "timely manner" (Rea et al.).

Degiorgio and Kampfe (2008) surveyed RCE program coordinators and found that 98% were using email in one or more rehabilitation counseling education courses. Stebnicki and Glover (2001) reported using email and listservs as means for facilitating communication during a practicum course with favorable perceptions given by students and instructors. The favorable perceptions and high rates of use of email in RCE programs may be due, in part, to the convenience and flexibility offered by simple technology, or the relative comfort of instructors in using email (Rea et al., 2000).

Incorporating moderate forms of technology involves an increase in complexity of strategies and tools. Moderate technology involves using the Internet (or Intranet) to replace traditional teaching elements such as syllabi, course handouts, additional readings, and class notes (Lundgren, 2000; Rea et al., 2000). These elements are accessed from a website. Email, listserv, chat, and course management systems (CMS) (e.g., WebCT, Blackboard, or

D2L) may be incorporated into courses to facilitate communication, improve access to content, and promote interaction.

Survey responses from counseling education programs have revealed that course management systems are being utilized in Counseling and Counseling Related Education Programs (CACREP) and Council on Rehabilitation Education (CORE) accredited programs with varying degrees of success and instructor comfort (Quinn et al., 2002; Wantz et al., 2003). Other moderate technological tools have been utilized for clinical supervision of general counseling (Watson, 2003) and of rehabilitation counseling students (Schultz & Finger, 2003; Stebnicki & Glover, 2001). Degiorgio and Kampfe (2008) described utilization rates of moderate adoption of technology in RCE programs and found that, of survey respondents, CMS utilization ranged from 44% to 65%. CMS were incorporated most frequently into Principles of Rehabilitation, Medical Aspects and Psychosocial Aspects courses. RCE programs also often utilized discussion boards. Utilization of discussion boards ranged from 33% to 59%, and discussion boards were more frequently utilized in Principles and Medical Aspects than in other required rehabilitation courses. Perhaps, aspects of Principles and Medical Aspects lend themselves more readily to adoption of moderate technology.

Complex technology, as defined by Rea and colleagues (2000), combines elements of moderate technology with "two-way telecommunication technology" (p. 146). Streaming audio and video and ITV are examples of complex technology. These mediums provide face-to-face, often synchronous, contact between the instructor and student. Complex technology offers perceived stability for students because of its similarity to a traditional

classroom (Northrup, 2002). It also provides students with the opportunity to participate from remote locations, such as their homes or places of work. The added convenience and flexibility requires additional hardware, software, and technical support adding to cost and frustration of students and instructors who may have limited experience with the technology (Amick & Wesley, 1999; Fulford & Zhang, 1993; Northrup, 2002; Rea et al.).

Degiorgio and Kampfe (2008), in their study of technology utilization in RCE programs, found that of the program coordinators who responded, 21% indicated that their RCE programs utilized ITV, 23% utilized teleconferencing, and 18% utilized webconferencing to delivery courses to their students in one or more courses. Additionally, rehabilitation educators utilizing ITV, teleconferencing, and webconferencing, have incorporated email, CMS, discussion boards, e-reserves, and listservs into their courses (Degiorgio & Kampfe).

Total technology adoption abandons the traditional learning environment (Rea et al., 2000). Students may register for a course, pay their tuition, buy textbooks, and complete the course without ever setting foot on campus, and having never met their peers or the instructor. Typically, total technology incorporates several of the previously discussed methods to accomplish its instructional goals. This method may be very convenient for students and faculty, however; some students report feeling isolated during the experience (Rea et al., 2000). While conducting this review, no information could be found regarding the use of total technology in counselor education programs.

Adoption of technology into educational settings can occur without providing education at a distance (Rea et al., 2000; Wantz et al., 2003). Educators may elect to adopt

simple and moderate forms of technology in order to facilitate communication and increase

convenience in their traditional courses (Rea et al). Currently, RCE programs are utilizing

various types of technology designed to enhance student access, communication and

understanding, as well as providing distance education and course delivery (Degiorgio &

Kampfe, 2008).

<center>Distance Education in Rehabilitation Counseling</center>

As indicated earlier, distance education in RCE can trace its beginnings to the

awarding of training grants to Utah State University, University of Northern Colorado, and

San Diego State University (Davis & Yazak, 1995; Gilbride & Stensrud, 1999; Smart, 1999).

Since that time, a number of articles have described the use technology to provide distance

education in RCE programs and the potential benefits and challenges it brings to counselor

education (Amick & Wesley, 1999; Armstrong, 2003; Crimando, et al., 2004; Eldredge et al.,

1999; Gilbride & Stensrud; Harley, Jolivette, McNall, 2004; Kauppi, 1999; Mansouri, 2003;

Moore et al., 2005; Russell, Dudgeon, Deitz, & Johnson, 2003; Smart; Taylor, Riggar,

Moore, & Turner, 1999; Warn, 1999).

Articles regarding RCE and distance education seem to address three broad

categories: student perceptions (Gilbride, et al., 1996; Gilbride & Stensrud, 1999; Mansouri,

2003; Moore et al., 2005; Stebnicki & Glover, 2001), pedagogical practices (Amick &

Wesley, 1999; Armstrong, 2003; Crimando et al., 2004; Davis & Yazak, 1995; Smart,

1999;Taylor et al., 1999), and current trends in distance education (Harley, et al., 2004;

Schultz & Finger, 2003; Stebnicki & Glover). Each of these categories will be reviewed.

Student Perceptions

Reports in the RCE distance education literature are consistent with reports of student satisfaction, retention, and performance found in the broad field of counseling disciplines (Eldredge et al., 1999; Hayes, Taub, Robinson, & Sivo, 2003). Eldredge and colleagues reported high rates of satisfaction among students in distance education courses. Other rehabilitation researchers found that rehabilitation counseling students seemed to prefer taking online courses to traditional courses because of the flexibility and convenience they offered (Hansmann, Lightfoot, & Saladin, 2007; Mansouri, 2003; Moore et al., 2005). Students taking courses online also perceived their quality of learning as equal to or better than students enrolled in traditional educational programs (Mansouri, 2003). Moore and colleagues, in a study examining student perceptions of web-based learning found five positively perceived benefits: schedule flexibility, improved computer and Internet skills, interaction and peer relationships, useful materials, and information exchange. Three negative themes emerged: problems with technology, feeling disconnected, and too much material in the course. Comments made by the students in the study seem to suggest that students appreciated the convenience and flexibility distance education accords busy professionals and, in many instances, this compensated for the occasional problem with technology. Many students perceived technology negatively, noting technical difficulties in accessing materials and interacting with peers. Similar findings were identified by Hansmann and colleagues in their qualitative research on students' perceptions of an on-line RCE course. Nevertheless, many students positively perceived technology and found that their computer skills improved and comfort with computers and technology increased during the course. Gilbride, Breithaupt, and Hoehle (1996) described similar experiences in their

description of the Internet as a tool to support distance and traditional students. Students in this article reported that email and the Internet were useful and fun forms of technology. While comments regarding use of a listserv were mixed, nonetheless, accessibility and ease of communication with the instructor and graduate assistants were rated very highly by the students.

Stebnicki and Glover (2001) described the use of the Internet as a complementary approach in providing clinical supervision to rehabilitation counseling students. The researchers examined the email exchanges of masters degree rehabilitation counseling students enrolled in a 16-week practicum experience. At the conclusion of the practicum, students' responses seemed to indicate that email communication allowed them greater access to the instructor, provided more immediate feedback with ongoing support, and provided time to process and clarify thoughts about their individual sessions.

Eldredge and colleagues (1999) indicated that there were no perceived differences in academic quality between distance education and traditional education. Moreover, it appears that rehabilitation counseling students appreciated the flexibility and convenience of distance education courses (Gilbride, et al., 1996; Hansmann, et al., 2007; Moore et al., 2005; Stebnicki & Glover, 2001), and believed that the quality of their experience was equal to that of their traditional classroom peers (Eldredge et al., 1999; Mansouri, 2003). The adoption of technology by RCE programs has transformed communication between students and instructors. Students seemingly favor the use of email as a means to communicate with the instructor about courses, as well as to receive feedback on counseling skill development.

Instructor accessibility and availability has become an expectation of TE and DE students (Rea et al., 2000).

Pedagogical Suggestions

Several articles have been written that provide recommendations and suggestions for successfully incorporating distance education and technology into rehabilitation curriculum (Amick & Wesley, 1999; Crimando, et al., 2004; Davis & Yazak, 1995; Leech & Holcomb, 2004; Russell et al., 2003; Smart, 1999). Activities and strategies for teaching distance education courses are also included by the authors.

Leech and Holcomb (2004) described their use of Bloom's taxonomy for creating and expanding a web-based delivery system at the University of South Carolina. Educators sought to examine the equivalency and accessibility of education for persons with disabilities, which led to an examination of instructional methods and distance education methods (synchronous and asynchronous). Course materials, including syllabi, assignments and examinations were reviewed and "areas of competence" and "method of demonstration" of competence were identified using Bloom's definition and language cues (Leech & Holcomb). A final analysis was conducted and the educators selected several distance education methods that complimented and enhanced their current curriculum and course objectives. Asynchronous technologies included in the curriculum were a website that provided course syllabus and supplementary materials, web lectures, regular student postings, and some video presentations. Synchronous technologies included web conferencing, instant messaging between faculty and students, and telephone conferencing as

mandated by the instructor. This type of course examination may assist other RCE programs in examining technological and academic needs.

Rehabilitation researchers have emphasized the importance of using learning theory to provide a foundation for distance education formats (Amick & Wesley, 1999; Crimando, et al., 2004). Crimando and colleagues provided a thorough examination of learning strategies and activities grounded in pedagogical theory and appropriate for DE. Practical online suggestions and activities based on cooperative learning, motivational theory, and adult learning theory were provided for readers. Recommended activities included advanced organizers, class and small group discussion, instructional games and jigsaw learning. In addition, Amick and Wesley (1999) defined adult learning theory and how this theory can assist educators in overcoming "obstacles" in distance education. In each of these articles (Amick & Wesley; Crimando et al.), educators were reminded that while technology may provide new "bells and whistles," its introduction into a course should be founded in theory and contribute to learner needs and course objectives.

Moore and colleagues (2005), who examined perceptions of rehabilitation students in a web-based course, suggested that a thorough needs assessment be conducted prior to conducting an online course. Assessing student needs through use of a formal survey is likely to ensure that adequate hardware, software, and technical support are available to students. Addressing these needs prior to students beginning a course may reduce student frustration with distance learning.

Using the RCE literature, it seems that rehabilitation educators appreciate distance education (Gilbride & Stensrud, 1999; Russell et al., 2003) and the benefits it brings to

students, including flexibility, convenience (Gilbride & Stensrud, Russell et al.; Stebnicki &

Glover; 2001), and access to graduate programs (Eldredge et al., 1999; Smart, 1999).

Adoption and expansion of technology in RCE programs continues to provide rehabilitation

researchers with opportunities for exploration and examination of pedagogical practices

(Degiorgio & Kampfe, 2008).

Trends

Articles that describe trends in the rehabilitation distance education literature describe

technology that has been adapted or adopted into RCE programs or explore the use of

alternative education methods. One such example is the work by Harley, Jolivette, and

McNall (2004) who assert that the use of distance education and technology may generate the

development of an accelerated graduate rehabilitation counseling program. The authors cited

training and retention issues that are facing the profession of rehabilitation counseling and

suggest accelerated learning as one way to address the personnel shortage. In addition, the

authors described the type of learner who might be interested in such a program, as well as,

who might be most successful. Learners who would be interested in a distance education

accelerated program typically fall into three general categories. The first category contains

students who are self-directed with specific learning goals. The second contains students who

are interested in obtaining a specific degree or specialization. Moore, as reported by Harley

and colleagues, refers to these students as "motivated for a specific….accreditation" (p. 127)

The third type of learner category is composed of students who may see education as way to

gain independence. Students who may be most successful in an accelerated program "exhibit

high levels of attention," have the ability to integrate classroom information with life and

work experiences, and rely on other areas of knowledge and skills outside of the course content. Accelerated learning may challenge the current accreditation, evaluation and licensure process; however, the rationale put forth by the authors is worth considering.

In the field of counseling, computer aided instruction (CAI) and computer simulations have been used to help counselors-in-training to acquire skills and professional competence. Sharf and Lucas (1993) developed a computer simulation of counseling skills in order to measure and evaluate counseling skills. One hundred and eight individuals of varying degrees of counseling experience were recruited for the study. The participants were asked to select the "most appropriate" response to a client's simulated comments. The results of the study indicated that less experienced staff (interns) had the highest percentage of correct answers followed by more experienced staff. Those with formal training and experience had a higher percentage of correct responses than students in a counseling course and non-counselors.   The researcher surmised that the interns may have outperformed their more experienced colleagues because of recent exposure to principles of counseling (e.g., empathy, rapport building etc.).

Chan and colleagues (1993) describe their experience utilizing computer simulations in a rehabilitation case management course. The study by Chan and colleagues very closely resembles that of Sharf and Lucas. In the Chan study, 36 participants were recruited (i.e., 18 students and 18 practicing counselors). Findings from the study contradict those of Sharf. Practicing counselors had a higher percentage of correct responses than the counseling students. Both studies seemed to indicate that CAI can be used to differentiate between

different counseling skill levels. The study also indicated that computer simulations may be a cost-effective tool for case management skill acquisition for counseling students.

The current trend in rehabilitation counseling appears to be the adaptation of the internet and web conferencing to provide clinical supervision to distance education students utilizing specialized software and hardware (Shultz & Finger, 2003). Stebnicki and Glover (2001) described their use of email as a complementary approach to the traditional clinical supervision. Stebnicki and Glover analyzed 158 emails from five practicum students. The researchers provide an example of how a blended curriculum (a curriculum that includes elements of technology to facilitate communication) can increase educator options for providing clinical supervision to rehabilitation counseling students. The researchers suggested that faculty may use email as a way to challenge student thoughts, feeling and perceptions of the counseling process.

Another option for supervision currently being utilized in a RCE program involves the use of web conferencing technology. Schultz and Finger (2003) explored the uses of web conferencing in providing clinical supervision to rehabilitation counseling students. The authors provided a thorough and practical description of the steps and cost involved in implementing webcam technology in a rehabilitation counseling education program. The authors asserted that while distance education is expanding in rehabilitation counseling, it will likely not replace the traditional classroom experience and caution that the role of technology is to enhance course content or delivery, not dictate it.

It appears that distance education in RCE programs continues to play an important role in counselor preparation and has been adopted to fit the needs of students and the

profession (Armstrong, 2003; Crimando et. al., 2004; Harley et al., 2004; Moore et al., 2005; Russell et al., 2003; Schultz & Finger, 2003), however, areas for exploration remain. Faculty perceptions of distance education have been the focus of only one article in the RCE literature. In their study of faculty perceptions, rehabilitation researchers interviewed instructors who were using DE. Some, roughly 33%, responded that their departments seemed to have limited information regarding distance education or potential instructor needs when providing distance education courses (Russell et al.). Russell et al. also found that faculty seemed to have limited awareness of accessibility issues for students and fellow faculty members with disabilities. No information regarding how counseling skills are taught via distance education, or the effectiveness of distance education when teaching counseling skills to rehabilitation counseling students has been collected. According to CORE (2006), 33 programs (38%), are offering graduate degrees using distance education. Students enrolled in these programs must be receiving at least some component of their clinical skills training using a distance education medium. The effectiveness of distance education on counseling skill development appears ready for examination by rehabilitation researchers.

<center>Effectiveness of Distance Education</center>

With the growth of distance education in higher education, researchers have attempted to examine its effectiveness versus that of traditional classroom settings (Bernard, Abrami, Yiping, & Borokhovski, 2004; McIssac & Gunawardena, 1996). Some education researchers have argued that few differences will be found when comparing mediums (distance versus traditional) but changes in learner outcomes may be related to attributes of teaching (Clark, 1983; Clark 1994; McIssac & Gunawardena). Clark has argued for the last

two decades that the delivery method of instruction does not influence student learning or student achievement. He likens distance learning to a delivery truck and nutrition; the type of vehicle will not influence or alter its content. He cautions investigators that continued comparisons between methods are not likely to contribute additional information to the field and may distract from examinations of the factors that have been shown to enhance student learning. Recent analyses of empirical, experimental findings seem to support Clark's assertions.

Machtmes and Asher (2000) conducted a recent meta-analysis comparing the effectiveness of interactive television courses (ITV) to traditionally delivered courses. By utilizing meta-analysis, researchers were able to synthesize the findings of true and quasi-experimental studies to determine the overall effectiveness of a treatment or intervention. In their examination of 19 studies, Machtmes and Asher found no overall significant differences between traditional and distance education; however there appeared to be significant variation among the studies, as evidenced by the range of effect sizes.

An effect size is a statistical calculation used to determine how large an observed effect between two variables is (Smithson, 2000). More than whether an effect is statistically significant, an effect size can tell a researcher the magnitude of the observed effect. This is often called "practical significance." Effect sizes are independent, standardized measures, meaning they are not affected by sample size and are calculated for individual studies and allow researchers to compare across studies how large the change in the dependent variable was. In his pioneering work, Cohen described effect sizes as "small"= .2," "medium", = .5,"

and "large, = .8." Effect size does not indicate statistical significance, but rather measures the amount of change in the dependent variable.

In the meta-analysis conducted by Machtmes and Asher (2000), the overall range was -.005 to +1.50. This indicates a significant range in learning outcomes between distance education and traditional instruction. The researchers, intrigued by their findings, performed a secondary analysis that examined which characteristics of distance education may have influenced learning outcomes. The specific instructional characteristics that were identified were interaction, content area, and the type of remote learning site.

Expanding on the work of Machtmes and Asher (2000), Zhao and colleagues (2005) developed a systematic approach to examining effectiveness of distance education on learner outcomes. These researchers examined a much larger sample of studies using stricter inclusion criteria. Studies that were included in the analysis were required to evaluate and compare distance and traditional mediums, be published in a journal, provide complete reference information, contain empirical data about learning outcomes and include statistical information for computing an effect size. The researchers reduced their original 8000 studies to 421; however, only 51 of those contained the statistical information needed to calculate effect sizes. Because the researchers were interested in examining how the aspects of distance education may influence outcomes several variables were examined. Variables included publication features, study design, instrument, indicators of effectiveness, results, instructor involvement, status of instructor, learner educational attainment, subject taught, interaction type, media involvement and learning environment. The reader is directed to the Zhao article for a more in-depth review of the procedures and statistical calculations.

Zhao et al.'s (2005) findings regarding effect size mirrored those of Machtmes and Asher (2000), in that no significant difference between distance and traditional education were identified although once again, the effect size demonstrated a wide range, -1.43 to +1.48. By comparing effect sizes across all studies included in the meta-analysis, the researchers were able to determine that in some studies the effect of distance education on learner outcome was very large, (>.8) but in other studies the effect was very small (<.2). Upon closer examination, the researchers found that 2/3 of the studies showed distance education was more effective whereas the remaining 1/3 showed that a traditional approach was more effective. In addition to the instructional characteristics already identified by Machtmes and Archer (interaction, content area, and learning site), Zhao and his associates identified two additional factors significantly affected learner outcomes: learner characteristics and bias. The next section will present findings on each of the instructional elements.

Instructional Characteristics

Interaction. The level of instructor involvement, type of interaction, and media involvement were found to be the most significant factors among those examined by Zhao and colleagues (2005) in effectiveness of distance education. As one might expect, when instructor involvement was low, distance education outcomes were not as positive as traditional education. When instructor involvement was medium to high, learner outcomes favored distance education. When an instructor utilized several ways to interact with students, (e.g. face-to-face, asynchronously and synchronously), outcomes were found to be

significantly better in distance education than interactions in a traditional setting. This

blended style appears to appeal to students and may allow for more frequent interactions.

Content area. Findings from the Zhao et al (2005) meta-analysis identified content

area as a significant predictor of effectiveness for distance education versus traditional

education. Courses in business, computer science, and medical science provided via distance

education were found by researchers to be more effective than courses delivered

traditionally. In social science and science areas, there were no significant differences

between distance and traditional learning. In the area of specific skill, military, and

mathematics, distance education appears to be more effective than traditional learning. It

should be noted that only seven studies met the criteria for skill courses and the researchers

cautioned drawing any conclusions.

Type of remote learning site. Findings in the distance education literature report that

learners are more likely to utilize the workplace as their learning environment than their

homes (Armstrong, 2003; Machtmes & Archer, 2000; Mansouri, 2003; Moore et al., 2005;

Zhao et al., 2005). Machtmes and Archer (2000) found that learning environment was

significantly related to learner performance and the effectiveness of distance education.

Learners who utilized their workplace environments for distance education courses had better

outcomes than students who completed courses in other environments. These researchers

surmised that learners may feel obligated and more motivated if their employer is paying for

their education. Mansouri (2003) identified connection speed as a possible motive for

participating at the workplace. Most employers utilize broadband connections that facilitate

faster connection and downloading of information than a dial-up connection. Some

employers provide work release time for students to participate in distance education courses and training (Moore et al.).

Learner Characteristics

Learners who participate in distance education courses are typically non-traditional students, characterized as adults returning to school after a 5 to 20 year absence. These students are usually employed full-time, attending school part-time and juggling multiple family and social roles (Armstrong, 2003; Gilbride & Stensrud, 1999; Harley et al., 2004). These students have been characterized as highly motivated, self-directed, and achievement oriented (Harley et al.). In a study of online rehabilitation counseling students, Armstrong (2003) found that students' perceptions of their ability to succeed was influenced by a strong sense of academic self-confidence and a belief in their abilities to manage life roles. Zhao and colleagues (2005) found that students with a bachelors degree had a better outcome in distance education courses than students with less than a bachelors degree.

Bias

Through the use of meta-analysis, certain biases were identified when published findings indicated greater effectiveness of distance education (Machtmes & Archer 2000; Zhao et al., 2005). As one might expect, a study with significant findings is more likely to be published than one that produces "no significant difference." This process of selection produces a publication bias. Another instance of bias is the role of the author in the study. Zhao and colleagues were able to determine that if the author was also the instructor for the distance education course, significant findings for distance education were more likely to be detected. When the author was not the instructor, no differences were found between

traditional and distance education mediums. For articles in which the role of the author was unknown, more often distance education was found to be more effective than traditional, although less so than when the role of the author as instructor is known.

Regarding to the effectiveness of distance education versus traditional education, the consensus of the literature is that no significant difference between mediums exists. Nevertheless, it appears that certain characteristics of distance education are associated with successful learner outcomes. Learners who are highly motivated and able to manage their time and life roles appear to be more successful in distance education programs (Armstrong, 2003). Interaction between the learners and with the instructor is essential for student success and satisfaction (Fulford & Zhang, 1993; Moore et al., 2005). How learners and instructors interact appears less important than providing plenty of opportunities (Fulford & Zhang; Machtmes & Asher, 2000; Moore et al.; Northrup, 2002; Zhao et al., 2005). Where students learn also appears to be related to learner outcomes, as does the type of course (Matchmes & Asher; Zhao et al.) It appears that certain areas of study lend themselves more readily and easily to distance education formats (Zhao et al.). Students' outcomes in distance education courses in medical science, business, and computer science had better outcomes than the traditional face-to-face courses (Zhao et al.). Student outcomes in the social sciences and general sciences were similar for distance education and traditional modalities. As mentioned earlier, distance education courses in math and skill based areas had better student outcomes than in traditional formats. Counseling researchers and educators have yet to explore whether a clinical skills course is one such content area and whether counseling skills be effectively learned using a distance education format.

Counseling Skills Training

Counseling clinical skills are the foundation of counseling education programs and the counseling profession (Sexton, 2000; Whiston & Coker, 2000). Preparation of highly competent and skilled counselors has implications for the educational program itself, as well as for the public who receive services. Poorly trained professionals may unwittingly harm clients while ineffective counselors may lack the knowledge and skills necessary to facilitate client change and growth. Counselor education programs must also consider legal implications and charges of malpractice they may be exposed to if found producing poorly trained counselors (Hensley, Smith, & Thompson, 2003; Kerl, Garcia, McCullough, & Maxwell, 2002).

In a comprehensive review of findings from the field of counselor education, Whiston and Coker (2000) identified and described the elements of counselor skills training empirically associated with successful client outcomes. Findings indicated that students who receive basic interview and interpersonal skills training are considered "more effective" (p.11) than those individuals who do not receive instruction. Successful outcomes are also associated with the use of more complex counseling skills, like interpretation and confrontation. The Working Alliance Model has also been associated with successful client outcomes. The summary provided by Whiston and Coker revealed that although many elements of skills training have been repeatedly associated with successful client outcomes, very few of these elements are "reflected in typical counseling curriculums or current CACREP standards (p. 228)." Furthermore, measuring the acquisition of these skills in students is a problem within the field of counseling that has received recent attention

(Eriksen & McAuliffe, 2003; Hensley et al., 2003; Whiston & Coker, 2000). The following sub-sections will describe counseling skills-based training in counselor education programs, counseling skill development in RCE programs, and evaluation tools currently available and commonly adopted by counselor educator programs.

Skill-based Training

For most counselors-in-training, counseling skill training begins with an introduction to the elements of counseling, along with opportunities to apply and practice newly acquired skills. Eriksen and McAuliffe (2003) describe the process of clinical skills training as a method that,

> "breaks down the moment by moment utterances of the counselor into categories such as reflection of feeling, paraphrasing and open questions. The skills are them modeled for students and practiced separately by them. Often they are taught in a sequence of read, discuss/lecture, see a demonstration, try out and criticize' (p. 121).

Once counselors-in-training have demonstrated counseling skill competence; more complex counseling skills are often incorporated into their learning (Nelson & Neufeldt, 1998). Following the introduction of these skills, counselors-in-training are then placed into internships where their skills are applied outside of the classroom (Bradley & Fiorini, 1999; Nelson & Neufeldt).

Counseling education programs often utilize skill-based approaches in order to teach counseling skills (Nelson & Neufeldt, 1998; Whiston & Coker, 2000). Skill-based programs have a 30 year history in the field of counselor-education and have been widely adopted by most counselor education programs (Eriksen & McAuliffe, 2003). It has been asserted that

the best pedagogical approaches incorporate facilitative communication techniques.

Facilitative communication techniques are based upon the pioneering work of Carl Rogers,

creator of the Facilitative Conditions Model (FCM) (Rogers, 1950). Rogers and colleagues

identified several conditions that when present, lead to client growth, and when absent, may

lead to "client deterioration" (p. 4) (Gazda, Balzer, Childers, Nealy, Phelps, & Waters, 2005).

Rogers and colleagues have asserted that the role of the counselor and counselor attitude

positively impact and influence client change regardless of theoretical orientation or

approach. The essential or core conditions identified by Rogers include empathy,

genuineness, unconditional positive regard, and congruence (Carkhuff, 1969; Carkhuff &

Berenson, 1967; Gazda et al.; Rogers, 1950). Rogers asserted that the use of these

facilitative conditions, in a client centered interaction, allows the client to engage in a process

of self-exploration and personal growth.

Counseling education researchers refined the FCM and developed skill-based

training systems and evaluation instruments to determine the presence or absence of the

essential counseling conditions, as well as, rate the helpfulness of counselor responses

(Carkhuff, 1969; Gazda et al., 2005). The most commonly used and extensively researched

of these training systems are Carkhuff's Human Resource Training (Bradley & Fiorini, 1999;

Whiston & Coker, 2000), Ivey's Microcounseling program(Whiston & Coker), the Skilled

Counselor Training Model (Urbani, Smith, Maddux, Smaby, Rivera, & Crews, 2002), and

Gazda's Human Relations Development (Carkhuff, 1969; Gazda et al.; Hayes, Taub,

Robinson, & Sivo, 2003). Whiston and Coker, citing the work of Lambert and Ogles, report

that individuals who receive skill-based training develop better counseling skills than

individuals who receive no training at all however; while important for the client-counselor relationship, facilitative communication accounts for very little variance in outcome. Citing the work of Lambert and Ogles, the authors report that whereas great amounts of attention are paid to developing facilitative skills, these are learned relatively quickly through modeling and feedback. More complex skills (e.g., reflection, questioning, self-disclosure) require more time to learn, and modeling appears to help students' acquisition more efficiently than feedback alone.

Bradley and Fiorini (1999) surveyed counselor educators at CACREP accredited programs to determine which skills should be acquired by students during the practicum experience. Of the reporting 100 respondents, 98% reported that students should demonstrate basic attending, listening, and reflecting skills at the end of the practicum experience. Survey respondents also indicated that students should also be able to recognize and correct their own counseling skill limitations (Bradley & Fiorini).

Despite empirical findings in support of specific training approaches, some researchers in the field argue that too much emphasis is placed on skillfulness and too little emphasis on developing quality counseling relationships and the essence of the counseling relationship (Nelson & Neufeldt, 1998; Whiston & Coker, 2000). In addition to these criticisms, there has been a backlash from multicultural and feminist researchers who argue that training models are Euro-American male oriented, and do not account for the social worlds in which clients live (Nelson & Neufeldt).

Although most educators agree that counselors-in-training should demonstrate specific counseling skills and spend energy and time teaching these skills, other elements of

the counseling process are less straightforward and observable. The counseling education

literature reports that students with strong cognitive abilities are less prone to bias in their

clinical judgment and are able to integrate larger amounts of information into their decision

making than students with lower cognitive abilities (Nelson & Neufeldt, 1998; Whiston &

Coker, 2000). Additional characteristics that are associated with successful counseling

outcomes include attitudes, beliefs, values and personal styles (Whiston & Coker). While

specific clinical skill development is essential to counselor education, it appears that

individual counselor-in-training characteristics may require greater attention from educators

to promote individual professional development and to strengthen the counseling field

(Schaefle, Smaby, Maddux, & Cates, 2005).

Counselor skillfulness, cognitive development, and personal attributes are aspects of

counseling that are substantiated with empirical findings; however, counselor education

programs are also charged with identifying and nurturing promising counseling students who

will make contributions to the field. How these students are identified and their skills

evaluated, are areas that have received limited attention in the literature (Sexton, 2000;

Whiston & Coker, 2000).

Evaluating Skillfulness and Competence

There are many challenges to evaluating and measuring counselor skillfulness.

Newman and Scott (1988) argued that counselor performance is a multidimensional construct

with poorly understood and researched psychometric properties. Despite the empirical data

available on facilitative conditions, training models and essential elements in the counseling

process; the field of counseling cannot come to consensus on the competencies that students

must demonstrate. In addition, counseling educators recognize that counselor competence is more than learning basic responses but requires that a student demonstrate appropriate personal characteristics and ethical behavior when applying counseling skills. (Bradley & Fiorini, 1999; Hensley, et al., 2003; Kerl, et al., 2002; Lumadue & Duffey, 1999; Newman & Scott). Several authors and researchers have called for the field of counseling to identify the essential skills and personal characteristics that students must demonstrate prior to entering the profession (Hensley et al.; Lumadue & Duffey; Whiston & Coker, 1998), however, few empirically evaluated instruments have been developed for this purpose.

Bradley and Fiorini (1999), in their survey of CACREP programs, asked respondents how student skillfulness was evaluated in each accredited program. Eighty-three percent of respondents utilized case presentations, 66% utilized audio recordings, and 68% utilized video recordings for evaluation purposes. Interestingly, 65% of respondents reported using "gut feeling" (p. 10) when evaluating student competence. Bradley and Fiorini did not report whether the practicum courses were taught in a traditional format or via distance education.

A model of human relations skill training was developed by Gazda and colleagues that was based upon the work of Rogers, Carkhuff, and Truax (Gazda et al., 2005). Carkhuff and colleagues developed a model of helping skills that operationalized Rogers' core facilitative conditions (empathy, positive regard, genuineness and concreteness) into 5-point scales (Carkhuff & Berenson, 1967). Carkhuff and colleagues (1967) asserted that use of a skill-based model could improve facilitative conditions within a counseling relationship thereby, improving client outcomes.

Gazda and colleagues (2005) adapted and further refined the work of Carkhuff and colleagues and developed the human relations training model (HRTM). The HRTM consists of three phases of learning: facilitation, transition and action. The researchers developed a 4-point Likert scale, the Scale for Global Ratings of Responding (SGRR) that rates the helpfulness of "helpers" responses. Developers of the SGRR have produced findings supporting the effectiveness of the model and the assessment tool beginning in 1976 (Gazda et al.). The SGRR has been used in several studies examining interpersonal communication skills among elementary school educators (Gazda et al.) and clinical skill development in counseling education students (Hayes et al., 2003). For validity and reliability findings for the SGRR, the researchers refer readers to the work of Carkhuff and Truax (Gazda et al.).

Urbani and colleagues (2002) also developed a comprehensive skills-based training program. The Skilled Counselor Training Model (SCTM) promoted counselor self-efficacy. Urbani and colleagues argued that counselors-in-training who participated in the SCTM demonstrated high levels of self-efficacy, had more positive experiences, more positive self-evaluation and experience fewer anxieties than students who did not participate in the SCTM. The SCTM uses three stages to teach counseling skills: exploring, understanding and acting. Assessing student competence is accomplished through the use of the Skilled Counseling Scale (SCS). The instrument is 5-point Likert scale, comprised of 18 items that measure the 18 skills in the SCTM. The SCS has an inter-rater reliability of .90 and internal reliability was calculated and reported at .99. Validity was established by comparison to other counseling skill scales (Urbani et al., 2002).

The Counseling Skills Scale (CSS) was developed by Eriksen and McAuliffe (2003) and is an adaptation and revision of the SCS. The researchers revised the SCS in an effort to develop a more precise measurement of counselor skill competence. The CSS also uses a 5-point Likert scale that ranges from +2 to -2; however, several items that were originally in the SCS were eliminated and others were added to the final CSS. The "final" (p. 127) instrument consists of 22 items that have demonstrated construct validity and high inter-rater reliability (i.e., .90).

Hensley and colleagues (2003) reviewed many of the existing assessment tools and found that some instruments measured more than skills. Some of these instruments measured personal characteristics and professional development. These tools were being utilized for retention and dismissal of students who may not be appropriate for the counseling profession. University of Colorado researchers developed a 5-point Likert scale that evaluated students on nine characteristics (not skills). Students are evaluated in each course by their individual instructors at mid-term and the end of the semester. University of Northern Colorado researchers argued that this model did not adequately protect individual faculty members from student grievances and recommended that the entire faculty perform the student reviews. No empirical data were available on this instrument.

Texas State University-San Marcos developed an evaluation tool that uses a Likert scale and assesses basic counseling skills, professional responsibility, personal and professional characteristics and ethical practice (Kerl et al., 2002; Lumadue & Duffey, 1999). The instrument has undergone several revisions due to continued examination and faculty feedback (Kerl et al.). In its current form, the Professional Performance Evaluation (PPE),

uses a 4-point Likert scale. Students are evaluated by faculty members in the areas of

communication skills and attributes, professional responsibilities, competence, maturity and

integrity. The evaluation is conducted for each course and reviewed with the student during

academic advising times.

Instruments, such as the PPE, that examine personal and professional characteristics

may also play a key role in student dismissals from the counseling education program and

legal actions that may arise as a result of student dismissal. The authors encourage educators

to develop a program policy, and provide documentation to the students, outlining program

expectations, evaluation procedures and the dismissal process. No empirical data were

available on this instrument.

Alternative assessment instruments, such as rubrics (Carney & Cobia, 1996) and

portfolios (Hanna & Smith, 1998), have been proposed as useful tools in counselor

evaluation. Use of a rubric offers several advantages over a Likert rating scale or

standardized assessment. A rubric is a scale that lists characteristics of performance for each

level of the scale (Hanna & Smith). For example, the rubric provides students with the

"model" of performance and a means to evaluate how their performance compared to the

highest performance expectation (Hanna & Smith). In this way, the rubric may promote and

enhance learning by offering learning targets. Portfolios are another alternative assessment

method discussed in the literature as having relevance in counselor education (Carney &

Cobia). Portfolios can be described as a "collection of evidence documenting an individual's

development, competencies, and quality" (Carney & Cobia, p. 122). Portfolios engage the

student in the learning and evaluation process. Students are expected to consider, evaluate

and reflect on their participation, efforts and performance and select meaningful elements that hi-lite their personal and professional development. Considerations for the evaluation process and procedure should be examined prior to adopting an evaluation using a portfolio (Carney & Cobia). No information regarding reliability or validity was provided for either of the alternative assessment methods in the articles.

The challenge confronting counseling educators and researchers in a climate of accountability becomes evaluating student performance and competency, while balancing individual characteristics and personal growth. While training programs address the specific skills that students must master, the field of counseling finds defining the construct of personal and professional competence difficult. The challenge of defining counselor competency, combined with the difficulties in developing an instrument to measure and coordinate the implementation of it, may inspire educators and researchers to refine tools and procedures at the program or department level (Hensley et al., 2003).

<div align="center">Clinical Skills Training and Distance Education</div>

It is known that accredited counselor education programs are utilizing different models of distance education course delivery in clinical skills courses, including helping relationships, practicum, and internship (Degiorgio & Kampfe, 2008; Quinn et al., 2002). Some programs have been reluctant to adopt a distance education format, fearing that total adoption may adversely affect academic rigor and overall program quality (Quinn, et al.).

In the field of rehabilitation counseling, the early pioneers of distance education, when describing their programs and experiences with distance education, urged caution when considering adapting clinical skill and clinical supervision for distance education courses

primarily because of the level of interaction that this type of course requires (Davis & Yazak, 1995; Smart, 1999).   As technology has improved and learners continue to demand greater convenience and flexibility, the field of rehabilitation has adapted. Several programs have described the role of distance education and technology utilization as a compliment to the traditional method of clinical supervision and have reported positive experiences (Jones & Karper, 2000; Schultz & Finger, 2003; Stebnicki & Glover, 2001; Watson, 2003).

Jones and Karper (2002) described their experience using an online format to teach clinical skills to counseling education students. This was the only published peer-reviewed article describing clinical skills and distance education found in preparing this manuscript. These educators required their students to complete the same activities as those assigned in a traditional classroom setting. Online students were required to role-play, on their own time, to record their sessions, and to return them to the instructor in order to demonstrate their mastery of basic counseling skills. Students were provided feedback via email exchanges. In addition, the online students were asked to transcribe a segment of their recording and to identify the techniques they used. The reliance on technology often presented challenges for the instructor and students, especially when it is not working properly. Jones and Karper developed strategies and alternatives that could be applied should the class experience technical difficulties. The article, a course description, did not provide any data on learner outcomes; however, it appears that the assignments and grading processes for online students were consist for their traditional classroom peers.

In an unpublished dissertation, Siegfried (2000) examined the use of asynchronous distance education in providing counseling skill instruction to 4 cohorts of rehabilitation

counseling students. The cohorts consisted of beginning and advanced rehabilitation counseling students who were enrolled for either a traditional on-campus setting or an asynchronous online distance format at San Diego State University. Beginning students were described as students who were new enrollees in the Practicum I course (2 cohorts, traditional and distance). Advanced students were described as participants who had successfully completed the Practicum I course (2 cohorts, traditional and distance). Advanced students enrolled in Practicum II received "continued development of their counseling and communication skills through interaction and analysis exercises" (p. 40). In addition, advanced students were introduced to the "Solution Focused Counseling" approach where they learned to apply specific counseling techniques to a rehabilitation counseling setting.

Siegfried (2000) utilized volunteer instructors and facilitators who assessed students' performance on a final, video recorded, role-playing exercise using the Scale for Global Ratings of Responding (SGRR) developed by Gazda and colleagues. Students submitted a video recording to the researcher, that was then evaluated using the SGRR. Although every attempt was made, total anonymity was not possible as the students were familiar to all raters. Students' competence in communication was selected for evaluation because the researcher considered this to be central to the counseling process. The four areas evaluated were: rapport, interaction, reflection of feelings, and counseling relationship.

Using an analysis of covariance (ANCOVA), Siegfried found a statistically significant relationship for the category of counseling relationship and the overall communication score between the on-campus and distance students. Distance education

students performed better than on-campus students in the counseling relationship and the overall communication score. On the remaining categories (i.e. rapport, interaction and reflection of feeling) no statistically significant differences were identified between the groups.   A secondary analysis was performed to determine whether age, years of counseling experience, and years of community service were related to students' performance. Findings suggested that these factors did not significantly contribute to student performance.

The findings of Siegfried (2000) have provided a foundation on which further examination and refinement of measurement of counseling skill development and distance education can be conducted. His findings raise questions about the initial differences in counseling skill levels between on-campus and distance education students, as well as, skill acquisition over 15-week semester. Siegfried surmised that the distance education group may have had greater skill development because of the length of time spent working as a rehabilitation professional. In addition, a comparison between asynchronous versus a synchronous learning environment may warrant exploration.

<div align="center">Summary</div>

The field of RCE has utilized various types of technology and distance education in order to prepare "qualified" rehabilitation counselors who have obtained a masters degree and have passed the Certified Rehabilitation Counselor examination (Smart, 1999). Currently, RCE programs are utilizing ITV, the Internet, and teleconferencing to provide course content to students who may lack access to traditional education programs (Degiorgio & Kampfe, 2008; Eldredge et al., 1999; Moore et al., 2005; Taylor et al., 1999). Some programs are pushing the boundaries of technology and have adopted web-conferencing

technology as a complimentary approach to clinical supervision for students who are participating in distance education programs (Schultz & Finger, 2003). It appears, from narratives and descriptions of experiences within RCE programs, that no differences in outcomes exists between students who participate in a traditional setting or via distance education, however, no empirical studies have examined counseling skill development when taught using distance education compared to a traditional model of counseling skill development..

It has been argued that comparing distance education to traditional education courses is inappropriate (Clark, 1994); however, Abrami and Bernard (2006) asserted that well designed studies may yield relevant distance education outcome information. Two meta-analyses have revealed that several factors were associated with the effectiveness of distance education (Machtmes & Asher, 2000; Zhao et al., 2005). Two components that may have implications for this study and are relevant in rehabilitation research, are course content (Matchmes & Asher; Zhao et al.) and level of interaction (Matchmes & Asher; Zhao et al.).

It is unknown whether counseling skills training is an appropriate content area for distance education. In the meta-analysis conducted by Zhao and colleagues (2005), data were available for only seven skills courses. With such few data, the authors cautioned that generalization regarding the findings supporting distance education in skills based training (Zhao et al.). Within the field of counselor education, we know that teaching counseling skills and evaluating counseling skills requires more than academic ability. Clinical skills are performance-based and students are expected to demonstrate basic listening skills and basic counseling responses (Bradley & Fiorini, 1999; Hensley et al., 2003; Whiston & Coker,

2000). Rapport, trust, and genuineness are elements that a student must develop and demonstrate, but these elements must also be present in the classroom and between the instructor and students. Whether these elements can be taught, and evaluated, using a distance education medium are worthy of further investigation.

Currently, distance education is transforming how education and professional development are delivered to rehabilitation students and practicing professionals. The question of whether counseling skills can be effectively taught and acquired when using a distance education approach has implications for counselors-in-training, practicing professionals and program accreditation. While many programs are moving forward with the adoption of technology into skill-based courses (Degiorgio & Kampfe, 2008), other programs are moving forward cautiously, waiting for more empirical findings (Wantz et al., 2003).

The area of skill development and delivery of instruction via distance education has yet to be explored in rehabilitation research. The current research explored the efficacy of distance education methods in skill development, as well as, provided a foundation upon which future distance education research can be conducted.

CHAPTER THREE

METHODS

This was an exploratory study designed to examine practicing rehabilitation counseling (RC) graduate students' skill acquisition in a distance education counseling skill development course (i.e., Practicum I). In addition, this study explored how the use of technology impacted RC students' learning and interactions with fellow students and faculty in Practicum I. This chapter describes the participants, the learning environment, and the course materials. It will also include a description of the design, procedures, instruments, analysis, and limitations of the study. The research questions guiding this proposal were:

RQ1: Do counseling skill levels improve from the beginning of Practicum I to the end of Practicum I for practicing rehabilitation counseling (RC) graduate students who are receiving instruction via distance education.

RQ2: How does the use of technology impact RC students' experiences in a clinical counseling skills course (i.e., Practicum I)?

Participants

Participants were drawn from a convenience sample of graduate students enrolled in the rehabilitation counseling skill-based course, Practicum I, offered by a large southwestern university. Students who agreed to participate in this research project were not asked to complete additional work for the course, nor did their participation affect their grade for the course. Recruitment and consent of participants was performed by this researcher and occurred on the first day of class. Participants completed three hours of instruction each week, received one hour of supervision, and completed an initial 45 hours of skill experience

during the semester, as dictated by CORE accreditation guidelines (CORE, 2006). All

students enrolled in the course agreed to participate in the study.

A total of 8 students were enrolled in the course. The participants consisted of 7

females (87%), and 1 male (13%). Five students reported being married (62.5%), two

reported their status as single (25%) and one identified being in a domestic partnership

(12.5%). The majority of participants identified themselves as white (75%), one identified as

Hispanic (12.5 %) and one identified as Asian (12.5%). The mean age for participants was 39

years old, with ages ranging from 31-53 years.

Seven of the eight students (88%) were working as Rehabilitation Service Specialists

for the State Rehabilitation Services Administration (RSA). Two of these state rehabilitation

specialists reported having specialized case loads (deaf or hard of hearing and individuals

with serious mental illness). One (12%) student reported working for a local community

provider as a Psychosocial Rehabilitation Specialist. All participants (100%) reported that

they had worked in their current positions from 1 to 5 years. Those students employed by

RSA were receiving educational assistance to help pay for their masters degree.

When asked to rate their expectations of taking Practicum I, counseling skill

development course using ITV, a majority of students (75%) reported having a moderately

positive expectation, while 25% reported a very positive expectation for the use of ITV. No

students indicated anything lower than moderately positive expectations of using technology

in the course. All students (100%) indicated they had taken an ITV course prior to

participating in the Practicum I course.

Learning Environment

Distance education sites were located in five sites across the State including both urban and rural areas. Each site was equipped with a fully interactive, closed-circuit television system. This two-way television system allowed students to see and hear the instructor and one another. Students and the instructor used microphones so that each of the sites could hear one another. Microphones were placed on tables throughout each room for easy student access. The instructors wore a portable microphone when presenting to the students. In each site, several viewing screens were provided, allowing instructors and students to see the other classrooms and students. Technical assistance was available at each site for any transmission or audio difficulties. Tables and chairs were provided for the students and could be arranged in a layout appropriate for role-playing or small group activities.

In addition to ITV technology, the DE students utilized the *Desire 2 Learn (D2L)* course management system where the syllabus, assignments, and relevant course materials were posted for student retrieval. Students utilized the discussion board component of D2L to post responses to assignments and to provide feedback to fellow students. In addition, email was utilized by faculty, graduate assistants, and students for communication. Students performed role-plays each week using the ITV system. This method provided an opportunity for students to observe one another and provide specific performance and response related feedback.

Instructing Practicum I were two faculty members with several years of experience using ITV and had previous experience teaching Practicum I using DE. One instructor would often travel to the location with the greatest number of students while the other would remain at the main education site. With instructors at two locations students had an opportunity to ask questions, get feedback, and interact with an instructor face-to-face. Instructors did not have access to the recorded sessions, or the responses regarding individual experiences in the distance education course. None of the information collected was used for assigning student grades.

Course Materials

The rehabilitation counseling faculty selected *Basic Counseling Responses: A Multimedia Learning System for the Helping Professions* (Haney & Leibsohn, 1999) as the text for the introductory counseling skills course. All instructors in the department who taught Practicum I, utilized this text. The text included a DVD or videocassette that provided several counseling vignettes, which demonstrated specific counseling skills. The contents of the text were divided into three parts: Part I was considered the Overview, Part II contained Descriptions and Examples, and Part III included Exercises. Part I provided an overview of the counseling process and what it means to be a counselor. Part II provided students with definitions and examples of specific types of responses. Twelve response categories were defined with written examples of how the responses may be used in a session (opening/closing; attending, empathizing, paraphrasing, giving feedback, clarifying, directing, questioning, playing a hunch, noting a theme, noting a discrepancy, noting a connection). Part III utilized multimedia components (i.e., DVD or video recording) that

accompanied the text. In addition, several written counseling exercises were provided. In these exercises, students were asked to identify the type of responses, the intent of the responses and focus of the responses.

Instruments

A total of three instruments were utilized in this study. Participants were asked to complete two of the instruments: a demographic questionnaire, and the Technology and Distance Education in Counseling Skills Development questionnaire. The third instrument utilized was the Scale of Global Ratings of Responses. This instrument was utilized by evaluators to assess students' skill acquisition. Copies of all instruments can be found in Appendix A.

Demographic Questionnaire. The demographic questionnaire was completed by participants on the first day of class. The questionnaire included items about gender, marital status, age, race/ethnicity, current employment status, job title, years in current position, computer use experience in terms hours per week, and experience with ITV courses. In addition, students were asked to rate their expectations for the course using a scale ranging from one to five. A score of one indicated *very negative* expectations, two indicated *negative* expectations, three indicated *undecided*, four indicated *positive* expectations, and five indicated *very positive* expectations.

Technology and Distance Education in Counseling Skill Development. This instrument is adapted from the "Computer-Assisted Instruction Survey for Students" created by Morrell. The survey is designed to assess student attitudes about computer-aided instruction. The survey has been utilized in previous counseling research (Hayes &

Robinson, 2000). The original questionnaire contained 20 statements about students'

experiences with computer-aided instruction but because the focus of this study was on

student experiences with specific forms of technology, several items were modified to reflect

student experiences with interactive television (ITV) and the course management system

D2L. The phrases ITV and D2L were substituted for the phrase computer aided instruction.

The total number of statements was reduced to the twelve items most closely associated with

technology.

Students were asked to indicate whether they *strongly agree, agree,* are *undecided,*

disagree, or *strongly disagree* with the questionnaire statements. Statements were both

positively worded and negatively worded. Each response was assigned a numerical score

from 1 to 5 and reverse coding was used for the negatively worded statements. The scores

were then summed for an overall score. The range of scores could extend from 12 to 60. A

score of 12 would indicate an experience where use of technology was uncomfortable,

interfered with peer interactions, created a distracting environment and impacted students'

ability to learn the course material. Conversely, a score of 60 would indicate comfort with

the course technology, no interference with learning or peer interactions, and the use of

technology enhanced the learning experience. A score of 36 would indicate a neutral position

or that the student was undecided on each of the statements.

The original questionnaire was not designed with or analyzed using themes but this

researcher found that several of the statements seemed to focus on specific themes:

interaction, curriculum and learning, efficiency, and comfort. Statements were placed into

each of the categories based on the terms used in the statement and the student's relationship

to technology. For example, "the use of technology did not distract me from the lesson being taught" was associated with the theme of curriculum and learning, "I felt uncomfortable using ITV and D2L" was associated with the theme of comfort. Table 3.1 lists all themes and the associated statements.

Table 3.1

Themes and Statements for Technology in Distance Education Questionnaire

Themes	Item #
Interaction	
ITV and D2L were too impersonal	4
ITV and D2L improved the quality of course interactions	5
ITV and D2l made interacting with my fellow students easier.	6
ITV and D2L made interacting with my fellow students difficult.	10
Curriculum and Learning	
ITV and D2L were more motivating to me than traditional class room instruction.	2
Technical difficulties impacted my ability to learn.	3
The use of technology did not distract me from the lesson being taught.	8
I would have preferred a traditional approach to learning counseling skills	11
Using ITV and D2L makes the subject matter less interesting.	12
Efficiency	
Distance education is an effective use of my time.	7
Comfort	
I felt comfortable using ITV and D2L in Practicum I.	1
I felt uncomfortable using ITV and D2L in Practicum I.	9

Scale of Global Ratings of Responding. The Scale of Global Ratings of Responding
(SGRR: Gazda et al., 2005) was used as the instrument to measure counseling skill
acquisition (i.e., dependent variable). The SGRR uses a 4-level rating scale, with a range of
one through four. The SGRR is based on a training model created by Carkhuff and
colleagues (Carkhuff, 1969). The SGRR measures the extent to which counseling responses
facilitate the counseling relationship and contribute to client success. The scale has four
levels, 1.0, 2.0, 3.0 and 4.0. The levels of measurement in the SGRR are as follows: *Level
1.0, Harmful/Not helpful; Level 2.0, Ineffective/not helpful; Level 3.0, Facilitative/helpful;
Level 4.0, Additive/helpful.* A score of one indicated that a response was harmful, not helpful
to the helpee. Behaviors associated with a 1.0 score included inaccuracy, dominating the
interaction, use of problem-solving strategies that damaged the relationship and criticism of
the helpee. A score of 2.0 was described as ineffective and not helpful to the helpee.
Responses associated with a score of 2.0 included giving unsuitable advice, responding in a
mechanical way and reflection of content but not feeling. A score of 3.0 is given to
responses that are considered facilitative and helpful. Responses associated with a score of
3.0 include accurate and complete reflection of the helpee's feelings and communicating
acceptance. Responses scored at a level 4.0 were considered additive and helpful. These
responses demonstrate empathy, and accurately reflect the helpee's underlying feelings.
Responses that received a score of 4.0 were statements that demonstrate genuineness,
empathy, immediacy, concreteness and expertise.   Table 3.2 provides a summary of the
rating scale and the corresponding responses.

Table 3.2

Scale for Global Ratings and Responding

Level	Key Word	Results	Helper Actions Characterized by	Helper's Goals
1.0	Harmful	Not helpful	Criticism or inaccuracy	Inappropriate
2.0	Ineffective	Not helpful	Unsuitable advice	Inappropriate, tries to be and appear important to the helpee
3.0	Facilitative	Helpful	Relationship Building	To earn the right to help
4.0	Additive	Helpful	Problem-solving	To help

An inter-rater reliability of .88 has been established by several authors who have

utilized the SGRR (Gazda et al., 2005; Hayes et al., 2003; Siegfried, 2000). An inter-rater

reliability was not established for this study because the researcher was present while the

evaluation process was completed. A calculation of inter-rater reliability under this condition

would have artificially inflated the reliability of the instrument.

Design

This exploratory study utilized a mixed method approach to gather data regarding

participants' experiences in a counseling skills course that was delivered via distance

education. A quasi-experimental design was used to examine students' skill development

during the semester. In addition, a survey design was utilized to determine the degree to which students felt that technology impacted their learning.

For the quasi-experimental design, participants were asked to provide two samples of a counseling role-play that were used as pre-post test measures. The first recording was completed and collected on the first day of class when all students were present at the main education site. Students were asked to pair up with another class member to complete the role-play. The initial counseling session addressed the topic, "How are you adjusting to being a graduate student?" Participants completed a 10-minute audio recording that served as a baseline evaluation of counseling skill. The researcher collected the audio recordings from participating students on the first day of class. The final recording was collected at week 14 in the semester when the students met together at the main education site for class. Students separated into new pairs and completed a final 10-minute audio recording. The topic for the final session addressed, "How are you coping with the demands of graduate school?" The researcher collected the recordings for independent evaluation by two trained evaluators. The evaluators did not know whether the audio recordings were pre or post-test samples. The recordings were not used in grading decisions by faculty.

The survey design included two questionnaires. The first was a demographic questionnaire administered and collected on the first day of class. The second questionnaire, the "Technology and Distance Education in Counseling Skill Development," was administered and collected at the same time the post-test recording was completed, at week-14 in the semester.

Evaluation Procedures

To address the question of whether counseling skill levels improved from the beginning of Practicum I to the end of Practicum I utilizing ITV, two audio recordings were collected from students on the first day of class and week14 of the semester. The recordings were evaluated by two evaluators who were trained on the use of SGRR. The evaluators assessed students' performance of counseling skills on the two audio recordings during the semester following the course and data collection. Evaluators were not aware of whether the audio recordings were pre-test or post-test samples.

Evaluators were doctoral students in the department of Rehabilitation Counseling who satisfactorily completed a doctoral supervision course. Training of the evaluators in the evaluation procedures was completed the following semester. The researcher trained the evaluators in use of the SGRR using the training guidelines established by Gazda and colleagues (Gazda et al., 2005). The researcher did not evaluate the recordings but was present during the evaluation and provided final decision making when consensus within .5 could not be obtained between the evaluators. Readers are referred to Appendix B for evaluator training procedures.

To obtain a single score for each student, a two step process was necessary: identifying responses and scoring the responses. The trained evaluators and the researcher listened to each recording together and individually identified the first 10 responses from each 10-minute recordings. The decision to identify the first 10 responses was made in order to provide consistency in the evaluation process. Some recordings did not have 10 responses. In these instances, all responses were identified and scored. After individually identifying responses (opening, question, clarifying, etc.), the evaluators shared their findings with one

another for evaluation consistency. Students' responses were scored on whether they were helpful or not helpful in facilitating communication and contributing to the counseling relationship using the Global Scale for Ratings of Responding. Once the 10 responses had been individually scored, evaluators were asked to share their answers out loud. When different scores were provided by the evaluators, consensus was reached through repeated listening and discussion. If consensus could not be reached within .5, the principle researcher offered the final decision.

Calculating Scores. To calculate the final score for the student's performance, each evaluator summed the scores for each of the ten responses and then divided by the total number of responses. Then both evaluators' scores were added together and divided by the total number of evaluators (2). For example,

Evaluator 1:   1; 1.5; 2; 2; 1.5; 3; 3 = 14/7 = 2.

Evaluator 2:   1.5; 2; 2.5; 2; 1.5; 2.5; 3 = 15/7 = 2.5

2 + 2.5 = 4.5/2 = 2.25. In this example, the student's performance was assigned a final score of 2.25. Scores were not rounded up or down.

<div align="center">Analysis</div>

The analyses of these findings and the statistical output contained in this manuscript were conducted using SPSS 14.0 the student version (SPSS, 2005). To address RQ1, a parametric matched pairs t-test was conducted (Burns, 2000). This statistical procedure was selected because of its appropriateness when the "same subjects are tested twice in before and after situations with….a training session placed between the two occasions (p. 198)" (Burns). Participant SGRR composite scores for the pre-test and the post-test samples were

compared to determine whether the observed differences were actual treatment differences or were due to random chance (Gravettner & Wallnau, 1985).   A .05 significance level was selected because this was an exploratory study.

To address RQ2, the 12-item, Technology and Distance Education in Skill Development, questionnaire was administered and completed by all students enrolled in the study. Descriptive statistics (i.e., frequencies and percentages) were used to report participant responses (Nardi, 2003).

<center>Limitations</center>

There were several limitations associated with this exploratory study. The first relates to sample selection and sample size. Participants were recruited from a convenience sample of students enrolled in the Practicum I, distance education course. Random selection of participants, while considered critical in experimental research, is often impractical when conducting applied research (Heppner, Kivilighan, & Wampold, 1999). While care was taken to ensure that the sample for this study shared similar characteristics of other distance education students, random selection may have created a more heterogeneous and diverse group. In this study, a majority of study participants were RSA employees with 1 to 5 years work experience in the rehabilitation field.

Although 100% of students agreed to participate in the study, the total N for the study was eight students. A small sample size can make detecting a significant difference more difficult as there is not sufficient power in the analysis to detect differences (Heppner et al., 1999). Heppner and colleagues (1999) recommend a minimum of 10 participants when conducting a matched t-test. Clifford and colleagues recommend a minimum of 20

participants when conducting a matched pair t-test to ensure sufficient power to detect differences. This sample is significantly smaller than both recommendations.

Also, a pre-post test design compromises the internal validity of the research. A pre-test and post-test design using a single group is noted for limited internal validity because changes in the dependent variable may be related to the effects of history, maturation, and instrumentation (Ray, 2009). There was no manualization or measurement of fidelity in this evidence-based educational research; therefore a complete description of the course cannot be provided.

An additional restriction is the limited generalizibility of the findings. Whereas many RCE programs are offering distance education options to their students only a few programs utilize ITV (Degiorgio & Kampfe, 2008) to deliver courses, specifically clinical courses. Without additional information on counseling skill acquisition using other forms of distance education mediums, conclusions from this study will be limited to programs utilizing ITV. Moreover, many programs require students to practice counseling skills in role-plays, audio or video record role-plays for faculty and peer feedback, as well as, transcribe a role-play "session" for personal reflection (Bradley & Fiorini, 1999). These elements were not required of students enrolled in this study. Approaches to skill-based training in RCE programs is likely to vary from program to program and from faculty member to faculty member. This factor also restricts the generalizability of the findings.

A related limitation is the duration of the study. Students' skill development in a Practicum course over one semester was the focus of this study. Student skills may improve with additional training and instructor feedback, elements that are continued in the Practicum

II course. Moreover, a quasi-experimental design that compares skill acquisition in a

traditional course to a course utilizing ITV (or other distance education medium) would

likely address the question of effectiveness of distance education and skill development more

aptly. Despite these limitations, the current study will offer an exploratory look at one

distance education medium (ITV) and students' skill development over a semester, a line of

research that has not been explored in the rehabilitation literature or broader field of

counseling.

CHAPTER FOUR

FINDINGS

This chapter will review the procedures and results of the analyses conducted address the guiding research questions:

RQ1: Do counseling skill levels improve from the beginning of Practicum I to the end of Practicum I for practicing rehabilitation counseling (RC) graduate students who are receiving instruction via distance education.

RQ2: How does the use of technology impact RC graduate students' experiences in a skill-based clinical counseling course (i.e. Practicum I)?

Five tables are provided in this chapter that summarize data and findings. There are a total of 12 figures presented within the chapter to provide visual summaries of the technology survey findings and analysis.

RQ1

To address whether counseling skills levels improve for students enrolled in Practicum I using ITV, this study utilized significance testing, the comparing of non-independent mean scores. Two recordings, considered pre-test and post-test measures were collected during the semester. A paired t-test comparison was selected because the scores collected during the semester could not be considered independent samples (the same students were sampled and all attended the same course with the same instructor). As this is an exploratory study, a .05 significance level was selected.

Skill Level Results

As previously indicated, a paired t-test was utilized to compare the group mean scores from the pre and post-test recordings. All scores were used in the calculations. The mean score for the pre-test was 1.88 and the mean score for the post-test was 1.99. The standard deviation for the pre-test was .239, and the post-test standard deviation was .302. Table 4.1 illustrates the means used for comparison.

Table 4.1

Paired Samples Statistics Mean Comparisons of Pre and Post Test Recordings

	Mean	N	SD	Std. Error Mean
Pre-test evaluation rating	1.88	8	.24	.085
Post-test evaluation rating	1.99	8	.30	.107

As Table 4.2 illustrates, no statistically significant difference between means was identified. This represents no significant change in skill development for students enrolled in the Practicum I.

Table 4.2

Paired Samples Statistics Significance Findings

	N	Sig.	t	df	Sig. (2 tailed)
Pre-test evaluation rating & Post-test evaluation rating	8	.776	-.900	7	.398

Initially, reporting the individual student scores on the SGRR was rejected because the intent of the study was to examine skill development using group mean scores. However,

a full description of the participants and their scores was included as a way to improve upon

the generalizability of the findings. Table 4.3 provides the scores on the pre-test and post-

test audio recordings for each of the students.

Table 4.3

Student Pre and Post Test Scores

Students	Pre-Test	Post-Test
001	1.9	1.5
002	2.0	2.4
003	2.2	2.3
004	1.6	2.1
005	1.5	2.0
006	2.0	2.0
007	1.9	1.6
008	1.9	2.0

Two of the students (001 and 007) scored lower on the post-test than on the pre-test

and one student's scores remained the same on both occasions (006). The remaining five

students improved on their post-test recordings. The overall pre and post scores for each of

the students reflect ineffective and unhelpful responses on the SGRR.

An effect size for the study was calculated using Cohen's *d* (Thompson, 2002). As

indicated earlier, an effect size is a statistical calculation used to determine how large an

observed effect between two variables is. Effect size is often referred to as "practical

significance" (Lenth, 2001; Smithson, 2000; Thompson). The effect size for this study was

.3. Using the general suggestions provided by Cohen, ("small"= .2," "medium", = .5," and

"large, = .8.") the observed effect between the pre-test and post-test samples could be

considered "small" (Thompson).

During the evaluation process, it was noted by this researcher and the evaluators, that

the types of responses used by students expanded from the pre-test to post-test. Table 4.4

provides a comparison of the types of students' responses on the pre-test and post-test

samples.

Table 4.4

Type of Student Pre-Test and Post-Test Responses

				Response Type			
Pre-Test Students	Open	Close	Attend	Question	Clarify	Paraphrase	Empathy
001	1		2	6	1		
002	1		2	5	2		
003	1		4	1	3	1	
004	1		3	5	1		
005	1		1	2	2		
006	1		3	2			
007	1			7	2		
008	1		2	4	1		2
TOTAL	8		17	32	12	1	2
Post- Test	Open	Close	Attend	Question	Clarify	Paraphrase	Empathy
001	1	1	1	3	2	1	
002	1	1	1	4	3		1
003	1	1	2	2		1	2
004	1	0	3	3	3		
005	1	0	2	4	2		1
006	1	0	2	5	2		
007	0	0	1	8			1
008 020	1		1	4	3		1
TOTAL	7	3	13	33	15	2	6

Careful review revealed that use of empathy as a counseling response increased on
the post-test measure, as did clarifying responses and the number of session closings.
Attending responses decreased on the post-test recordings. It should be noted that for three

students (38%), the number of questions decreased on the post-test measure and four students

(49%), increased on the post-test measure. For one student, (13%) the number of questions

utilized on both measures remained the same.

RQ2

To address whether the use of ITV and D2L impacted student learning during the

semester, a questionnaire was administered and collected on week 14 of the semester. The

questionnaire, Technology and Distance Education in Counseling Skill Development,

assessed students' perceptions on the use of technology (ITV and D2L) in their Practicum

course. The survey was designed to measure students' perceptions and experiences with ITV

and D2L in the Practicum 1 course. The range of scores possible on the questionnaire extends

from 12 to 60. A score of 12 would indicate an experience where use of technology was

perceived to have negatively impacted students' ability to learn the course material. A score

of 60 would indicate that a student perceived technology enhanced their ability to learn the

course material. The survey statements addressed four overarching themes; interaction,

learning and curriculum, efficiency, and comfort. Descriptive statistics, frequencies and

percentages were used for analysis of the responses. Readers are referred to Appendix A for a

copy of the instrument.

Survey Results

The analysis revealed a range of 28 between the minimum and maximum scores. The

minimum score was 20 and the maximum score was 48. The mean score was 35.13 with a

standard deviation of 9.43. As noted earlier, a score of 36 indicated that students remained

undecided or largely neutral to the questionnaire statements. Closer examination of the

responses revealed that students endorsed *undecided* in smaller percentages than the other responses. This would seem to suggest that when the responses were averaged, *strongly agree* and *strongly disagree* may have "cancelled" one another out, providing an overall score that appeared neutral. Table 4.5 summarizes the scores.

Table 4.5

Survey Score Summary

Scores	N	Range	Minimum	Maximum	Mean	Std. Deviation
	8	28	20	48	35.13	9.4

Table 4.6 lists the means and standard deviations of each response. The table also illustrates the range of scores for each of the survey statements. Statements three (curriculum and learning), four (interaction) and seven (efficiency), had the greatest range in responses from students, with at least one student indicating he or she strongly disagreed, and at least one student indicating that he or she strongly agreed with the statement.

Table 4.6

Descriptive Statistics of the Technology Survey

Statements	N	Min	Max	Mean	SD
1. I felt comfortable using ITV and D2L	8	1	4	3.38	1.18
2. ITV and D2L were more motivating to me than traditional classroom.	8	1	3	2.38	.744
3. Technical difficulties impacted my ability to learn course materials.	8	1	5	2.25	1.58
4. Using ITV and D2L were too impersonal.	8	1	5	3.13	1.64
5. ITV and D2L improved the quality of the course	8	1	4	3.13	1.24
6. ITV and D2L made interacting with fellow students easier.	8	1	4	2.50	.926
7. Distance education is an efficient use of my time.	8	1	5	3.63	1.50
8. The use of technology did not distract me from the lesson being taught.	8	1	4	3.38	1.18
9. I felt uncomfortable using ITV and D2L in Practicum.	8	1	4	3.00	1.19
10. ITV and D2L made interacting with my fellow students difficult.	8	1	4	2.50	1.06
11. I would have preferred a traditional approach to learning counseling skills.	8	1	4	2.13	.83
12. Using ITV and D2L makes the subject matter less interesting.	8	2	5	3.75	1.03

Students' responses to the survey statements will be addressed using the four theme areas, interaction, learning and curriculum, efficiency and comfort. Figures 4.1 through 4.12 provide a visual representation of the percentages of student responses to the survey statements. As noted earlier, some of the questions in the Technology and Distance Education in Counseling Skill Development questionnaire were positively worded while others were negatively worded. The directionality of the scores provided in figures 4.1-4.12 reflect the reverse coding of each statement on the questionnaire.

Interaction. Several survey statements (i.e. four, five, six, and ten) addressed student interaction during the course. As shown in Figure 4.1, students were asked whether the use of technology (D2L and ITV) improved the quality of course interactions. Five students, (63%) agreed with the statement, three students (37%) disagreed or strongly disagreed with the statement. No student was undecided on this statement.
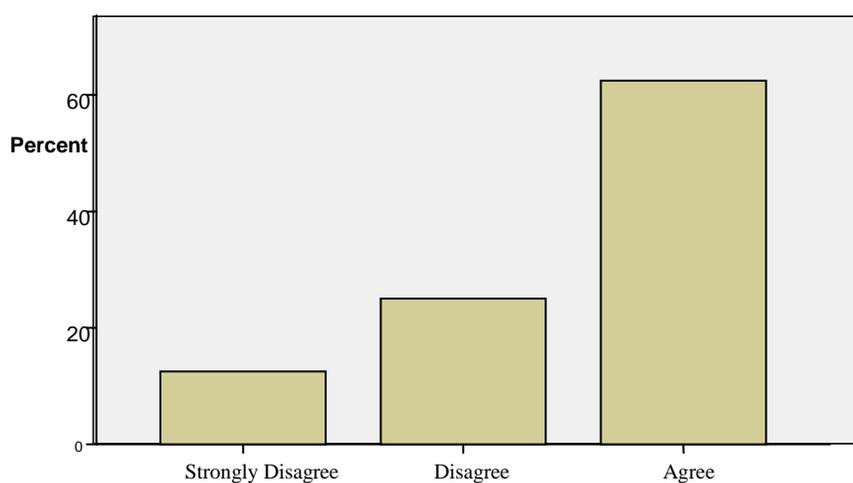

Figure 4.1. Students were asked to respond to whether ITV and D2L improved the quality of course interactions. (Item # 5)

When asked if use of technology made interacting with fellow students easier (Figure 4.2), one student (12%) agreed with the statement whereas four students (50%) strongly disagreed or disagreed with the statement. Three students (38%) remained undecided on whether technology made interacting easier.
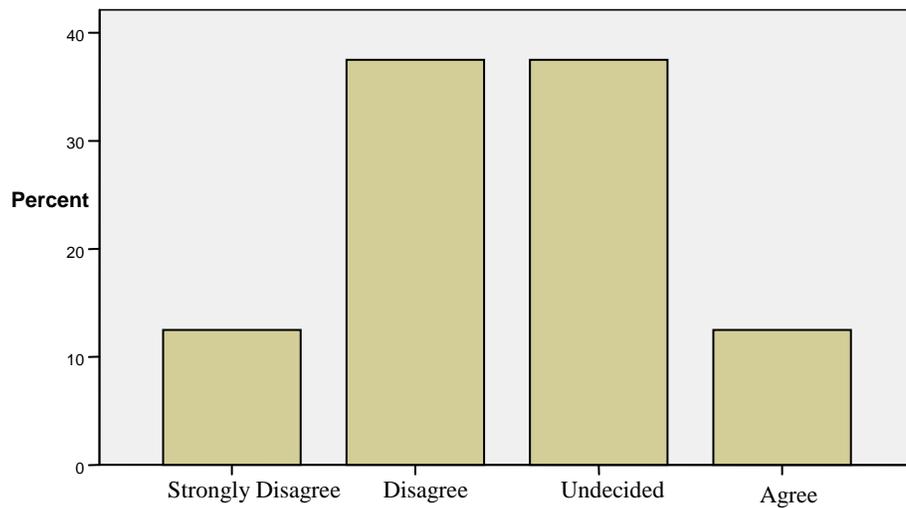

Figure 4.2. Student responses to whether ITV and D2L made

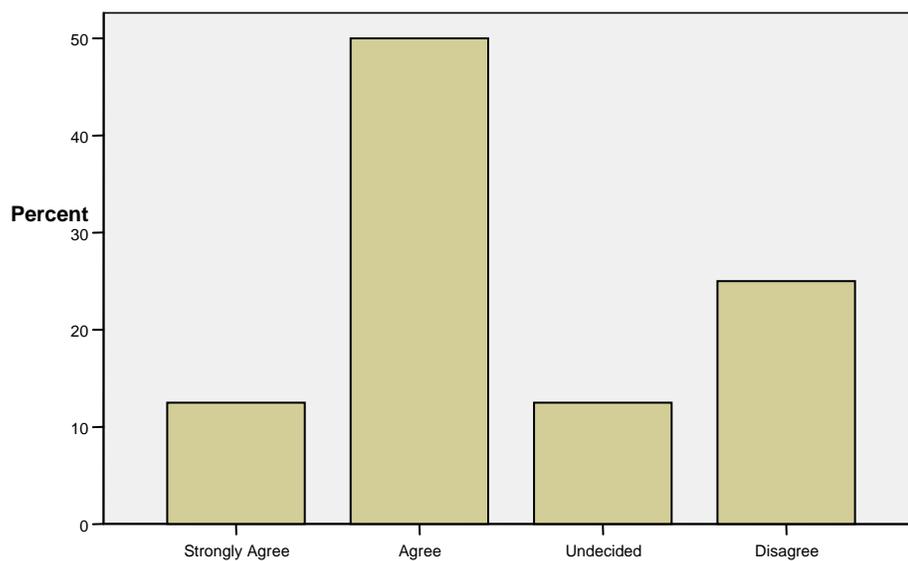interacting with fellow students easier. (Item #6)

Figure 4.3. Students' responses to whether ITV and D2L made

interacting with fellow students difficult. (Item # 10)

Figure 4.3 represents student responses to whether the use of technology made interactions with students difficult. Five students (62%) indicated that they agreed or strongly agreed with the statement, two students (25%) disagreed with the statement, and one student (13%) remained undecided at the end of the semester.

Students were asked whether ITV and D2L were too impersonal. Figure 4.4 displays students' responses. Three students (30%) agreed or strongly agreed that they found use of the technology too impersonal whereas four students (50%) disagreed or strongly disagreed with the statement. One student indicated he or she remained undecided.
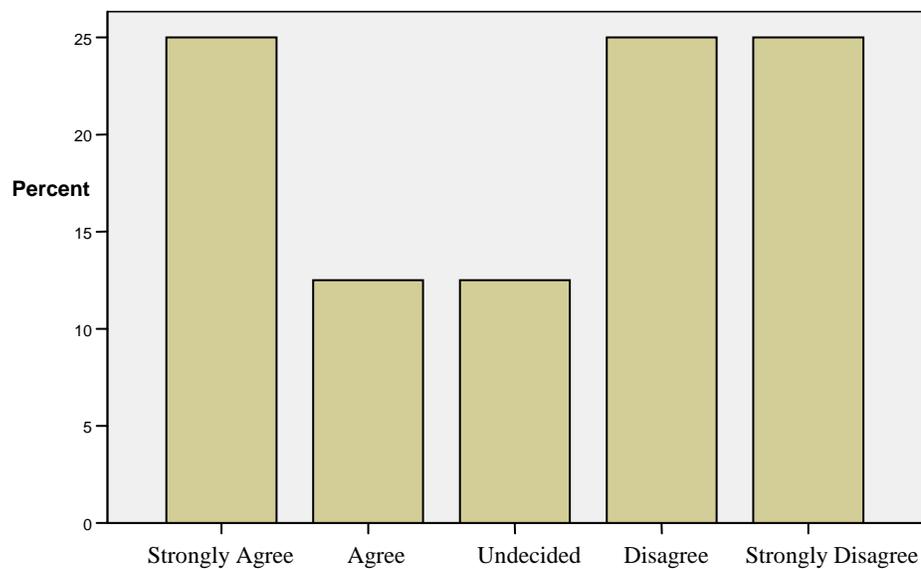
Figure 4.4. Students were asked to indicate whether using ITV and

D2L were too impersonal during Practicum I. (Item # 4)

Curriculum and Learning. Survey statements that addressed curriculum and learning using technology ITV and D2L were questions number two, three, eight, eleven and twelve. Figure 4.5 demonstrates that six students (75%) agreed that the use of technology did not distract them from the curriculum being taught. Two students (25%), disagreed or strongly disagreed with the statement.
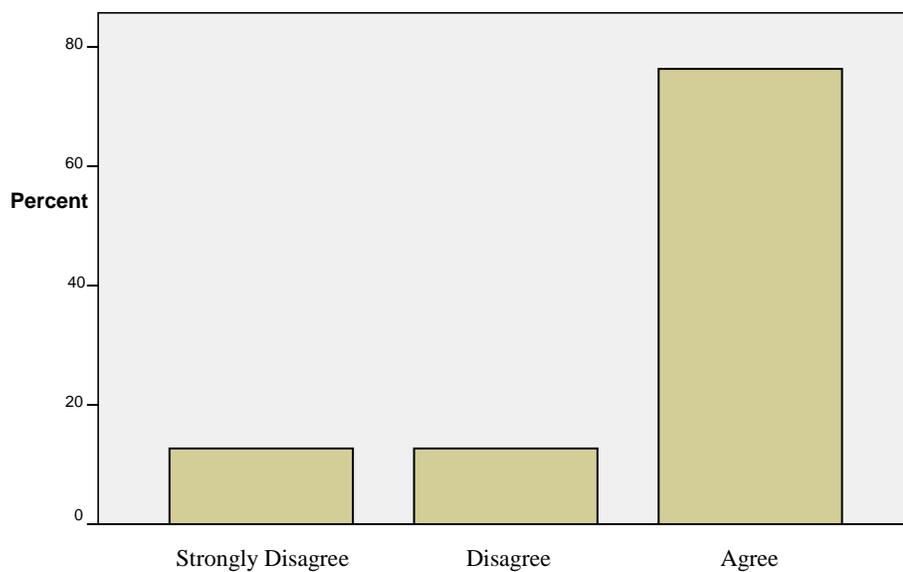

Figure 4.5. Students' responses to the statement, the use of technology did not distract me from the lesson. (Item #8)

As shown in Figure 4.6, five students (62.5%) strongly agreed or agreed that technical difficulties did impact their ability to learn course material. One student (12.5%) remained undecided, two students (25%) disagreed or strongly disagreed with the statement (12.5%).
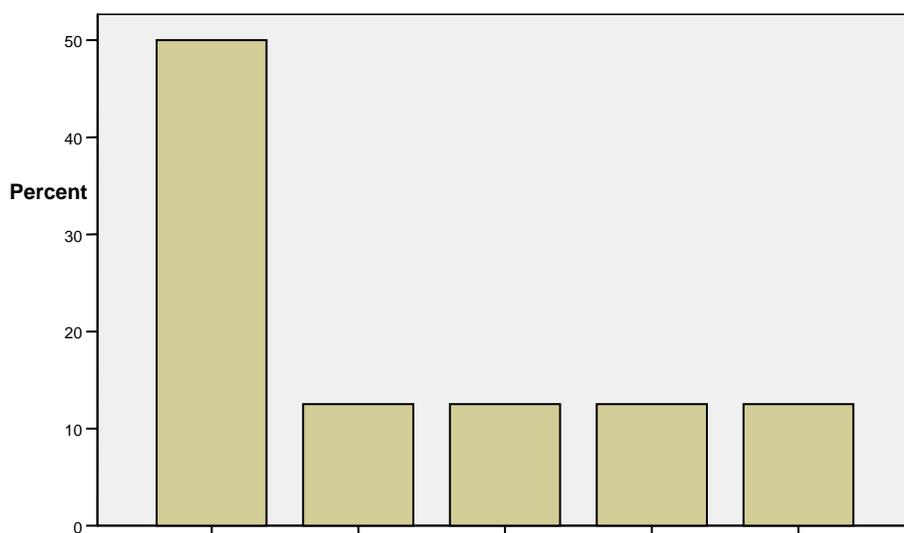

Figure 4.6. Students' responses to whether technical difficulties impacted my ability to learn course materials. (Item # 3)

When asked whether use of technology was more motivating than a traditional Practicum course, four students (50%) strongly disagreed or disagreed with the statement. Four students (50%) were undecided about the statement.
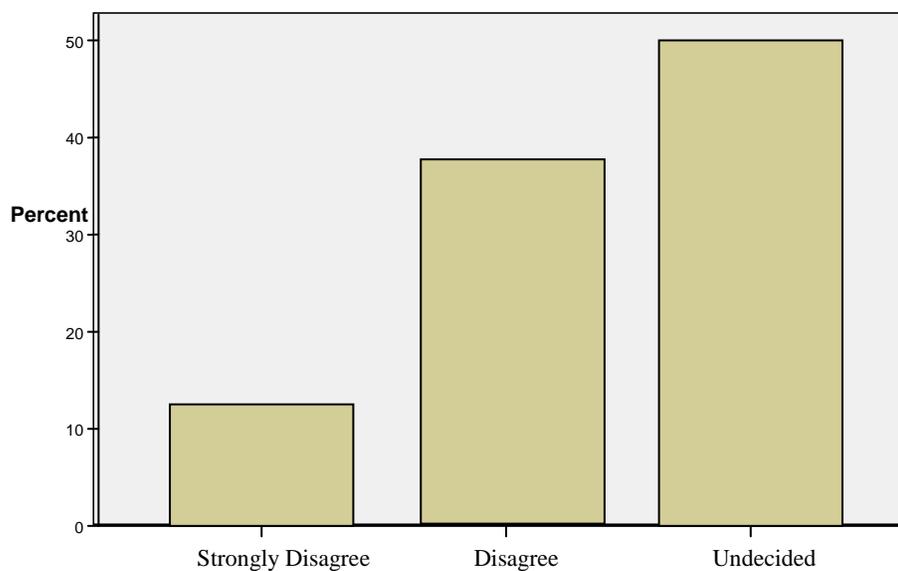

Figure 4.7. Students' responses when asked whether ITV and D2L were more motivating than traditional classroom. (Item #2)

Figure 4.8 shows students' responses when asked whether the use of ITV and D2L made the subject matter less interesting. Five students (62%) indicated they disagreed or strongly disagreed with this statement. Two students (25%) indicated they were undecided and one student (13%) agreed that using technology made the subject matter less interesting.
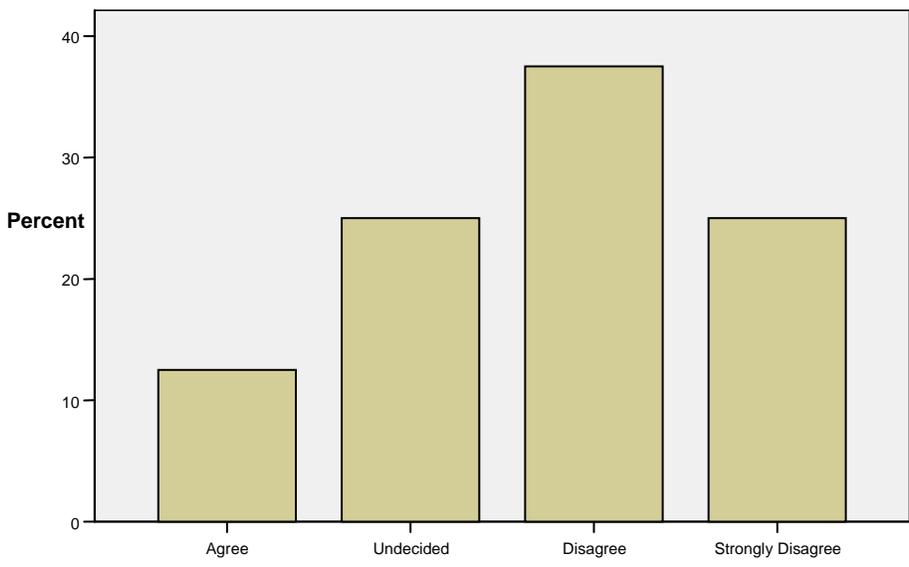

Figure 4.8. Students' responses to whether using ITV and D2L made the subject matter less interesting. (Item #12)

Seven students (87%) strongly agreed or agreed that they would have preferred a traditional approach to learning counseling skills. Only one student (13%) disagreed with this statement.
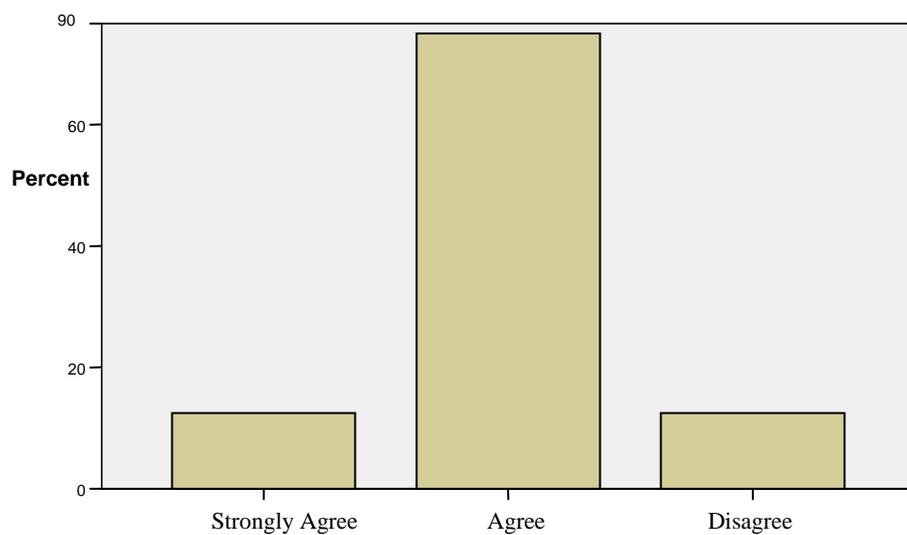

Figure 4.9. Students' responses to preference for a traditional approach when learning counseling skills. (Item #11)

Efficiency. Survey statement seven asked students to indicate whether they found distance education and efficient use of their time. Figure 4.10 shows that five students (62%) agreed or strongly agreed with the statement. Two students (25%) disagreed or strongly disagreed that distance education was an efficient use of their time. One student (13%) remained undecided with the statement.
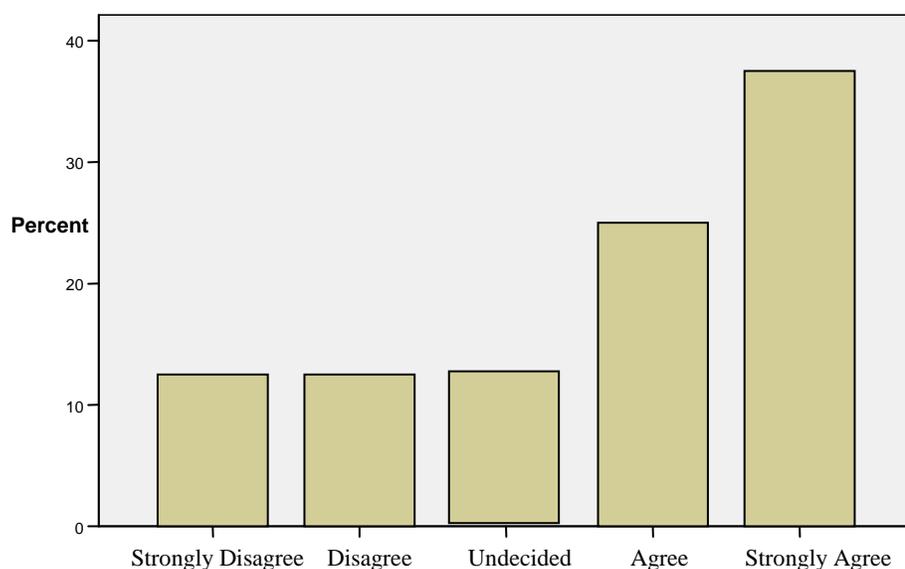
Figure 4.10. Students' responses to whether distance education was an efficient use of their time. (Item #7)

Comfort. Survey statements addressed students' comfort (one and nine) with technology, specifically ITV and D2L. Figure 4.11 shows that six students (75%) agreed that they felt comfortable using the course technology. When the question was reversed (Figure 4.12) and students were asked whether use of technology made them uncomfortable, four

students (50%) disagreed and three students (37.5%) either agreed or strongly agreed. One

student (12.5%) remained undecided. It would appear that two students altered their

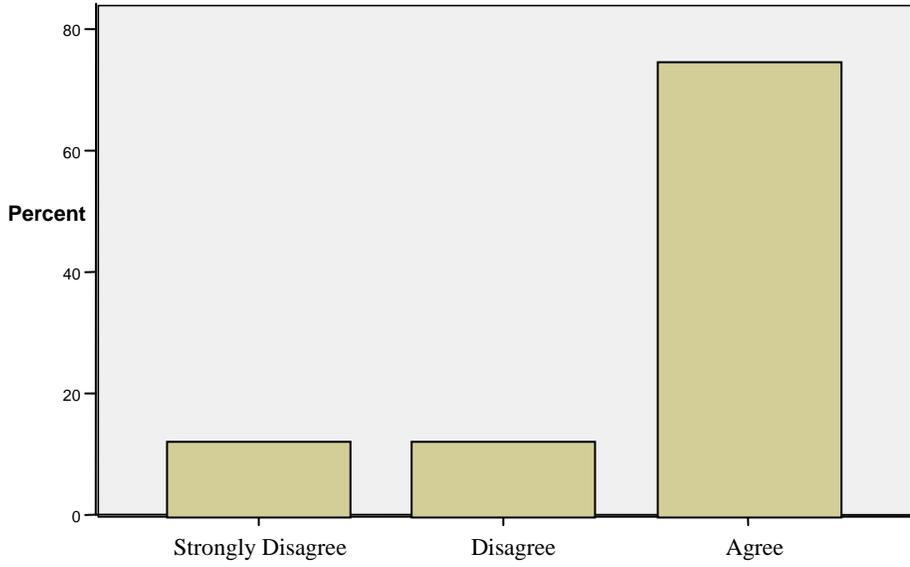responses in response to comfort when the statement was negatively worded.

Figure 4.11. Students' responses to whether they felt comfortable using
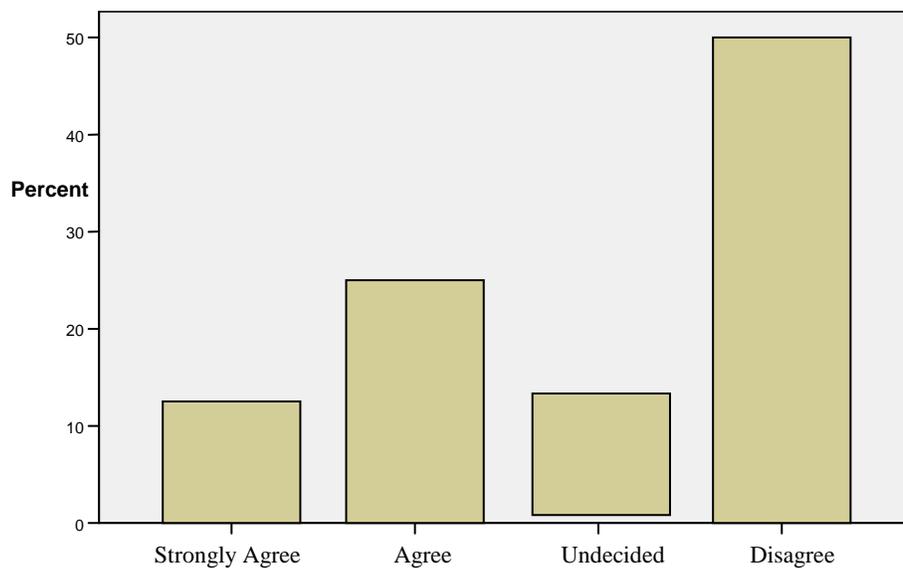
ITV and D2L in Practicum 1 (Item #1)

Figure 4.12. Students' responses to whether they felt uncomfortable

using ITV and D2L in Practicum 1. (Item #9)

Summary

This chapter has provided the analyses of the data collected during Spring 2008 Practicum I distance education course utilizing ITV and D2L for curriculum delivery for practicing rehabilitation counselors. Students enrolled in the course completed one audio recording at the beginning of the semester and one at the end of the semester. In addition, students were asked to complete a survey regarding use and attitude toward ITV and D2L in the course at the end of the course.

The audio recordings were treated as pre and post-test measures. A skill-level score was calculated for pre-test recordings and a skill-level score was calculated for the post-test recordings. Comparing these mean scores revealed no statistically significant increase in counseling skill development from the beginning of the semester to the end of the semester. The post-test recordings did yield slightly higher scores from the pre-test.

Student responses to the technology questionnaire revealed that a majority of students (62%) believed the use of distance education, ITV and D2L were an effective use of their time. Students seemed split on whether technology enhanced learning and interactions, depending on how the question was asked (whether positively or negatively phrased). When asked whether ITV and D2L made interacting with students easier, 12% of the students agreed with the statement, however; when the question was negatively worded and students were asked whether using ITV and D2L made interacting with students difficult, 65% strongly agreed or agreed with the statement. Two students changed their response when the question was negatively worded. Twenty-five percent of student disagreed with the statement. Sixty-three percent of students agreed that the use of ITV and D2L improved the

quality of the course interactions and yet 30% of students indicated they found use of the technology too impersonal. Sixty-three percent of students strongly agreed or agreed that technical difficulties impacted their ability to learn course materials. When asked whether the use of ITV or D2L were more motivating than a traditional environment, no students agreed and 50% strongly disagreed or disagreed with the statement. The remaining 50% were undecided. Students were asked whether the use of ITV and D2L made the subject matter less interesting and 13% agreed, 25% were undecided and 62% strongly disagreed or disagreed with the statement. Students responses to the question of comfort with technology were divided equally, 50% felt uncomfortable, while the other 50% reported feeling comfortable with technology. When students were asked to indicate their preference in learning approaches, 87% of student responses indicated a preference for a traditional approach to learning clinical skills and yet 75% did not perceive that technology distracted from their learning experience.

The overall mean score for the technology questionnaire was 35.13, slightly lower than a neutral response of 36 to the use of D2L and ITV in a counseling skills course. Mean scores for each of the questionnaire statements did not rise above 3.75 on a one to five scale. The statement associated with the highest mean score was, "Using ITV and D2L makes the subject matter less interesting". A score of four was assigned to response category "disagree." Overall it appears students are not undecided but may not have felt strongly enough to rate their response higher.

The statement that received the lowest overall mean score, 2.13, asked students whether they "would have preferred a traditional approach to learning counseling skills."

This question was reverse coded, so a score of 2.13 indicates that students agreed that they would have preferred a traditional approach to learning counseling skills.

The overall mean score and the mean scores for each of the statements seem to reflect a neutral or undecided attitude toward technology in the course, however, as discussed earlier in the chapter, students endorsed *undecided* in smaller percentages than the other responses. This would seem to suggest that when the responses were averaged for each participant, the extreme scores of *strongly agree* and *strongly disagree* may have "cancelled" one another out, providing an overall score and individual item score that appears neutral.

CHAPTER FIVE

DISCUSSION

Rehabilitation counseling education programs (RCE) have utilized simple, moderate, complex and total technology adoption to deliver courses to students across the country (Degiorgio & Kampfe, 2008). Utilization of technology to provide Practicum I and Internship courses is occurring within many CORE accredited programs and many RCE programs are utilizing technology to deliver courses and entire degree programs (Degiorgio & Kampfe). Nevertheless, no examination of the effectiveness of synchronous distance education in rehabilitation counselor (RC) preparation programs has been undertaken. This study was an exploratory examination of RC students' skill acquisition and development in a Practicum I distance education course using ITV. The conclusions provided below may have implications for RCE program direction, RC student preparation, and technology adoption and utilization.

The researcher of this study did not directly compare a traditional education format with a distance education format. The intent of the study was to explore the use of technology and distance education in providing counseling skills training to practicing rehabilitation counseling students. The findings of this research project seem to contradict some of the elements associated with positive student outcomes identified in the work of Siegfried (2000), as well as the meta-analyses conducted by Matchmes and Asher (2000), and by Zhao and colleagues (2005).

Siegfried (2000) designed a between groups study examining counseling responses and communication skills in an asynchronous distance education medium. Like the current

study, Siegfried also used the SGRR to rate student responses. This researcher selected the responses that were consistent with the textbook and materials used in the Practicum I course for evaluation. Siegfried found that the practicing counseling professionals in the traditional and distance education groups scored better than students new to the graduate program and field of counseling.

The difference between the practicing rehabilitation counselors in Siegfried's study and those in the current study may be attributed to the evaluation process rather than the distance education medium (asynchronous and synchronous). While the researcher was not an official evaluator, she was present during the evaluation process. There were instances when she believed the ratings by the independent evaluators were too low, however, because they were within .5 of one another, she could not challenge the findings or scores because they were consistent with the established protocol.

In the Siegfried (2000) research, the students were known to the evaluators. Although "every precaution" was taken to protect the identity of the students from the evaluators, complete anonymity was impossible. In the current study, the evaluators were not familiar with the students enrolled in Practicum I distance education course. It may be that familiarity with the students positively influenced the scoring of student responses, whereas in the current study evaluators were able to rate the responses without being influenced by previous knowledge of the students. This may also have negatively influenced scoring, as the evaluators may have had preconceived expectations of students' skill levels.

Elements of distance education found to be associated with higher student outcomes in the meta-analyses conducted by Matches and Asher, along with Zhao and colleagues,

included level of interaction, content area, type of learning site, learner characteristics and bias. Findings in the current study contradict earlier research in three of these areas: interaction and content area, and learning site.

Interaction

Frequent interaction with faculty in a distance education course has been found to be related to improved student outcomes (Fulford & Zhang, 1993; Matchmes & Asher, 2000; Zhao et al., 2005). In this study, students were provided with many opportunities for peer-to-peer interaction and instructor-student interaction. Faculty interacted with students, weekly, in class using the ITV system and addressed student concerns and issues via email and on the discussion board. Students were expected to post responses on the discussion board and respond to postings from fellow students. Students also traveled to the site nearest the university on three occasions in order to facilitate "face-to-face" interaction with peers and faculty.

Despite the frequent opportunities for interaction, the student skill levels did not significantly improve from the pre to the post-test. Perhaps the content of the interaction was not targeted, specific or as personal as necessary for a clinical skills course. Students in this study reported technology made interacting with one another difficult (63%) and reported that the interactions were impersonal (30%). Perceived difficulty in interacting may have had a significant impact on how students received and applied skill-specific feedback. Mean scores for the individual interaction items on the questionnaire appear largely neutral (undecided) however, as mentioned earlier the extreme responses, strongly agree and strongly disagree may have affected the overall average score.

Accredited counseling programs routinely require audio or video recordings of student counseling sessions or role-plays during practicum, for evaluation of skill acquisition (Bradley & Fiorini, 1999). Students may also be asked to transcribe an audio recording and reflect on their counseling responses and meet individually for feedback and clinical supervision (Bradley & Fiorini). Students enrolled in this study were not asked to provide any additional recordings for review for feedback but rather performed role-plays for class viewing using ITV. Review of the pre-test recordings occurred during a subsequent class period and students were asked to identify counseling responses. Neither faculty feedback nor peer feedback were a component of this activity. This activity was separate from the study.

The structure of the course provided students with ample opportunity for interaction (i.e., weekly ITV interaction, email, weekly postings, and three visits to main university campus) but frequency may be less essential than immediate, personal, and skill-based feedback. Opportunities to practice skills with personal and individualized feedback may have a greater impact on student skill development, versus the number of opportunities provided to interact with peers and faculty.

Content Area

Findings from this study did not support earlier findings from the meta-analyses that specific content areas, like social science, science, mathematics, business and skill specific courses, taught via distance education were associated with higher student outcomes (Matchmes & Asher, 2000; Zhao et al. , 2005). As asserted earlier for the current study, statistically significant increases in skill development over the semester did not occur.

Although post-test responses were higher (1.88 pre-test as compared to 1.99 post-test), the responses were considered ineffective and unhelpful on the SGRR.   It is important to note that Zhao and colleagues had very few articles specific to skill-based courses to analyze and urged caution when interpreting the results of content specific outcomes.

Survey responses from the current study's participants indicated that technology did not interfere with student interest in the material or their ability to learn course materials; however, 62% of students indicated that technical difficulties interfered with their ability to learn course materials. Moreover, despite having utilized ITV and D2L technology for other rehabilitation related courses, approximately 37.5% of students reported feeling uncomfortable with technology in the clinical skills course. This is a notable finding because students surveyed on the first day of class had overwhelmingly positive expectations for using ITV for Practicum I.

The answer to this seeming contraction between the findings of this study and those of other distance education research may be the combination of distance education and demands of counseling skills training. Students' responses to the technology survey showed that a majority of students felt that technology negatively impacted their ability to learn the material. Near the end of the semester, participants in this study overwhelmingly (87%) reported a preference for a traditional approach to learning clinical skills. Perhaps there is something unique to technology that lends itself to some skills-based courses but not counseling skills training.

Learning Site

Findings from the distance education and rehabilitation counseling literature (Armstrong, 2003; Machtmes & Asher, 2000; Mansouri, 2003) show that students are more likely to complete assignments at their workplace versus their home. Researchers surmised that students utilized the high speed internet connections or broadband connections to send and receive school related materials. It was also proposed that students may feel more obligated and motivated to perform well if their employers are financially contributing to their education (Mansouri). In this study, seven of the eight participants were receiving tuition and education assistance from the Rehabilitation Services Administration (RSA) in order to meet specific conditions of their employment. RSA also owned the teleconferencing sites where the training occurred; however, students only slightly improved their skill acquisition. Skill development is only one element of the Practicum I course that students were evaluated on and the recordings used for this study were not used in assigning student grades. Without benefit of final grades, this study cannot confirm or reject the assertion that students using workplace resources made satisfactory progress in the course; however, with regard to skill acquisition we can say that students made slight improvements in skill development.

Two areas associated with higher learner outcomes did confirm findings from the meta-analyses: learner characteristics and bias. As discussed earlier, learners who participate in distance education courses are usually employed full-time, attending school part-time and juggling multiple family and social roles (Armstrong, 2003; Gilbride & Stensrud, 1999). Students in this study are also employed full time and juggling many responsibilities in addition to attending a master degree program.

Bias was identified as a factor in studying the effectiveness of distance education (Machtmes & Archer 2000; Zhao et al., 2005). Bias, as it applies to the current study, referred the role of the author in the study. Zhao and colleagues determined that significant findings for distance education were more likely to be detected if the researcher was also the instructor for the course. When the author was not the instructor, no statistically significant differences were found between traditional and distance education mediums. The findings of this study are consistent with those of Zhao, the researcher was not the instructor and no difference between the pre and post tests were found.

The effect of sample size on the findings of this study cannot be overstated. It is likely that significant changes in skill development were undetected because of the small sample size of the study. As indicated earlier, the pre-test score was 1.88 and the post-test score was 1.99, demonstrating improvement, however, the change was not statistically significant. The effect size indicated a "small" observable difference between the samples. Heppner and colleagues (1999) recommended a minimum of 10 participants for a matched means comparison, while Clifford and colleagues recommended 20 participants to conduct a matched pairs t-test. The current study had a total of eight participants drawn from a convenience sample of students enrolled in Practicum I. With so few participants, the size may not have had sufficient power to detect a true difference between group means. Increasing the sample size through data collection over several semesters and academic years may strengthen the analysis.

An additional explanation for the limited improvement in skill acquisition may be related to the students and their professional identity. Seven students enrolled in the study

have worked in their current positions with the Rehabilitation Services Administration for a minimum of one year. The eighth student in the study worked for a local behavioral health agency as a Psychosocial Specialist for at least one year. It may be possible that students enrolled in the distance education program have already developed their professional identity and were comfortable with their current "style" of counseling. If students were satisfied with their counseling approach, and their work performance reinforced their professional identity, some resistance and reluctant to change may have resulted. This reluctance may have manifested itself in stunted skill development as measured by the SGRR.

It is important to note that comparing mean scores may be a somewhat narrow view of skill development and student gain. It was noted by the independent evaluators that student responses expanded over the semester. The pre-test recordings comprised an overwhelming number mechanical session openings, a reliance on questions, and no closing efforts. It seems that at the end of the semester, students were able to manage their time better to include session closing statements. Role-play openings were less mechanical and more personal, empathizing responses increased as did clarification statements and paraphrasing. The number of questions remained high but decreased for several students on the post-test recording. In addition, students were recorded using audio only. There is the possibility that having used video recordings, the number of empathy responses may have been more obvious and therefore would have increased. Furthermore, because the participants had not used audio recordings during the semester, they may have been uncomfortable with the activities, which may have influenced their recorded skill levels.

When interpreting how technology may have impacted students' experiences, some responses to the technology questionnaire stand out. For instance, a majority of students (62.5%) reported that technology negatively impacted their ability to learn course material. An overwhelming majority (87%) reported that they would have preferred Practicum I taught using a traditional format despite a 75% agreement that they felt comfortable using ITV. With regard to interaction, responses were mixed and often contradictory. Students responded in agreement that ITV and D2L improved the quality of the course interactions, but disagreed that ITV and D2L made interacting with their fellow students easier. When asked whether interactions using technology were too impersonal, students' responses were mixed, 25% strongly agreed but 50% disagreed. It seems that using ITV and D2L offered some positive aspects to the students' experiences but it may be that students' expectations of using technology in a counseling skills course were not met.

Recommendations

While many RCE programs are offering distance education options to their students, only a few programs utilize ITV (Degiorgio & Kampfe, 2008) to deliver courses, specifically clinical courses. The findings of the current study may be particularly relevant for RCE programs investigating the introduction of web-casting and webconferencing into their programs. While RC students appreciate the flexibility and convenience that technology can offer (Hansmann, et al., 2007; Mansouri, 2003; Moore et al, 2005), students in this study overwhelming desired a traditional approach to counseling skill development. Additional studies from institutions utilizing ITV and webconferencing may improve the generalizability of the data presented here.

Examining the skill development of students in a Practicum I course over one semester may not provide enough data to sufficiently demonstrate change in skill development. Practicing professionals with an established style may need additional time to absorb the information, incorporate the new techniques, and modify their counseling style. It is possible that skill acquisition may continue to improve during Practicum II or during their internship. A more extensive and longitudinal study may yield data about skill development, skill mastery and maintaining skills in "real world" settings over time.

 Also, an experimental design comparing a traditional course to an ITV course may address the effectiveness of distance education and skill development more aptly. These types of studies are often difficult to conduct and harder to interpret because of confounding variables, however, it may be worth comparing skill attainment of students enrolled in a traditionally taught counseling skills course to those enrolled in a synchronous distance education course. Siegfried (2000) attempted such a comparison of RC students in a counseling skills course however; his study examined an asynchronous medium. Utilizing a synchronous medium to teach a distance education course would be most appropriate because a synchronous medium provides the same format (instructor directed), but delivery mediums are different (ITV, webconferencing).

Despite the limitations of the design, this study has offered the only analysis of a synchronous distance education medium (ITV) and counseling skill development. While a significant change in skill development was not identified, student overall skill levels increased and student responses expanded to include more examples of empathizing and

clarifying. Individual student responses during the post-test recording emphasized the reflection of feeling versus content.

    While students reported that technology had little impact on their interest in the subject matter or motivation in the course, technical difficulties negatively impacted their ability to learn course materials. Technical difficulties are associated with most distance education courses (Mansouri, 2001; Moore et al., 2005; Rea et al., 2000) and faculty should be prepared with alternatives (Rea et al.). Despite having been exposed to ITV in previous courses, students reporting feeling uncomfortable with the technology in this particular course. This may have implications for faculty utilizing ITV or other synchronous mediums. Exposure and comfort with technology may not be enough in a skill-based training course. Distance education may not lend itself well to a clinical skills development course. More research into all aspects of counseling skills acquisition and evaluation has been recommended (Eriksen & McAuliffe, 2003; Sexton, 2000; Whiston & Coker, 2000) and this should extend to include non-traditional approaches to curriculum delivery and learning.

APPENDIX A: INSTRUMENTS

Participant Questionnaire

Please answer the following questions to the best of your ability. Your responses will be kept completely confidential and will not, in any way, affect your grades in the Rehabilitation Counselor masters degree program. Your instructor will not see your responses.

1. What is your gender?

    a. Male

    b. Female

    c. Transgender

    d. Other

2. What is your marital status?

    a. Single

    b. Married

3. What is your age? _____

4. What is your race/ethnicity?

    a. African-American/black

    b. Asian

    c. Hispanic/Latino

    d. Native or Pacific Islander

    e. Native American

    f. White

    g. Other (please list)_____

5. Are you currently working? If yes, please list your job title.

    a. Yes, _____

    b. No

6. How many months or years have your worked in your current job?

    a. <6

    b. 6-12 months

    c. 1-5 years

    d. 6-10 years

    e. >10 years

7. How many hours per week do you use the computer for work or school related activities? (include time spent typing session notes, sending emails, completing forms, or using internet for research activities).

8. Have you participated in an ITV course prior to attending this one?

    a. Yes

    b. No

9. Using the following scale, please rate your expectations of using ITV in SERP 594/Practicum.

1	2	3	4	5
Very Negative				Very Positive

Scale for Global Ratings of Responding Summarized

Level	Key Word	Results	Helper Actions Characterized by	Helper's Goals
1.0	Harmful	Not helpful	Criticism or inaccuracy	Inappropriate
2.0	Ineffective	Not helpful	Unsuitable advice	Inappropriate, tries to be and appear important to the helpee
3.0	Facilitative	Helpful	Relationship Building	To earn the right to help
4.0	Additive	Helpful	Problem-solving	To help

From: Human Relations Development: A manual for educators, by G. Gazda, F. Balzer, W. Childers, A. Nealy, R. Phelps, R. Walters, 2005, Boston: Allyn & Bacon.

Global Scale for Rating Helper Responses

Level 1.0 Harmful: Not helpful	Level 2.0 Ineffective: Not helpful	Level 3.0 Facilitative: Helpful	Level 4.0 Additive: Helpful
Ignores what the helpee is saying Ridicules the helpee's feelings Seeks to impose beliefs and values on helpee Dominates the conversation Challenges the accuracy of perception Uses problem solving dimensions in a way that damages the relationship	Communicates a partial awareness of the helpee's surface feelings Gives premature or superficial advice Responds in a casual, mechanical, or questioning way Reflects content by ignores the feelings of the helpee	Reflects the accurately and completely the helpee's surface feelings, Communicates acceptance of the helpee as a person of worth, and Clearly communicates caring	Demonstrates willingness to help and accurately perceives and responds to the helpee's underlying feelings (empathy). Appropriately uses one or more of the problem-solving dimensions to: Concreteness Genuineness Self-disclosure Expertise Confrontation Immediacy

From: Human Relations Development: A manual for educators, by G. Gazda, F. Balzer, W. Childers, A. Nealy, R. Phelps, R. Walters, 2005, Boston: Allyn & Bacon.

Technology and Distance Education in
Counseling Skill Development

This purpose of this questionnaire is to learn more about your experience in the Practicum I distance education course. Please indicate whether you strongly *agree (SA)*, *agree (A),* are *undecided (U), disagree (D)* or *strongly disagree (SD)* with the statements.

1. I felt comfortable using interactive television (ITV) and D2L in Practicum I.   SA   A   UN   D   SD

2. ITV and D2L were more motivating to me than traditional classroom instruction.   SA   A   UN   D   SD

3. Technical difficulties impacted my ability to learn course materials   SA   A   UN   D   SD

4. Using ITV and D2L were too impersonal.   SA   A   UN   D   SD

5. ITV and D2L improved the quality of course interactions.   SA   A   UN   D   SD

6. ITV and D2L made interacting with my fellow students easier.   SA   A   UN   D   SD

7. Distance education is an efficient use of my time.   SA   A   UN   D   SD

8. The use of technology did not distract me from the lesson being taught.   SA   A   UN   D   SD

9. I felt uncomfortable using ITV and D2L in Practicum I.   SA   A   UN   D   SD

10. ITV and D2L made interacting with my fellow students difficult.   SA   A   UN   D   SD

11. I would have preferred a traditional approach to learning counseling skills.   SA   A   UN   D   SD

12. Using ITV and D2L makes the subject matter less interesting.   SA   A   UN   D   SD

APPENDIX B: EVALUATOR TRAINING

Evaluator Training
Agenda

Introduction

       Purpose

       Procedures

       Texts

Types of Responses

       Opening and Closing Sessions

       Empathizing

       Paraphrasing

       Clarifying

       Questioning

Scale of Global Rating and Responding

Review of Counseling Sessions

       Rating Responses

       Discussion of Scores

       Calculating Scores

Evaluator Training

Introduction

Purpose

The purpose of this training is to prepare independent evaluators to assess rehabilitation counselor education students' performance of specific counseling skills. The research question guiding this training is: will counseling skill acquisition for rehabilitation counseling graduate students enrolled in a distance education counseling skill development class (i.e. practicum) differ significantly from rehabilitation counseling graduate students receiving counseling skill instruction in a traditional classroom setting?

Procedures

Trainees will listen to audio recordings of former Practicum I students. The recordings are of students engaged in a role-playing exercise that was also a course assignment. Trainees will listen to a 10 minute segment of the role-play and use the Scale for Global Ratings and Responding, to assess students' performance. Students' responses will be rated on whether they were helpful or not helpful in facilitating communication and contributing to the counseling relationship. For the initial, baseline, recording, the following areas will be evaluated: opening and closing a session, empathizing and paraphrasing. For the final recording, the following areas will be evaluated: opening and closing a session, empathizing, paraphrasing, clarifying and questioning. Responses for these areas will be given a numerical score from one (harmful/not helpful) to four (additive/helpful). A composite score will be generated by calculating an average score, (i.e., each of the response scores summed and divided by total responses). For a final

composite score, the evaluators will add their individual scores together and divide by the number of evaluators. For the research project the number of evaluators will be two. This score represents the students' final score for the recording.

Texts and Instruments

The counseling skills that will be evaluated are taken from the text, *Basic Counseling Responses*, by Haney and Liebsohn. This text has been adopted by the Rehabilitation Counselor Education program and is utilized for Practicum I and Practicum II.

The evaluation instrument is the Scale of Global Rating and Responding, developed by Gazda and colleagues (2005). The instrument has been in use since the 1970s in counseling and educational settings to measure facilitative communication skill development.

Types of Responses

The types of responses that will be evaluated are provided by the text, *Basic Counseling Responses,* adopted for SERP 594, Practicum I. The following section defines the types of responses that will be evaluated for performance-based competency.

Opening or Closing Sessions

Opening and closing a section "can set the tone and momentum (p. 11)" of a session. Different settings may require different openings however, it is typically the counselor who assumes responsibility of initiating the open and the closing of a session. The intent of opening a session is to explore what they client may want to discuss. Opening a session should use an open-ended format and may include a simple greeting, gesture or paraphrasing of precipitating events. The intent of closing a session is to acknowledge the end of a session and the clients' responses during the session.

Attending

Attending means giving full and undivided attention to the client. It is the art of being with the client. It is also the art of paying attention to what you see and hear, not just what you know. Part of attending is to slow the pace, resisting the temptation to talk or keep the conversation moving. Attending is used to acknowledge the client.

Empathizing

Empathizing is considered a response to client feeling. Empathizing requires that the counselor try to understand "how it feels to be the client (p. 17) and the feelings of the client, whether or not the counselor has experienced them herself. Reflection of client

feeling is said to be a form of empathy and is a way in which the counselor can show she is aware of the client's feelings.

Paraphrasing

Paraphrasing is a response to a client's experience, thought or behavior. Paraphrasing is rephrasing the client's statements in a way that communicates to the client an understanding of what has been said. The paraphrase is typically a short summary of the client's statements. Paraphrasing can be used to maintain the flow of communication between counselor and client.

Clarifying

The intent of a clarifying response is for the client to explore feelings and experiences. A clarifying response may encourage a client to move from vague statements to more concrete and relevant reflections. Using a clarifying response should encourage the client to share more about what he or she is telling the counselor about.

Questioning

Asking questions is an easy strategy often employed by novice counselors. Posing questions should have a therapeutic intent, to acknowledge, explore or challenge the client, not simply to gather more information. Asking questions can challenge clients to evaluate what thoughts, feelings or behaviors are preventing them from reaching goals or "getting what they want (p.26)."

Scale for Global Ratings and Responding

Level	Key Word	Results	Helper Actions Characterized by	Helper's Goals
1.0	Harmful	Not helpful	Criticism or inaccuracy	Inappropriate
2.0	Ineffective	Not helpful	Unsuitable advice	Inappropriate, tries to be and appear important to the helpee
3.0	Facilitative	Helpful	Relationship Building	To earn the right to help
4.0	Additive	Helpful	Problem-solving	To help

Descriptions of Helper Responses and Corresponding Levels

Level 1.0	Level 2.0	Level 3.0	Level 4.0
Harmful: Not helpful	**Ineffective: Not helpful**	**Facilitative: Helpful**	**Additive: Helpful**
Ignores what the helpee is saying	Communicates a partial awareness of the helpee's surface feelings	Reflects the accurately and completely the helpee's surface feelings,	Demonstrates willingness to help and accurately perceives and responds to the helpee's underlying feelings (empathy).
Ridicules the helpee's feelings	Gives premature or superficial advice	Communicates acceptance of the helpee as a person of worth, and	Appropriately uses one or more of the problem-solving dimensions to:
Seeks to impose beliefs and values on helpee	Responds in a casual, mechanical, or questioning way	Clearly communicates caring	Concreteness
Dominates the conversation	Reflects content by ignores the feelings of the helpee		Genuineness
Challenges the accuracy of perception			Self-disclosure
Uses problem solving dimensions in a way that damages the relationship			Expertise
			Confrontation
			Immediacy

From: Human Relations Development: A manual for educators, by G. Gazda, F. Balzer, W. Childers, A. Nealy, R. Phelps, R. Walters, 2005, Boston: Allyn & Bacon.

Procedures for Evaluating Responses

For the following portion of the training, audio recordings of former SERP 594 students will be utilized to aid the training participants identifying and rating the five types of responses. The training will be conducted in a group setting and the recordings will be played for the group

Identifying Responses

As each response of a 10 minute recording is given, trainees will write down which type of response they believe has been made. Once the final response has been heard and recorded, training participants will be asked to share their answers with the group. Should different responses be provided, consensus will be reached through repeated listening and discussion. If consensus cannot be reach the principle researcher will offer the final decision.

Rating Responses

Once trainees are comfortable with identify responses the same 10 minute recording will be played again and the responses will be rated using the SGRR and the descriptions of the communication levels. Once the final response has been heard and recorded, trainees will be asked to share with the group their answers. It is anticipated that scores will be different between trainees; however, scores should fall within .5 of one another. For those responses where responses are farther apart than .5, consensus will be reached through repeated listening and discussion. If consensus cannot be reach the principle researcher will offer the final decision.

Calculating Scores

The scores, for each verbal response of the 10-minute exercise, provided by the trainees must be added up and divided by the total number of responses. For example,

Trainee 1:   1; 1.5; 2; 2; 1.5; 3; 3 = 14/7 = 2.

Trainee 2:   1.5; 2; 2.5; 2; 1.5; 2.5; 3 = 15/7 = 2.5

A final score for the student's performance is calculated by adding both trainees' scores together and dividing by the number of trainees.

$$2 + 2.5 = 4.5/2 = 2.25$$

So for this student's performance a final score of 2.25 is given.

Clinical Skill Evaluation
Global Ratings and Responding

Response categories: open, clarifying, questioning, paraphrasing, empathizing and closing					
Response Type					Final Score
1.	1.0	2.0	3.0	4.0	
2.	1.0	2.0	3.0	4.0	
3.	1.0	2.0	3.0	4.0	
4.	1.0	2.0	3.0	4.0	
5.	1.0	2.0	3.0	4.0	
6.	1.0	2.0	3.0	4.0	
7.	1.0	2.0	3.0	4.0	
8.	1.0	2.0	3.0	4.0	
9.	1.0	2.0	3.0	4.0	
10.	1.0	2.0	3.0	4.0	

1.0 Harmful

2.0 Ineffective

3.0 Facilitative

4.0 Additive

REFERENCES

Abrami, P. C., & Bernard, R. M. (2006). Research on distance education: In defense of field experiments. *Distance Education, 27*(1), 5-26.

Amick, S., & Wesley, M. E. (1999). Educating rehabilitation practitioners: Obstacles and opportunities. *Rehabilitation Education, 13*(1), 25-36.

Armstrong, A. J. (2003). Comprehensive system of personnel development and the online adult learner. *Rehabilitation Education, 17*(3), 171-181.

Bernard, R. M., Abrami, P. C., Yiping, L., & Borokhovski, E. (2004). A methodological morass?: How we can improve quantitative research in distance education. D*istance Education, 25*(2), 175-198.

Bradley, C., & Fiorini, J. (1999). Evaluation of counseling practicum: National study of programs accredited by CACREP. *Counselor Education and Supervision, 39*(2), 110-120.

Burns, R. B. (2000). *Introduction to research methods*. (4th Ed.). London: SAGE.

Carkhuff, R. R. (1969). *Helping and human relations: A primer for lay and professional helpers.* New York: Holt, Rinehart, & Winston.

Carkhuff, R. R., & Berenson, B. G. (1967). *Beyond counseling and therapy.* New York: Holt, Rinehart, & Winston.

Carney, J. S., & Cobia, D. C. (1996).The use of portfolios in the clinical and comprehensive evaluation of counselors-in-training. *Counselor Education and Supervision, 36*(2), 122-133.

Chan, F., Rosen, A. J., Wong, D. W., & Kaplan, S. (1993). Evaluating rehabilitation

caseload management skills through computer simulations. *Journal of Counseling*

and Development, June, 493-498.

Clark, R. E. (1983). Reconsidering research on learning from media. *Review of*

Educational Research, 52(4), 445-459.

Clark, R. E. (1994). Media will never influence learning. *Educational Technology,*

Research and Development, 42(2), 21-29.

Council on Rehabilitation Education. Retrieved 12/4/05 from www.core-rehab.org.

Cresswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five*

traditions. Thousand Oaks, CA: Sage.

Crimando, W., Flowers, C. R., & Riggar, T. F. (2004). Theory-based e-learning: Using

theory to enhance the success and retention of students in distance learning

programs. *Rehabilitation Education, 18*(3), 185-195.

Davis, A., & Yazak, D. (1995). Implementation and accreditation issues in the

development of distance learning programs. *Rehabilitation Education,* 9(4), 293-

307.

Degiorgio, L., & Kampfe, C. M. (2008). *Utilization of technology in rehabilitation*

counseling education programs. Manuscript submitted for publication.

Eldredge, G. M., McNamara, S., Stensrud, R., Gilbride, D., Hendren, G., Siegfried, T., &

McFarlane, F. (1999). Distance education: A look at five programs. *Rehabilitation*

Education, 13(3), 231-248.

Eriksen, K., & McAuliffe, G. (2003). A measure of counselor competency. *Counselor*

Education & Supervision, 43, 120-133.

Fulford, C. P., & Zhang, C. (1993). Perceptions of interaction: The critical predictor of

distance education. *The American Journal of Distance Education, 7*(3), 8-21.

Gazda, G. M., Balzer, F. J., Childers, W. C., Nealy, A. U., Phelps, R. E., & Walters, R. P.

(2005). *Human relations development: A manual for educators.* (7th ed.).

Boston: Allyn & Bacon.

Gravetter, F. J., & Wallnau, L. B. (1985). *Statistics for the Behavioral Sciences.* (2nd Ed.).

St. Paul, MN: West Publishing.

Gilbride, D., Breithaupt, B., & Hoehle, R. (1996). The use of the Internet to support both

on and off campus learners in rehabilitation education. R*ehabilitation Education,*

10 (1), 47-62.

Gilbride, D., & Stensrud, R. (1999). Expanding our horizon: Using the internet in

rehabilitation education. *Rehabilitation Education, 13*(3), 219-229.

Haney, J. H., & Leibsohn, J. (1999). *Basic counseling responses: A multimedia learning*

system for the helping professions. Brooks/Cole: Pacific Grove, CA.

Hanna, M. A., & Smith, J. (1998). Using rubrics for documentation of clinical work

supervision. *Counselor Education and Supervision, 37*(4), 269-279.

Hansmann, S., Lightfoot, B., & Saladin, S. P. (2007). Student perceptions of the learning

environment and experiences of learning in an on-line rehabilitation counselor

education course. *Rehabilitation Counselors and Educators Journal, 1,* 70-82.

Harley, D. A., Jolivette, K., & McNall, R. (2004). Speeding up learning: Accelerated

distance learning in rehabilitation education. *Assistive Technology, 16*, 124-134.

Hayes, B. G., & Robinson, E. H. (2000). Assessing counselor education students' attitudes toward computers and multimedia instruction. *Journal of Humanistic Counseling, Education and Development,* 38, 132-141.

Hayes, B. G., Taub, G. E., Robinson, E. H., & Sivo, S. A. (2003). An empirical investigation of the efficacy of multimedia instruction in counseling skill development. *Counselor Education & Supervision, 42*, 177-188.

Hensley, L. G., Smith, S. L., & Thompson, R. W. (2003). Assessing competencies of counselors-in-training: Complexities in evaluating personal and professional development. *Counselor Education and Supervision, 42*, 219-230.

Heppner, P. P., Kivilighan, D. M., & Wambold, B.E. (1999). *Research design in counseling.* (2nd Ed.). Belmont, CA: Brooks/Cole Wadsworth.

Ivey. A. E. (1988) *Intentional interviewing and counseling: Facilitating client development.* (2nd ed.). Monterey, CA: Brooks/Cole.

Jones, K. D., & Karper, C. (2000). How to develop an online course in counseling techniques. *Journal of Technology in Counseling, 1*(2). Retrieved on 9/21/2004 from jtc.colstate.edu/vos1_2/online.htm

Kauppi, D. (1999). Distance education in rehabilitation counseling: From the process that brought you Y2K. *Rehabilitation Education, 13*(3), 207-218.

Kerl, S. B., Garcia, J. L., McCullough, S., & Maxwell, M. E. (2002). Systematic evaluation of professional performance: Legally supported procedure and process. *Counselor Education and Supervision, 41,* 321-332.

Leech, L. L., & Holcomb, J. M. (2004). Leveling the playing field: The development of a distance education program in rehabilitation counseling. *Assistive Technology, 16,* 135-143.

Lenth, R. V. (2001). Some practical guidelines for effective sample size determination. *The American Statistician, 55*(3), 187-193.

Lumadue, C. A., & Duffey, T. H. (1999). The role of graduate programs as gatekeepers: A model for evaluating student counselor competence. *Counselor Education and Supervision, 39*(2), 101-110.

Lundgren, D. J. (2000). Integrating on-line technology into counseling curricula: Emerging humanistic factors. *Journal of Humanistic Counseling, Education and Development, 38*(3), 142-151.

Machtmes, K., & Asher, J. W. (2000). A meta-analysis of the effectiveness of telecourses in distance education. T*he American Journal of Distance Education, 14*(1), 27-46.

Mansouri, M. (2003). *Perceptions of first-time participants in a state-agency sponsored online graduate program and their implications for online education planning, development and support.* (Doctoral Dissertation, Virginia Commonwealth University, 2003). *Dissertation Abstracts International, 64*(O1A*)*, 59.

McIsaac, M. S., & Gunawardena, C. N. (1996). Distance education. In D. H. Jonassen (Ed.). *Handbook of research for educational communications and technology*. (pp. 403-437). NY: Simon & Schuster.

Moore, S. F., Degiorgio, L., Kampfe, C. M., Porter, D.F., Sax, C., McAllan, L., Sales, A. P., & Smith, S. M. (2005). Rehabilitation student perceptions of web-based learning. *Rehabilitation Education,* 20(1), 31-42.

Nardi, P.M. (2003). *Doing Survey Research.* Boston: Pearson Education.

National Center on Education Statistics, Department of Education. *Distance Education at Postsecondary Institutions.* Retrieved 4/8/2004 from http://nces.ed.gov/

Nelson, M. L., & Neufeldt, S. A. (1998). The pedagogy of counseling: A critical examination. *Counselor Education and Supervision, 38* (2), 70-88.

Newman, J. L., & Scott, T. B. (1988). The construct problem in measuring counseling performance. *Counselor Education and Supervision, 28,* 71-79.

Northrup, P. T. (2002). Online learners' preferences for interaction. *The Quarterly Review of Distance Education, 3*(2), 219-226.

Nunnally, J. C. (1975). The study of change in evaluation research principles concerning measurement, experimental design and analysis. In E. L. Struening & M. Guttentag (Eds.), *Handbook of Evaluation Research.* (Vol. 1, 101-137). Beverly Hills: SAGE.

Petracci, H. E. (2000). Distance education: What do our students tell us? *Research on Social Work Practice, 10*(3), 362-375.

Quinn, A. C., Hohenshil, T., & Fortune, J. (2002). Utilization of technology in CACREP approved counselor education programs. *Journal of Technology in Counseling, (2)*2, Retrieved on September 13, 2004, from http://jtc.colstate.edu/vol2_2/quinn/quinn.htm

Ray, W. J. (2009). *Methods toward a science of behavior and experience* (9th ed.).Belmont, CA: Wadsworth Cenage Learning.

Rea, A., White, D., McHaney, R., & Sanchez, C. (2000). Pedagogical methodology in virtual courses. In A. Aggarwal (Ed.), *Web-based learning and teaching technologies: Opportunities and challenges* (pp. 135-154). Idea Group.

Rogers, C. R. (1950). *Client-centered therapy.* Boston: Houghton Mifflin.

Russel, K. V., Dudgeon, B. J., & Johnson, K. L. (2003). Accessibility and usability of communication and organizational systems in distance learning. R*ehabilitation Education, 17* (2), 81-94.

Schaefle, S., Smaby, M. H., Maddux, C. D., & Cates, J. (2005). Counseling skills attainment, retention, and transfer as measured by the skills counseling scale. *Counselor Education and Supervision, 44,* 280-293.

Schultz, J. C., & Finger, C. (2003). Distance-based clinical supervision: Suggestions for technology utilization. *Rehabilitation Education, 17*(2), 95-100.

Sexton, T. L. (2000). Reconstructing clinical training: In pursuit of evidence-based clinical training. *Counselor Education and Supervision, 39*(4), 218-228.

Sharf, R. S., Lucas, M. (1993). An assessment of a computerized simulation of counseling skills. *Counselor Education & Supervision, 32* (4), 254-264.

Siegfried, T. (2000). *Determining the Effectiveness of Distance Education Methods in Providing Instruction in Rehabilitation Counseling/Communication Skills in a Graduate Course of Study.* Unpublished doctoral dissertation, San Diego State University.

Smart, J. (1999). Issues in rehabilitation distance education. *Rehabilitation Education, 13*(3), 187-206.

Smithson, M. (2000). *Statistics with confidence.* London: SAGE.

Stebnicki, M. A., & Glover, N. M. (2001). E-supervision as a complimentary approach to

    traditional face-to-face clinical supervision in rehabilitation counseling: Problems

    and solutions. *Rehabilitation Education, 15*(3), 283-293.

Stevens, P., Dobrovolny, J., Kent, S., & Shulman, K. (2002). The development of an

    online graduate counseling course: Time, team and technology. *Journal of*

    Technology in Counseling, 3(1). Retrieved 2/17/2004, from http://

    jtc.colstate.edu/vol3_1/Stevens/Stevens.htm

Taylor, D., Riggar, T. F., Moore, C. L., & Turner, T. (1999). Long distance

    education/interactive television: Practical challenges. *Journal of Rehabilitation*

    Administration, 22(3), 165-177.

Thompson, B. (2002). "Statistical," "practical," and "clinical:" How many kinds of

    significance do counselors need to consider? *Journal of Counseling and*

    Development, 80, 64-71.

Urbani, S., Smith, M. R., Maddux, C. D., Smaby, M. H., Torres-Rivera, E., & Crews, J.

    (2002). Skills-based training and counseling self-efficacy. *Counselor Education*

    and Supervision, 42, 92-106.

Wantz, R. A., Tromski, D. M., Mortsolf, C. J., Yoxtheimer, G., Brill, S., & Cole, A.

    (2003). Incorporating distance learning into counselor education programs: A

    research study. In *Cybercounseling and Cyber learning: An encore.* ERIC

    Document.

Warn, M. (1999). Beyond the classroom: Instructional strategies and distance

    technologies that support lifelong learning. *Rehabilitation Education, 13* (1), 37-

    50.

Watson, J. C. (2003). Computer-based supervision: Implementing computer technology

    into the delivery of counseling supervision. *Journal of Technology in Counseling,*

    3 (1). Retrieved 2/17/2004, from

    http://jtc.colstate.edu/vol3_1/Watson/Watson.htm

Whiston, S. C. & Coker, J. K. (2000). Reconstructing clinical training: Implications from

    research. [Electronic version]. *Counselor Education and Supervision, 39*(4).

    Pages not included.

Zhao, Y., Lei, J., Yan, B., Lai, C., & Tan, H. (2005). What makes the difference?

    A practical analysis of research on the effectiveness of distance education.

    Teachers College Record, 107(8), 1836-1884.