THE EFFECTIVENESS OF A VIRTUAL LEARNING ENVIRONMENT ON

STUDENT LEARNING ABOUT CLINICAL SKILLS

by

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DEDICATION

       This dissertation is dedicated to my parents Kun Chee and Chan Ju Youn. They have always strived to teach me the importance of education at all levels.   This is also dedicated to my one true love Gabriela, who stood besides me through good times and bad all throughout this project.

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ABSTRACT

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The purpose of this study was to explore whether social work students could increase their clinical skills knowledge in a Clinical Skills Virtual Learning Environment (CS-VLE). The evaluation of an online exercise that was developed using experiential learning theory and other learning theories was seen as being the first step in challenging a noted theme within social work academia concerning the effectiveness of online environments in teaching clinical skills. This study assessed changes in knowledge, produced by exposure to a web-based clinical skills environment. Results showed significant changes in knowledge after exposure to the online environment as hypothesized. Results also showed that students that worked with all of the learning options presented in the clinical skills environment that were modeled after the four phases of experiential learning did not have a significant difference in increase of learning than those that did not. Increases in learning were not correlated with the number of options experienced. Also, students that worked with all of the learning

options presented in the clinical skills environment that were modeled after the four phases of experiential learning in the order set forth by David Kolb did not have a significant difference in increase of learning than those that did not. Finally it was found that attitude towards technology was not correlated with increase in knowledge of clinical skills. The results imply that online environments may be effective for the teaching of clinical skills content, however more research is needed as to determine what order and content is most effective. Additional studies should follow that are more rigorous in nature and test other types of clinical content. Also, more testing on attitude towards technology should be done to determine if there is a type of student that may not be appropriate for online education.

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CHAPTER I

INTRODUCTION TO THE STUDY

Increases in home and university internet access have opened the door for web-based education opportunities allowing students who have been unable to access university education to have the opportunity to do so. While some fields have embraced this new medium of education, there is a trend among Social Work academics to question the effectiveness of web-based environments to teach social work content; and in particular, clinical skills. This study details the theory based development of a Clinical Skills – Virtual Learning Environment and its use in a study to determine if social work students can increase their clinical skills knowledge in this type of learning environment.

Distance Education: Traditional Methods, Web-based Methods, and Virtual Learning Environments

Education currently is the second largest industry in the United States, topped only by health care (U.S. Bureau of Labor Statistics, 2005). This industry has been stimulated by distance education through a new emerging market of "non-traditional students"; or students that for reason of finances, transportation, child-care, employment, and/or other issues could not attain their educational goals in a traditional face-to-face (F2F) degree program.

For the purposes of this study, distance education will be defined as arrangements made between professors and students to allow for participation in coursework through a technological medium while being geographically separated for a majority of the time (Coe, 1999). This has been done by many colleges and universities using distribution of videocassettes of classroom lectures, the broadcast of classroom lectures to other locations via Interactive Television (ITV), and most recently, by using the internet. Distance Education has been playing a growing role in the academic field of social work for the past few decades.

For the purposes of this study, web-based education is defined as the use of the world wide web to create entire or partial course curriculum content available to students online. Web-based education is the newest trend of distance education. It is often supported by web-based course management and delivery programs such as Blackboard/Web-CT that allow instructors to display the course content of their class to students such as grades, readings and PowerPoint type presentations via a secure website. While Blackboard/WebCT are typical of the early Web-based course management oriented tools, other more customized Web-based distance education tools are under development. One type of tool that is of interest to this research are Virtual Learning Environments (VLE), which are briefly defined as web-based environments that help facilitate learning through course management and curriculum delivery methods. (See *The Clinical Skills Virtual Learning Environment* section in Chapter 2)

This chapter will review the distance/web-based education growth and usage trends over the past decade and how such growth influences or detracts from effective education to social work students. It will also summarize various themes found within

the literature concerning social work distance education. The chapter will end with a statement of the problem, research question and a logic model of the research that this study will address.

Chapter 2 will examine the theoretical and research basis for the research. Chapter 3 will outline the research methodology of the research. The final chapter will review the results of the research and its implications.

Growth of Computers and Web Access in Universities, Public Facilities, and Homes

A rapid growth of the use of telecommunications and computers in universities can be attributed to commitments by the federal government to assist schools in connecting to the Web. The Telecommunications Act of 1996 made telecommunications services and technologies available to universities, schools and libraries at reduced rates (Academy for Educational Development, 2000). This act has increased the number of public/student access computers in universities and libraries dramatically.

Home access to computers and the Web has also expanded over the last decade. In 2004, 51 percent or 54.5 million households own one or more computers and the vast majority (43.5 million) also had Web access (National Center of Education Statistics, 2004).

Based upon growth rates, the Employment Policy Foundation forecasts that within the next decade, web connected home computers will become a standard fixture in nearly all American households, regardless of income level (NCES, 2004).

The disadvantages created by not having access to the web have been recognized and acted upon. The gaps in computer and web access based on household income and geography, oftentimes known as the Digital Divide, are closing rapidly. Organizations

such as the America Connects Consortium (ACC), which was funded through the U.S. Department of Education's Office of Adult and Vocational Education, sponsor facilities which provided computer training and web access to disadvantaged populations who may have not been able to afford computer equipment and web access (U.S. Department of Education - Office of Adult and Vocational Education, 2006).

An increase in access to technology for both the educator and student can be seen in the growth of public locales which provide access to the web and the increase in household web access coupled with the increased availability of computer technology available in universities. This has created a huge potential "non-traditional students" market for college distance education via the web (Simpson, 2002). Another contributing factor is the need for lifelong learning given today's complex workplaces.

Growth of Distance Education at Universities

Distance education existed at universities well before the inception of the web. There were several distance education programs in place at universities that were non-web based. However, the growth of web access has resulted in the growth of web-based distance education courses and programs at national universities and colleges. This has let to a sharp rise in the number of total distance education courses available at colleges and universities.

According to the National Center for Educational Statistics (NCES), in the 2000–01 academic year, 56% of all postsecondary (public and private/2 and 4 year) institutions offered distance education courses. This was a significant increase from 34% percent from the 1997-98 school year (See Figure 1). This allowed for an increase of 1.4 million

students between 1997–98 and 2000–01 who were enrolled in a college distance education course (NCES, 2004).
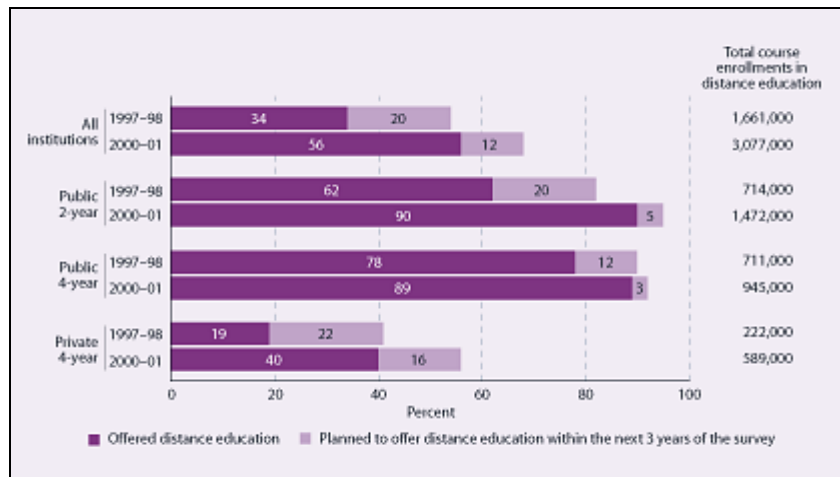
Figure 1: Enrollment in Distance Education

Educational programs designed to be completed entirely by distance education also saw an increase in the same three year span (See *Table 1*). The number of complete college program that could be completed entirely in a distance education format increased between 1997–98 and 2000–01 from 22 to 30% (NCES, 2004).

Table 1: Programs Designed to be Completed Totally through Distance Education

Type of institution	Offered any distance education courses	Institutions with distance education courses	Under-graduate degree programs	Graduate/ professional degree programs	Degree programs at either level	Under-graduate certificate programs	Graduate/ professional certificate program	Certificate programs at either level
1997–98								
All institutions	34	25	13	31	22	4	9	7
Public 2-year	62	13	11	†	11	4	†	4
Public 4-year	78	39	18	34	38	4	8	10
Private 4-year	19	32	14	26	29	3	11	11
2000–01								
All institutions	56	34	21	35	30	12	13	16
Public 2-year	90	25	20	†	20	15	†	15
Public 4-year	89	53	28	43	48	13	18	25
Private 4-year	40	36	19	28	33	10	10	14

† Not Applicable

(NCES, 2004)

Web-based Education in Schools of Social Work

Universities have more technological resources than they have had in the past and it is hard to find individuals who have no access to the web either from their home or some other public establishment such as a library or CTC. This seems to set the stage for the academic field of Social Work to be able to create distance education opportunities via the web (i.e. Web-based education) for those individuals living in disparate and rural areas of the United States and also the world as well as for those that have barriers such as children or employment issues. One advantage of Web-based Social Work programs is that they allow those that live in disparate and rural areas to continue to live in those

areas, and thus serve clients in the same disparate and rural areas in which they reside. Campus based education has often urbanized rural students who have never returned to rural areas. The concept of equal services for rural clients would seem in line with the mission of social work education.

Social Work from its inception as an academic field has utilized many different media for its learning environments. The most frequently used learning environment has been the traditional classroom model with students coming in to hear a professor lecture and present curriculum material. Distance education in social work has used many of the techniques mentioned earlier including early transport of faculty cohorts to disparate locations and the broadcast of classroom lectures to other locations via Interactive Television (ITV).

Although the use of the Web as a learning environment does not seem to be uncommon in social work, it is noted that Social Work as an academic field has been slower to adopt web-based education than other academic fields (Moore, 2005). This may be due to a historical resistance to the use of technology to teach social work among academic faculty and social workers (Cooper, 1989; Mandell, 1989).

Social Work faculty perceptions of web-based learning.

Moore (2005), in a study on faculty perceptions of web-based learning environments in social work, suggested that some residual sentiment of this resistance may exist in social work education today. From a snowball sampling method, 174 faculty were identified "as having expertise in Web-based instruction" (Moore, p.57, 2005) and invited to participate in the study. Moore's study has found that social work faculty believe "face-to-face instruction to be more effective than web-based instruction

in all [social work] curriculum areas" and web-based "teaching in [curriculum] areas such as practice [were] viewed as least effective" (p.53).

Despite, the benefits of web-based learning, there still seems to be resistance to these learning environments in social work; particularly in the area of clincial skills education (Moore, 2005). Two of the major reasons that social work faculty see web-based learning environments as being inferior to F2F learning environments (Moore, 2005) are the fears of being unable to teach practice skills online and the fears of being unable to socialize students to the profession in a web-based learning environment.

In response to these fears, there have been recent initiatives that take into consideration the demand for social work web-based educational services, but also take into consideration the concerns of these web-based environments matching the effectiveness of traditional F2F classroom environments. These initiatives have resulted in the creation of social work "hybrid" programs; programs which contain both a web-based and F2F component.

Themes in social work web-based education research.

It is interesting to note that, within the literature review, social work research on web-based education has been mostly focused on "non-clinical skill" education classes, meaning classes that have little or no clinical skills content (history, policy, etc…). These studies generally used surveys to measure a variety of variables involved with web-based education. Two of the most common variables that were measured and compared were performance metrics related to student knowledge (such as grades) and student satisfaction (Moore, 2005).

It is also interesting to note the lack of theoretical basis for this previous research on social work web-based education. Of all the web-based education courses reviewed in Moore's comprehensive literature review (2005), many had implications of various theoretical models. However, none were well grounded in theoretical models of learning as a basis for the study despite "One of the major functions of research [being] to test hypothesis derived from an existing theory" (Patten, 2005, p. 27).

A final theme found in the research deals with students' "attitude towards technology" when evaluating student performance in web-based learning environments. Although research on this association is small (Valenta, Therriault, Dieter & Mrtek, 2001), there are indicators that negative attitude towards technology can lead to more negative performance, more negative satisfaction, and be a predictor for dropout (Stocks & Freddolino, 1998; Peters, 1999; Schoech, 2000; Collins and Jerry, 2005). Therefore it is important to further examine the correlation between attitude towards technology and performance when developing web-based learning environments. These themes will be discussed in detail later on this study.

Experiential Learning in Social Work

There is a strong movement within higher education, and in particular social work higher education, that advocates for less didactic classroom methods such as lecture and readings and more experiential learning methods (Askeland, 2003; Duffy & Cunningham, 1997; Gibbons & Gray, 2002; Goldstein, 2001). However, in social work, an academic field that could arguably needs this type of learning more so than other fields due to the nature of the rapport-oriented and empathy-oriented curriculum content, experiential learning is lacking (Rossiter, 1993; Goldstein, 2001).

Statement of the Problem

Given the factors described above, four main topics can be identified:

Ways for social work education to take advantage of the increase and availability of technology resources in homes and universities that allow for web-based education.

1. A sentiment of doubt in social work academia to the effectiveness of teaching social work (in particular clinical skills) over the web.

2. A push for more theoretically based learning environments (in particular) experiential learning environments.

3. A need for further evaluation of the relationship between attitude towards technology and student performance in web-based learning environments.

These needs suggest more research should be conducted on experiential learning methods for learning clinical skills. These methods can then be developed and integrated into web-based learning environments The web-based learning environments can then be evaluated to determine their effectiveness in teaching clinical skills to social work students.

The logic model table below summarizes the rationale behind this research study. Each of the columns represent a specific topic related to the research study. Within each column, there is an IF statement representing what is known. Following the IF statement is a THEN statement indicating the next logical step that is needed and will be addressed through the research study. These columns relate to the topics identified above.

Table 2: Logic Model

Maximization of benefits of web-based programs	Need for research in social work web-based education	Experiential Leaning Theory and related theories to learn clinical skills	Effects of attitude toward technology on performance in web-based environments
IF web-based education allows students to take advantage of home-based technology and overcome barriers such as employment, distance, transportation, family issues, etc.. **THEN** testing of web-based learning environments is necessary to determine how to maximize the benefits of the web-based programs.	**IF** a controversy exists among social work academics over the ability of clinical skills content to be taught in web-based education formats **THEN**, research is needed to evaluate whether web-based environment can be an effective environment for learning clinical skills. **THEN** social work web-based education can progress much more rapidly and effectively	**IF** experiential learning theory techniques are hypothesized as an effective method of clinical skills instruction in social work F2F environments, and If similar experiential learning techniques used in F2F social work education could be developed in a VLE **THEN** the VLE should be an effective learning environment to learn clinical skills.	**IF** further research on the effects of attitude toward technology on performance in web-based environments is needed **THEN** attitude towards technology should be measured and evaluated when researching performance in web-based environments such as a VLE

The Clinical Skills Virtual Learning Environment

As stated earlier, distance education has come a long way in the past few decades. The newest method of distance education is web-based learning or coursework done using the World Wide Web. Programs such as Web CT/Blackboard have allowed students to access readings and assignments sent to them by their instructors over the web. Newer approaches, such as virtual learning environments, are appearing that contain the course management strengths of Web CT/Blackboard while enhancing the curriculum delivery features.

For the purposes of this research, a VLE (Virtual Learning Environment – Sometimes referred to as a Virtual Environment for Learning [VEL]) is a Web-based system that facilitates the management and delivery of educational content for instructors and learners (Wikpedia.com, 2006). The two overlapping functions of a VLE, course management and curriculum delivery, can be characterized by the following. Items followed by a * are features of the VLE that will be used in this study.

Course management functions

1. Lists information on and qualifies valid learners of the course, e.g., course advising, registration, learner progress in a program of study, and tracks instructor and learner payments.

2. Allows learners to access course content in a secure environment with a consistent and intuitive interface*.

3. Records who uses the VLE, when, how long, and what features are used, etc.*

4. Collects and manages access by qualified learners to online course materials, e.g., course web sites, online reserve materials, etc.

5. Grades quizzes, automatically posts grades, delivers grades to learners via email, etc.

6. Evaluates curriculum based on selected criteria, e.g., learning of objectives, analysis and control of costs, interaction quality, dropout rate, etc.

7. Provides help for learner's problems, e.g., technical assistance.

Curriculum delivery functions

1. Contains the tools for instructors to put course content into various delivery formats, for example, synchronous chat programs, asynchronous discussion forums and blogs, simulations, game shells*, multimedia learning exercise shells*, content delivery templates*.

2. Provides templates or shells for instructors to construct and deliver assessments such as multiple choice, true/false, and other types of quizzes.

3. Provides easy mechanisms to make available and/or deliver online course materials such as articles and books*.

4. Allows learner feedback during such as with comment boxes and voting systems.

A VLE is naturally suited to distance learning or learning where the instructor and learner are not in the same geographic space such as in a classroom, but can be located anywhere globally where there is web access. A VLE is also suited to asynchronous learning, where the instructor and learner do not interact in real time such as in face-to-face environments.

Although by this definition, VLEs do not have to be based on learning philosophies or theoretical models, the VLE detailed later in this study was designed based on experiential learning theories. This is in line with the concept of developing

web-based learning environments that are based on learning theories to optimize the online student learning experience. It should be noted that theoretically based web-based learning environments can be developed in programs such as WebCT/Blackboard by using some of the advanced functionalities of programs (i.e. video clips, chat room, bulletin boards, etc…). However, the web-based learning environment that is utilized in this research was developed to function independently of programs such as Web/CT Blackboard.

The purpose of this study is to explore the effectiveness of a web-based learning environment for learning clinical skills. The environment that will be used in this research was developed at the University of Texas at Arlington School of Social Work and was based primarily on experiential learning theory. For clarity in this research, this learning environment will be called a Clinical Skills Virtual Learning Environment (CS-VLE). The CS-VLE and the techniques used in the CS-VLE will be described later in this study.

Research Question

The main research question of this study is as follows:

Can social work students increase their clinical skills knowledge in a Clinical Skills Virtual Learning Environment (CS-VLE)?

The study will attempt to answer this research question. Related issues concerning (a) the completeness and order of the experiential learning process within the CS-VLE and (b) the effects of previous clinical skills education and/or experience will also be studied. A secondary research question of his study is: **Are students' attitudes towards technology positively correlated with students' increase of their clinical**

skills knowledge. The methods for answering these question and the related theoretical

frameworks are discussed later in this study.

CHAPTER II

LITERATURE REVIEW

This literature review supports this study for using experiential learning theories to construct an effective web-based learning environment for learning social work clinical skills. The literature review is divided into four sections. The first section of the literature review reviews studies of technology-supported social work education used in teaching clinical skills and identifies gaps in the literature. This section also identifies the theme in the literature of a resistance among social work academia to teaching clinical skills online.

The second section explores the concepts of experiential learning theory and additional associated theories that encompass an active experiential learning approach. It then reviews perspectives and examples of experiential learning in social work education found in the literature. A framework for using experiential learning theories for constructing a web-based learning environment is then presented.

The third section reviews the concept of clinical skills. A discussion of what the basic clinical skills are in social work and how they are defined is presented. It concludes with a discussion of approaches for evaluating the learning of clinical skills.

The fourth and final section details learners attitude toward technology. It presents a literature review of correlative studies between attitude and learning in web-based environments.

The chapter concludes with a synthesis of how the research reviewed pertains to the study. It summarizes the rationale in developing the learning environment. It then introduces the Clinical Skills - Virtual Learning Environment as the intervention to be used in the study.

Historical Methods of Teaching Clinical Skills using Web-based Learning

A literature review has identified several studies on VLE type learning of clinical skills (Satterwhite & Schoech, 1995; Peters, 1999; Seabury, 2003; Cauble and Thurston, 2000; Siebert, Siebert, & Spaulding-Givens, 2006; Jerry and Collins, 2005). A research project that centered on teaching clinical skills in a text-based web-based environment was Peters (1999) examination of a web based treatment planning social work course. This study compared the web course to the same course presented in a face-to-face environment. A pre-test/post-test method of measuring the participants' increase in treatment planning knowledge was used in the study. The pre and post test allowed a student to read case narrative and to evaluate services to the client. The research indicated that while both groups improved their skills at treatment planning, the face-to-face environment students had significantly higher levels of improvement than the students using the web-based environment. A low N (N=7) was noted as a major drawback to the conclusions of the study. Dropout, a problem noted in many web-based courses, was a problem in the Peters study that also contributed to the low N.

Satterwhite & Schoech (1995) studied a multimedia training case simulator for Child Protective Service (CPS) workers that combined animation and text to illustrate referrals, home visits, casework activity, and forms and feedback (p.86). While the simulation was not web based, it is relevant here since it contained many features of a VLE, e.g., content delivery, interactivity, and extensive feedback on trainee performance. The study (n=14) found very favorable results in survey results of the ability of multimedia case simulations to teach trainees and overall satisfaction with the simulation experience. Favorable results were also found, to a lesser extent, of the ability of

multimedia case simulations to teach non-trainees and overall satisfaction with the simulation experience. Categories of survey responses were: Relevance of the computer based training to your work, Impact of computer based training on your future judgment, Learning as a result of completing the computer based training, Evaluation of the computer programming, Evaluation of the design of the training, Suggestions for improving the design of the case study, and Your perception of technology delivered instruction.

Cauble and Thurston (2000) conducted research on an interactive multimedia child welfare training curriculum for use with BSW students at Kansas State University. The interactive multimedia environment was defined as "context presented by text, graphics, and illustration [in] a nonlinear format that provides feedback to the student and [uses] computer programs that can be sent or downloaded to sites on or off campus" (p. 429). The interactive multimedia environment was presented to social work students in their final two semesters before they started their field placements.

Students were presented with the interactive multimedia environment and then evaluated in terms of gains in knowledge and student confidence (self-efficacy) to perform the competencies demonstrated. Gain in knowledge was measured using a standardized true-false pre and post-test assessment used to measure knowledge of child welfare (Child Welfare Knowledge Assessment [CWKA]). Self efficacy was measured using an agency specific self-rating of efficacy. Through the pre and post tests (n=17) it was determined that student knowledge was significantly increased.

Students were also given a survey to assess "students' attitudes toward technology and multimedia, instructional efficacy, and the feasibility

of IM for social work education" (p. 431). From the survey results, students felt they had developed a sense of competence in the subject area, and that they were comfortable in the use of the technology.

Seabury and Maple (1993) conducted research (N=450) on students' perceptions of an Interactive Video Disk (IVD) based clinical skills development program. The program showed a series of video clips to the students that depicted client-social worker interactions in a counseling environment. The student would watch the clip stored on the IVD using a computer and was then asked a question on how the social worker should proceed in the situation portrayed on the video disc. Based on the students' response, another video clip would be played that showed what happened to the characters based on the decision. The software program allowed the student to "choose their own adventure" or path through the curriculum. The responses chosen by the student throughout the IVD experience were recorded by the computer and sent to the instructor.

Two different IVD programs were used in the research project; One that was focused on Crisis Counseling and the other focused on Group Treatment. Likert-scale surveys (N=51/36) were given to the students to assess their attitudes toward the new technologies and if they felt that the new technologies were effective in teaching them clinical skills. Both groups indicated overwhelmingly positive results.

The Seabury and Maple IVD videos used for clinical skills training at the University of Michigan were transferred to a web-based system, allowing students to run through the video exercises from any place with web connectivity (Seabury, 2003). Students in the two classes (n=44) that used the web based videos were quizzed over the clinical skills presented in the video exercises. Comparisons of the grades between the

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students in the class that used the web videos (experimental group) and grades of the students in the classes that took the class in an F2F setting (comparison group) indicated that both groups had significant learning of the concepts presented. There was no significant differences indicated between the experimental and comparison groups.

Florida State University offers a web-based Advanced Standing Masters of Social Work (MSW) program. Within this program's curriculum, a Crisis Intervention and Brief Treatment course is taught (Siebert, Siebert, & Spaulding-Givens, 2006; Siebert, & Spaulding-Givens, 2006). The course taught practice skills online through a variety of methods. One method was to make video clips of full clinical sessions conducted by leading therapists available to the students online. To replace the common practice of live role plays in which students practice new skills, students would use the provided 'chat' mechanism to conduct the role play in real time using the telephone or by text messages. Also, students were required to make appointments with local field advisors to conduct assigned role plays face-to-face. Another technique was to allow the students to utilize the Seabury and Maple IVD videos online from the University of Michigan website.

The method used at FSU for evaluating knowledge of clinical skills was to give the students a client session role play video to view and then have them write a clinical case summary about it. The case summaries were to contain the "client description, assessment, case conceptualization, potential complications and co-occurring issues, evidence-based treatment recommendations, and an evaluation plan" (Siebert & Spaulding-Givens, 2006, p. 86). In order to compare web-based clinical skills training to F2F clinical skills training, the completed case summaries of the web-based students

(N=15) were then graded and compared to case summaries of a similar assignment given in an F2F course. The mean scores were not found to be significantly different (p=.47).

Perceptions of using the web to teach social work clinical skills.

Seabury and Maple (1993) noted that their integration of technological methods to teach clinical skills was in spite of a strong sentiment of doubt among their academic colleagues. They also found that this sentiment was present within social workers working in the field (p. 430). There have been other studies that have had content related to faculty concerns of distance education. Siegel, Jennings, Conklin, Napoletano, & Shelly (1998) conducted a survey study (n=41) concerning perceptions of faculty towards distance education and specifically towards technology mediated distance education techniques such as web-based learning. Although the results found a significant and growing use of distance education programs, it was for only for more low interaction oriented courses such as research, policy, and history and not for classes that involved the teaching of clinical skills. This was attributed to a fear of lost quality in teaching.

> If one does not teach 'face-to-face,' as is the norm in our profession, how much is
> lost in the perceived quality of the classroom interaction, in the potential
> socialization of students, and in the relationship with the instructor as a mentor
> and role model? …From a philosophical point of view, some schools of social
> work may be ill prepared to make a paradigm shift to modify traditional
> classroom and field teaching with multimedia or technologically assisted
> education… it may face a slower acceptance time (p. 76-77).

A more recent study, mentioned earlier, was conducted by Moore (2003). The study surveyed social work faculty with web-based teaching experience concerning

perceptions of the effectiveness of web-based education. The survey analysis (n=56) based on a likert scale format from "least effective" to "most effective" found that social work faculty perceived web-based education to be less effective than F2F education (p. 62). The analysis also found that practice courses were perceived to be the "least effectively taught using Web-based instruction" (p.63).

A project by Collins and Jerry (2005) utilized web-based video clips of counseling situations to educate students at Campus Alberta Applied Psychology Counseling Initiative (Master's level counseling education). The project was utilized to "meet the demands of [West Canadian] students who are already in the workforce or are coping to meet with multiple demands on their time and resources" (p.100). A unique aspect of this initiative was that it took into consideration the demand for such an educational service, but also took into consideration the concerns of web-based environments matching the effectiveness of traditional F2F classroom environments mentioned previously in this study.

> Current critics of adult distance and web-based learning express a frustration that much of what is offered on-line has been cobbled together from face-to-face courses with little reference to sound educational theory and pedagogical practice... Since this is an applied practice professional program, emphasis is placed in all courses on the application of knowledge to practice (Jerry & Collins, 2005, p. 189).

Because of this, the project was designed in a mixed modal format for counseling skill courses; having some parts taught in a web-based environment and other parts in a time compressed F2F classroom environment such as weekend workshops.

Current Theory and Methods of Learning

As mentioned previously, much of the research conducted on social work web-based education did not include theoretical models that supported the web-based curriculum evaluated in the research. Since F2F learning environments based in experiential learning theory are a preferred environment to teach clinical skills (Gibbons & Grey, 2002; Goldstein, 2001; Horwath & Thurlow, 2004; Rocha, 2000; Quinn, 1999), an ideal method of developing web-based clinical skills learning environments is to base them on experiential learning theory. In order to do this, a review of experiential learning theory and other relevant theories and how they are associated with learning must first be performed.

Early concepts of learning existed in the time of Socrates as he dictated that the teacher's role was that of a mentor and the student's role were that of question askers (Gibbons & Gray, 2002). Friere (1970) used a now infamous "banking metaphor" in order to describe how the teacher would deposit information in the minds of students to be stored and withdrawn at later times.

Learning environments which use the concepts of having the teacher be the expert and using lectures or reading (common course methods) to deposit knowledge in the minds of the students are known as Instructivist learning environments. Although learning can take place in such environments, the learning in this environment is considered rote in nature (Herie, 2005). Learning in Instructivist environments is often measured through testing of identification of concepts and definitions. Although this model has advantages of having student responsibilities clearly defined and having ease of grading for the instructor, it is criticized as having a lack of required critical

engagement of the student and rote learning being emphasized over deeper learning (Herie, 2005).

Experiential Learning

       The origins of theories of experience-based education are attributed to John Dewey (1938). It is important to note from a social work perspective that Dewey was on the first board of trustees at Jane Addams' Hull House and much has been speculated on how this influenced his theories of learning (Gibbons and Gray, 2002). Dewey was the first educator to suggest a change to the question of "how do students learn?" as opposed to other learning techniques (such as instructivist techniques) which focus on "what to teach?" (Gibbons & Gray, 2002).

       Because learning is related to previous knowledge, for learning to be effective, there must be a cyclic process of reflection, innovation, experimentation and conclusion (Dewey, 1938). Implications of this are that it is important to take into consideration the students' previous level of knowledge to allow the student to take in new knowledge, and actually experience the application of the knowledge. This is known as learning by doing. These implications will be further discussed later in this study as the concept of building a learning environment for learning clinical skills is discussed.

       Experiential learning vs. traditional classroom learning.

       Advancing on these conceptualizations of learning, there are two types of learning according to Rogers & Frieberg (1994); cognitive learning and experiential learning. Cognitive learning consists of rote knowledge such as learning the multiplication tables, the order of the alphabet, atomic weights of elements, etc… Much

of traditional classroom learning or learning that is derived from text or lecture (Instructivist/Rote) falls under the category of cognitive learning.

Experiential learning refers to knowledge which is applied; or learning by doing. Examples include learning how to change an oil filter, perform a medical procedure, or operate a machine. Another example, which is key to this study, is learning how to counsel a client in a clinical setting. Although cognitive learning has its place in the process of learning, experiential learning is considered much more significant (Rogers & Frieberg, 1994) in that it directly addresses the wants and the needs of the learner.

The Kolb model of experiential learning and its relation to social work education.

Kolb furthered the concept of experiential learning by creating a model derived from three main sources. The first was Dewey's ideas on experience-based education, the second was the research of group learning done by Lewin, and the third source were the theories of constructivist/cognitive learning (learner as active creator of knowledge) of Piaget (Gibbons and Gray, 2002). Kolb (1984) stated that learning is a process where knowledge is created through the transformation of experiences. He reiterated Rogers & Frieberg concept that there are two structural dimensions in this learning process, one cognitive (indirect comprehension of symbolic representations of experience) and another experiential (application of immediate concrete experience). Both dimensions are considered key components of overall learning. Kolb then presented a model of experiential learning that explains how learners can shift between the two structural dimensions.

There are four cycle stages in the Kolb model that represent the learners' need to develop four different kinds of abilities. These stages are *concrete experience* abilities

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(which entails the learner involving themselves in new experiences), *reflective observation* abilities (which entails the learner observing experiences from many perspectives), *abstract conceptualization* abilities (which entails the learner integrating observations into logically sound theories), and *active experimentation* (which entails the learner using knowledge to solve problems).
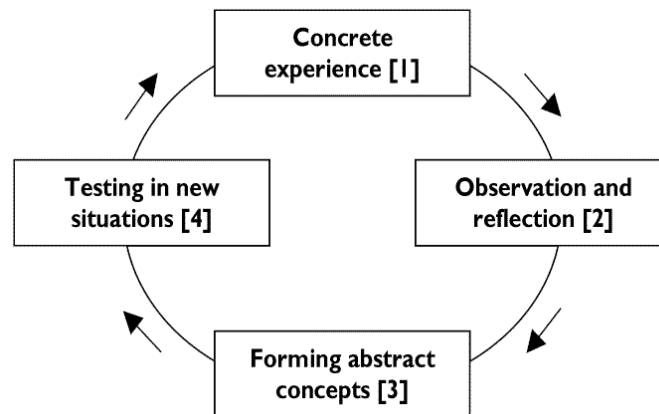
Figure 2: Kolb's cycle

It is important to note that it is stated by Kolb (1984) that theses phases represent key elements of experiential learning. There has been other literature that suggests that complete student participation in the experiential learning process (participation in all phases) is necessary for student learning to be facilitated (Rogers & Freiberg, 1994). It is also important to note that although Kolb (1984) originally presented the phases in a specific order, there is question as to whether the four phase cycle of experiential learning is actually a cycle (Smith, 2001). This means it is not necessary that all of the phases be completed in a particular sequence (Smith, 2001; Goldstein, 2001). These themes will be further discussed within the sub-hypotheses of the Methodology chapter.

     Experiential learning in Social Work education.

There has been extensive literature on experiential learning as a preferred approach in social work education and particularly in clinical skills education. (Gibbons & Grey, 2002; Goldstein, 2001; Horwath & Thurlow, 2004; Rocha, 2000; Quinn, 1999). Goldstein (2001) stated that there are three major educational techniques that are currently the norm for teaching in social work education; programmed instruction, lectures and discussion, and problem-centered learning. He defined programmed instruction as a technique which "transmits systematic information and allows for lower-level skill learning" (p.77). He provides an example as being a statistics class and states that it is a technique that is the least concerned with student-centered learning. Lecture and discussion is "designed to transfer large amounts of information in some depth. Students may gain a certain knowledge base but usually without the direct opportunities to apply this knowledge to actual circumstances" (p. 77). Goldstein defined problem-centered learning as "occur[ing] in classrooms or seminars where the students heuristically apply concepts and theories to real-world situations" (p. 77). Goldstein went on to state that case studies are the cornerstone of problem-centered learning in social work practice and research courses. Goldstein reiterated Kolb's conclusion that it is possible to utilize these modes in combination with each other in order to allow the learner to shift from cognitive learning to experiential learning. He further illustrates this point using Kolb's (1984) model of experiential learning.

Examples of Kolb's experiential learning cycle in Social Work clinical skills education.

There are several researchers that reiterate the point made earlier in this study that common "in-class" techniques which are didactic and Instructivist in nature, such as

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lectures and readings, have their place and can play a key role in an experiential

education learning environment. Many of these activities fall into the cognitive

dimension of learning described by Kolb (1984). To complete the experiential education

learning environment, and in particular experiential education learning environments

used for social work, is optimally achieved through actively doing (Askeland, 2003;

Gibbons & Gray, 2000; Goldstein, 2001). Therefore activities for this experiential

dimension need to be provided and developed along with cognitive dimension activities

for experiential learning to take place.

Classroom environment activities mentioned in the literature that allow for

"actively doing" include the use of role-plays. Role play activities are noted as being a

key component in experiential learning in social work. (Askeland, 2003; Gibbons &

Gray, 2000; Goldstein, 2001). The use of role plays are coupled with other learning

activities in order to allow for the shift from cognitive learning to experiential learning.

Goldstein specifically mentions the use of role plays in being useful experiential

learning teaching methods in social work education. He provides examples of how a

social work learning environment using role plays can be categorized into each of the

stages of Kolb's model.

Concrete Experience Phase - Having students observe role plays is an example of

concrete experience phase exercise that illuminates concepts and principles (p. 78).

Reflective Observation Phase – Giving students an opportunity to classify and

reconceptualize an experience for better internal comprehension is an example of the

reflective observation phase. These opportunities allow the student to acknowledge the

new knowledge and "deal with it" (p.79). These opportunities may come in the form of readings and questions for group discussion.

Abstract Conceptualization Phase- This phase is described by Goldstein as a more internal process in which the learner "own[s] knowledge". Knowledge is "given their special form by the individual's cognitive style, talents or intelligence, life experiences, and world view" (p.79-80). It is the process in which the new knowledge is mixed in with the learners existing knowledge.

Active Experimentation Phase (testing in new situations) - Participating in a role play is an active experimentation phase exercise in which the "learner is required to synthesize and apply what has been learned" (p. 80).

A more advanced use of role plays in an experiential learning environment was performed by Askeland (2003). Askeland utilized a "reality-play" approach as a teaching method in an Introduction to Social Work course taken before the students' field placement course. A "reality play" is a type of role play in which students, after being given a specific content theme, authentically play themselves as being social workers, clients, or observers.

Concrete Experience Phase - Students participated in the reality play after being presented with subject matter concerning values and theories. The exercise was intended to illuminate the content of the values and theories presented

Reflective Observation Phase – Students were then invited to share their thoughts, feelings, and attitudes in order to give them an opportunity to classify and reconceptualize the experience.

Abstract Conceptualization Phase- Students were then asked to relate the experience to theory. This experience was not meant to be shared in discussion but rather be "a reflection that leads to comprehension" (p. 359).

Active Experimentation Phase (testing in new situations) – The final phase was entered when students were asked to focus on areas of professional development that they derived from their participation in the three other phases. This focus would then be implemented as the exercise continued in the next class session and the cycle repeated itself.

Gibbons and Gray (2002) used the Newcastle model of experiential learning in their research. The Newcastle model is derived from the four stage Kolb cycle with a strong focus on social work themes and values. According to the Newcastle model, experiential learning is composed of three phases: preparation, engagement, and processing. In the preparatory phase, students examine what the task at hand is and what is required of them; in the experience phase, students process concepts from their learning environment though presentations, including role plays; and in the processing phase, students examine and consolidate their experiences through discussions, readings and research of the problem. Gibbons and Gray stated that role plays are consistent with experiential learning models because role plays are grounded in person-in-situation tasks. Professors act as facilitators in this learning process and work with the students as guides, co-learners and advisors.

Duplicating Role Play Exercises in a Virtual Environment

In order to create a web-based learning environment in which experiential learning can take place, it is important to examine the activities used in F2F experiential

learning environments. The traits of those activities within F2F experiential learning

environments that make the learning activities "experiential" in nature should be

examined and identified. Then it is assumed if similar web-based activities that possess

the same traits can be developed, then a web-based experiential learning environment can

be created.

The first step of this process is to examine the examples of learning activities

listed under each of the stages of the Kolb model for experiential learning from the

literature on social work education (Askeland, 2003; Gibbons & Gray, 2000; Goldstein,

2001).

Concrete Experience Phase – Concrete experience activities were done/described in two

different ways by Goldstein (2001) and Askeland (2003). However both authors stated

the point of their respective exercises were to illuminates concepts and principles

presented. Goldstein suggested that having students observe role plays would be an

example of a concrete experience phase exercise that illuminated concepts and principles

(p. 78). Askeland had students participate in reality play exercises after being presented

with subject matter concerning values and theories.

It is difficult to conceptualize participation in a role play in an asynchronous web-

based environment (asynchronous means that there is no 'real-time' interaction with

other web-based learners) unless responses are somewhat pre-programmed as they were

in the Seabury (2003) study. However an observation of a role-play is a relatively

straightforward activity that can be accomplished by allowing students to watch a

multimedia video of a clinical role play.

Reflective Observation Phase – Reflective observation activities were described by Goldstein (2001) and Askeland (2003) in a similar manner. Both stated that the points of the exercise were to give students an opportunity to classify and reconceptualize their experiences. Goldstein stated that this could be done in the form of readings and questions for group discussion. Askeland had this done by inviting students to share their thoughts, feelings, and attitudes in order to give them an opportunity to classify and reconceptualize their experiences.

To convert these experiences into a web-based environment. Readings can easily be converted to web-based accessible text. Feedback and discussion can be done either asynchronously using e-mail or bulletin boards or synchronously (in real time) using text messages or chat functions.

Abstract Conceptualization Phase- This phase was described by both authors as more of an internal process (Goldstein, 2001; Askeland, 2003) which can be prompted from either a F2F or web-based environment. This could be done by setting aside time in both environments for the learner to reflect on new knowledge after being prompted either verbally (as an instructor in a F2F environment) or visually (as through text in a web-based environment). Goldstein described it as the internal process where the learner owns the knowledge. Askeland described it as an experience not meant to be shared in discussion but rather "a reflection that leads to comprehension" (p. 359).

Active Experimentation Phase (testing in new situations) – Active experimentation activities were also similarly described by Goldstein (2001) and Askeland (2003). Both stated that the points of the exercise were to allow the learner to synthesize and apply what has been learned. This could be done by participating in role plays (Goldstein,

2001) and focusing on new knowledge derived from participation in the three other phases (Askeland, 2003).

As stated before in the *Concrete Experience Phase*, it is difficult to conceptualize participation in a role play in an asynchronous web-based environment. A possible web-based experience that would act as an equivalent active experimentation experience is if the student were allowed to utilize knowledge that was focused on previously and be able to apply it. This could be done by teaching the students about various clinical skills and then giving the students an exercise in which they were asked to identify those same clinical skills being utilized in a role play.

It is important to note for the purposes of the study that not having students actively participate in role plays (as indicated in the Concrete Experience and Active Experimentation phases), focuses the student's learning of clinical skills. The focus of these types of exercises centers more around the definition and recognition of clinical skills rather that the knowledge of how to apply them. However, the ability to define and recognize clinical skills is a key component in learning clinical skills application (Ivey & Authier, 1978). This point will be discussed further in the *Clinical Skills* section.

The figure below illustrates the activities suggested and performed in social work experiential learning environments found in the literature review. It shows how these activities are categorized by the phases in the Kolb cycle and how equivalent web-based activities could be categorized in the Kolb cycle.
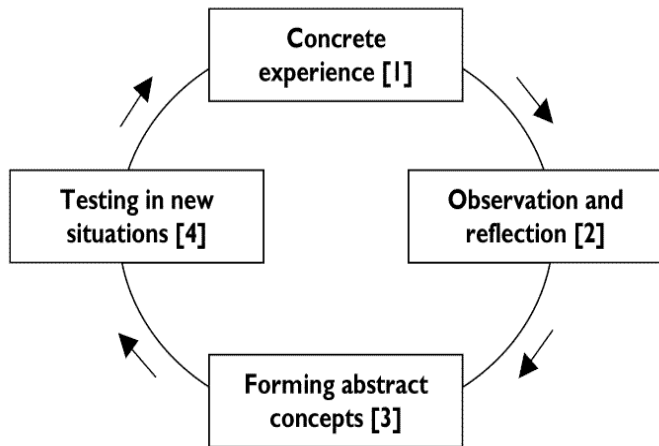
Experiential Learning Activities in Social Work F2F Environments   **Possible Web-based Equivalent Activities**
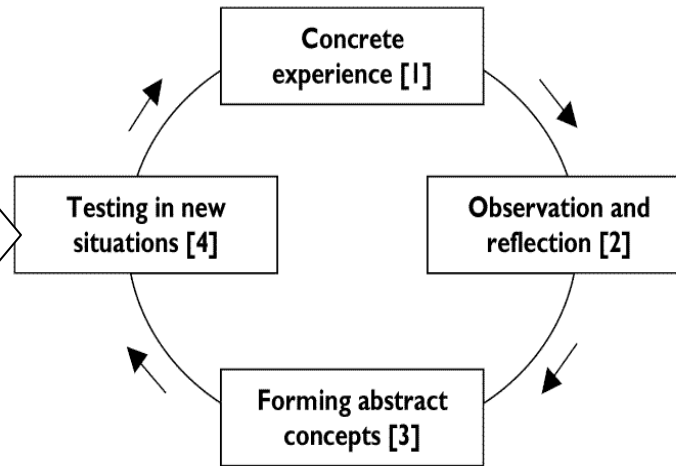
Experiential Learning Activities in Social Work F2F Environments

1   Concrete Experience - Observing clinical role plays / Observing clinical situations in real settings

2   Reflective Observation - Feedback/discussion/professor-student dialogue/ reading and research opportunities

3   Abstract Conceptualization - Internally self reflecting after being prompted by the instructor

4   Active Experimentation (Testing in new situations) - Participating in clinical role plays

Possible Web-based Equivalent Activities

1   Concrete Experience - Viewing concepts in clinical role plays online

2   Reflective Observation – Allowing feedback/ discussion/professor-student dialogue/ reading and research opportunities through web-based text options and web-based communication opportunities

3   Abstract Conceptualization - Internally self reflecting after being prompted online

4   Active Experimentation (Testing in new situations) - Applying knowledge to identify skills in an web-based clinical role play

Figure 3: Experiential Learning in F2F and Web-based Environments

Additional Experiential Learning Theories

It is noted that although the suggested web-based activities are similar to the experiential learning activities described in the literature review, it is not quite an "apples to apples" comparison. Because of this, it is necessary to utilize other theories that encompass an active experiential learning approach to strengthen the theoretical framework of the research. The additional theories are applied to the web-based actions.

Cognitive flexibility theory.

Cognitive Flexibility theory focuses on how learning can occur in complex and ill-structured domains (Spiro & Jehng, 1990). Cognitive Flexibility theory discourages oversimplifying and categorizing knowledge, but rather encourages multiple representations of content and encouragement of construction of knowledge from the multiple representations. It is related to experiential learning theories as both theories have roots from Piaget's cognitive and constructivist theories (Spiro & Jehng, 1990). Cognitive Flexibility theory is noted as being particularly significant in web-based environments since web-based environments can quickly provide multiple perspectives and presentations on a specific topic (Jonassen, Ambruso & Olesen, 1992).

From the early days of text-based internet, it was theorized that the ability of the internet to present multiple perspectives on subject matter through text based examples (Jonassen, 1993) would be beneficial to learners. Jacobsen and Spiro (1995) presented research on computer text learning environments which focused on the learning implications and impact of technology. The research indicated that students that were encouraged to assemble knowledge from multiple interrelated text-based perspectives of a subject (N=17)

had significantly more knowledge transfer than those in the comparison group who were only presented with simple concept descriptions.

The web has since then developed into a more multimedia oriented environment from its earlier text driven format. Currently, the web commonly utilizes multimedia formats employing video, audio, as well as text. It is theorized that multiple multimedia demonstration of concepts can further enhance the transfer of knowledge (Spiro, Collins, Thota, & Feltovich, 2003) according to Cognitive flexibility theory. Therefore, it is presumed that the ability of web-based environments to present clinical skills within a role play as well as being able to present them using other formats such as audio and text will allow for enhanced learning according to Cognitive Flexibility theory.

Situated learning theory.

Situated Learning theory states that the way learning normally occurs is a response to the activity, context and culture in which it is situated. Therefore, abstract classroom learning activities which present knowledge out of context do not support a normal style of learning (Lave & Wenger, 1991). Situated Learning theory also emphasizes the importance of interaction and collaboration in learning.

Situated Learning using videos was explored by The Cognition and Technology Group at Vanderbilt (1993). The group studied methods of teaching elementary school age children about literacy, social studies, and mathematics using videos of popular characters (i.e. Sherlock Holmes) encountering scenarios in which those types of skills were needed and utilized. Situated Learning theory was also presented as being a guidance framework for web-based learning (Hong, 2001); particularly for practice education. It was noted that the web could allow for knowledge development through presenting videos of practitioners at

work. Through this process, similar to that of apprenticeship, "learners gradually acquire skills of the trait, norm, and rules held by the community of practice" (Hong, p. 33). The ability of web-based environments to depict clinical skills using a role play within a "social work" environment such as a client session allow for enhanced learning according to Situated Learning theory.

Social learning theory.

Social Learning theory dictates that learning can be enhanced through observing and modeling the behaviors, attitudes, and emotional reactions of others (Bandura, 1977). This theory is similar to that of Situated Learning theory in that knowledge is attained through observation. Social Learning theory also takes into consideration the motivations of the learner to adopt an observed behavior. If the observed behavior results in valued outcomes, the more likely the behavior will be adopted by the learner (Bandura, 1977).

Therefore, a web-based environment which depicts characters using clinical skills can enhance the learning of clinical skills by allowing students to model their clinical skill behaviors after the characters in the web-based videos. It is presumed that the student will wish to enhance their clinical skills. Therefore, since the enhancement of clinical skills is a desired outcome, it will be likely that the learner will adopt the behavior.

Multimedia theory and videogame environments.

In addition to primarily text-based web-based learning, there have been recent developments in using multimedia environments to teach web-based skills. Multimedia is defined as the use of several different media (e.g. text, audio, graphics, animation, video, and interactivity) to convey information. Multimedia theory (Moreno & Mayer, 2000) dictates that students learn better when words in a message are presented in a multimedia format;

spoken text and visual imagery rather than printed text. This implies that students who receive messages via multimedia presentations will learn better than if they had received these messages through text alone. Multimedia theory is similar to cognitive flexibility theory in the way that learning is promoted when presented in multiple formats. Multimedia video scenarios have been found to enrich the learning experience of students learning concepts online (Hall, Molan, Bannon & Murphy, 2005).

Related to multimedia theory, it is noted that web-based learning environments established in a gameplay format are good environments for experiential learning. Gameplay has been defined as one or more casually linked series of challenges in a simulated environment (Killi, 2004). Video games can be used as challenging, hands-on practice tools (Gee, 2003). Video game learners are in a no-risk world where risk is simulated through the challenges presented e.g., you save the world/rescue the prisoner.

Hands-on practice learning is possible in these types of simulated environments (Kiili, 2005). These simulated environments can be useful tools in the instruction of basic skills and development of critical thinking (Kiili, 2005). It is implied that gameplay taking place in a simulated social work environment would allow for social work clinical skills learning as well.

The following table illustrates current activities used or recommended for the four stages of the Kolb cycle. It also illustrates how these activities can also be considered web-based activities that are categorized under these alternative theories that help support the use of web-based activities for enhanced learning.

Table 3: Experiential Learning Activities and Encompassing Related Theories

Experiential Learning Stages (Kolb, 1984)	Noted social work methods of experiential learning	Possible Counterparts in the Virtual Learning Environment (VLE)	Related Educational Theories
Concrete experience	Observing role-plays exercises (Askeland, 2003)	Observing clinical role play in VLE Observing clinical skills performed in a real setting in VLE	Social Learning Theory (Attention to modeled events) / Cognitive Flexibility Theory (multiple perspectives)
	Observing real settings (Horwath & Thurlow, 2004)		Social Learning Theory (Attention to modeled events) / Situated Learning (activity within culture/ context) / Cognitive Flexibility Theory (multiple perspectives)
Reflective Observation	Giving feedback (Taylor, 2004; Askeland)	Allowing student to see feedback provided by other students	Cognitive Flexibility Theory (multiple perspectives)
	Discussing (Taylor; Askeland)	Allowing student to give and receive text feedback with other students	Cognitive Flexibility Theory (multiple perspectives)
	Professor-students dialogue (Taylor; Askeland)	Using Instructor Feedback option such as audio clips/ Allowing student to give and receive text feedback with other students	Cognitive Flexibility Theory (multiple perspectives)
	Researching and Reading (Horwath & Thurlow; Gibson & Gray, 2002)	Using textbook excerpt option/ Using Instructor feedback option such as audio clips/ Using clinical skills definitions option	Cognitive Flexibility Theory (multiple perspectives) / Multimedia Theory
Abstract conceptualization	Internally self reflecting after being prompted by instructor	Internally self-reflecting after being prompted online	
Active experimentation	Participating in role-plays exercises (Gibson & Gray; Askeland)	Identifying skills in VLE clinical role play in a professional setting	Situated Learning (activity within culture/ context) / Cognitive Flexibility Theory (multiple perspectives)
	Playing video games (Kiili, 2005; Gee, 2003)	Playing Clinical skills identification game	Cognitive Flexibility Theory (multiple perspectives) / Multimedia Theory / Video Game Environments

Clinical Skills

Ivey & Authier (1978) were early researchers of clinical skills. They noted that there was an accumulation of evidence that indicated the existence of specific concepts and skills that underlay different approaches to professional help. They approached these clinical skills as being a key element in answering the question of whether being able to help people was a skill that could be learned.

Ivey and Authier (1978) dictated that identifying and categorizing clinical skills is an essential component in utilizing them effectively. This was one step in part of a set clinical skills training process. By identifying and categorizing clinical skills it allows the ability of being able to transfer the knowledge about these skills from a seasoned practitioner to a student/learner.

Learning clinical skills.

In addition to identifying and categorizing clinical skills, Ivey & Authier presented additional methodology of learning clinical skills as well. They described how clinical skills could be taught by focusing on one skill at a time; first by defining the skill and then by actively practicing the skill. They specifically mentioned role plays as a possible learning technique and stated that the more real or authentic the problems being role played, the better. They stressed that observing video models of these role plays could also be a valuable tool in learning clinical skills.

Other steps in the clinical skills training process included: (a) having an individual videotape themselves in a role-play with another individual portraying a client, (b) having the individual view themselves on tape and compare themselves to a model (ideal) demonstration of clinical skills, (c) having warm and supportive supervision

during the process, (d) repeating the videotaping and comparison processes with emphasis on particular clinical skills, and (e) reviewing these processes with the supervisor (Ivey & Authier, 1978).

Ivey and Authier went on to explain how this methodology described above could be used to teach clinical skills using a wide number of theoretical frameworks. They noted how clinical skills training is experiential in nature. "While cognitive written materials are available for each skill…the major emphasis is on participation and action by the trainee" (p.17).

Types of clinical skills.

Ivey and Authier are also noted for their categorization of clinical skills into a framework involving basic skills, influence , and the concept of empathy. Basic skills were defined as being attending behaviors and listening skills. Attending behaviors pertain to physical actions used to make the client feel comfortable and feel that they are being listened to. Examples include eye contact, body language, and verbal following behavior. Listening skills are also used to make the client feel comfortable and feel that they are being listened to. These skills are more verbal in nature. Examples of these skills include closed questions, open questions, minimal encouragement, paraphrasing, reflection of feeling, and summarizations.

The two types of skills are not exclusive to each other. Attending behaviors may and often do come into play when utilizing listening skills (i.e. it is important for a social worker to maintain eye contact with a client when reflecting feelings back to the client). This is important to note since use of attending behaviors plays a key role in measuring

how effective the social worker is in demonstrating their listening skills. This will be discussed later in the *Measurements* section.

It is important to note that although these skill definitions were developed over two decades ago, they are still referenced in modern day social work practice texts and have almost verbatim definitions. Cormier & Cormier (1991) referenced Ivey extensively in their reference guide, "Interviewing Strategies for Helpers".   Several modern Social Work practice authors have in turn referenced Cormier & Cormier's text in the writing of their manuals and have used the same clinical terms that Ivey & Authier developed. (Gambrill, 2005; Zastrow, 2006; Cummins, Sevel & Pedrick, 2006).

Evaluating clinical skills.

As detailed previously there have been a number of different methods used to evaluate the effectiveness of teaching clinical skills in web-based environments (Seabury & Maple, 1993; Satterwhite & Schoech, 1995; Peters, 1999; Seabury, 2003; Cauble and Thurston, 2000; Siebert, Siebert, & Spaulding-Givens, 2006). These methods have included:

Surveys of student opinions as to the effectiveness of and satisfaction with the web-based environment to teach them (Seabury & Maple; Satterwhite & Schoech; Cable & Thurston)

Student grades on quizzes and course assignments over the material taught in the web-based environment (Seabury; Siebert, Siebert, & Spaulding-Givens)

Scales that are specific to evaluation of knowledge of techniques and procedures (Peters, Cauble & Thurston) used in a pre-post test format to assess change in knowledge

The research question of this study focuses on the effectiveness of teaching clinical skills in a Virtual Learning Environment. Because there is a sentiment of doubt among academia about the ability of a web-based environment to accomplish this, a strong method of measurement of the effectiveness of teaching clinical skills is needed in order to refute that sentiment. The use of an existing scale allows for a method of measurement of a variable that has been effectively used before (Rubin & Babbie, 2004). From the descriptions of how this has been done in previous research, surveys that are intended to measure student perceptions , quizzes and course assignments, and technique and procedure scales have all been used the measure the effectiveness of a learning environment.

In order to measure the effectiveness of their model to teach clinical skill sets to students, Ivey participated in the creation of a number of scales designed to measure the change in students' counseling behaviors. These scales came in the form of coding scales which counted various attending behaviors and effectiveness scales which rated the counselors abilities on several dimensions in a likert scale format (Ivey & Authier, 1978).

Also developed was a scale called the Microcounseling Skill Discrimination Scale (MSDS). It included a scripted role play between a client and helper in which the counselor would utilize clinical skills of reflection of feeling and paraphrasing (listening skills) to work with the client (Lee, Zingle, Patterson, Iver, & Hasse, 1976). The transcript was intended as a guide to create role plays (either to be performed live or videotaped). The role plays were divided into forty-four segments; half of which portrayed appropriate responses to the client and half which portrayed inappropriate responses. Whether the response was appropriate or inappropriate was determined by the

way the social workers would use attending behaviors while utilizing reflection of feeling and paraphrasing. These attending behaviors, as described previously, include eye contact, body position, and facial expressions.

Each of the video segments was then viewed and rated by a panel of clinical experts on a likert type scale to judge the effectiveness of the response to the client. The expert ratings were used to norm the scale. Students learning about the clinical skills portrayed in the role plays are to view the role plays (either performed live or via video), rate the role plays, and have their own scale ratings compared against the expert ratings to be used as a measure in order to determine their knowledge level of clinical skills. The MSDS will be discussed further in the Methodology section of this study (See Appendix C).

Attitude towards Technology

Another theme found within the literature review of web-based social work learning concerns attitude towards technology. Learner attitude toward course delivery mechanisms (in this case a web-based learning environment) has been shown to play a significant role in the ability of an individual to learn. However, in web-based learning, the amount of literature on this subject is small (Valenta, Therriault, Dieter & Mrtek, 2001). A study which evaluated a World Wide Web-based graduate social work research methods course used a hypothesis that dictated that "students who were uncomfortable with the use of computers would find less value in all types of Web-assisted strategies" (Stocks & Freddolino, 1998). This study's purpose was to analyze attitudes towards the technology used to deliver a course. Although some students were dissatisfied, the study concluded that this was due to students realizing "that they have to depend on their own

computer skills to gain access to important syllabus information, assignment instructions, and course deadlines" and other instructional data. The students commented during the study that if key instructional materials such as those listed above were provided on paper before the web-based part of the course began, satisfaction would be higher.

Schoech (2000) conducted a study of Web-Delivered Learning in order to explore students' attitudes towards technology and how being educated over the web affected learners attitude. "Although students found Web-Delivered Learning more satisfying than anticipated, they also became more convinced that certain content should not be taught over the Internet" (p.477). The "certain content" referred to was "social work content" (p. 476) as determined by the survey question "Certain social work content should not be taught over the Internet but reserved for the classroom" (p. 476). It was noted that this attitude was probably due in part to the "limited exposure of the class to more sophisticated techniques, such as streaming video."

Collins and Jerry (2005) found a similar theme in their research study. They noted through an informal evaluation that dropouts within the Campus Alberta Initiative occurred during the orientation or early on in the program. They concluded that a "mismatch between the student and the web-based learning platform is a significant factor" (p. 115) in attrition.

Synthesizing Literature Review into Current Study

As detailed previously, there is a sentiment of doubt in the social work profession over the effectiveness of using web based learning environments to teach social work; in particular clinical skills. Therefore, a clinical skills web-based learning environment could be developed to evaluate the accuracy of this sentiment. This learning environment

could be tested to determine whether students could increase their knowledge of clinical skills though an increased ability to recognize these skills. Additional analysis should be conducted in order to analyze the effects of attitude towards technology on the increase of knowledge of clinical skills in web-based environments.

Creating an experiential learning environment.

As previously discussed, experiential learning environments are deemed more appropriate for social work education. Experiential learning theory suggests four phases to attain learning; The Concrete Experience Phase, The Reflective Observation Phase, the Abstract Conceptualization Phase, and the Active Experimentation Phase (Kolb, 1984).

An example of a web-based learning method developed within the framework of Experiential Learning theory would entail the following:

- Experience a multimedia exercise in which role play examples set in real settings can be viewed in multiple formats (Concrete Experience)

- View, hear, and read perceptions and reflections from others and be able to give perceptions and reflections to others (Reflective Observation)

- Be prompted to reflect on new knowledge and combine it with previously existing knowledge (Abstract Conceptualization)

- Have an active opportunity to apply new knowledge (Active Experimentation)

Associated educational theories and environments that could foster learning include Cognitive Flexibility Theory, Situated Learning Theory, Social Learning Theory, Multimedia Theory, and Video Game Environments. An example of a web-based learning method developed within the framework of these learning theories would entail the following:

- Students would be challenged to identify skills correctly (Multimedia Theory and Video Game Environments)

- Students could receive information in multiple formats from multiple sources (Cognitive Flexibility Theory)

- Students could view activity within a culture and/or context such as a client-social worker role play (Situated Learning Theory) and view events modeled after real life situations (Social Learning Theory)

The Virtual Learning Environment being Studied

Based on this theoretical framework, a web-based and asynchronous Clinical Skills Virtual Learning Environment was developed for use in this study. For the purposes of this study it will be referred to as the Clinical Skills – Virtual Learning Environment (CS-VLE).

The CS-VLE allows the student to see clinical skills educational content in an experiential learning format as well as other related educational theoretical formats. All material could be selected by the student when the student desired it (concrete experience/cognitive flexibility). Text boxes were shown that prompted students to take a moment and reflect on what they have just learned and how it relates to what they already know (multimedia/abstract conceptualization). A social worker-client role play video in which clinical skills were exhibited (reflective observation/ situated learning/social learning) were also presented to the students. At the right of the screen were buttons labeled with clinical skills. Students clicked on a button when the corresponding skills were exhibited in the video. The number of correct and incorrect skills identified were provided to students who could repeat the exercise to try to improve

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their scores (active experimentation/video game environment). A detailed explanation of

all the features of the CS-VLE is provided in the *Intervention* section.

CHAPTER III

METHODOLOGY

The purpose of this study is to assess the effectiveness of a web-based clinical skills learning environment. The study assessed whether **Social work students can increase their knowledge of clinical skills in a Clinical Skills Virtual Learning Environment (CS-VLE).** The increase of knowledge was determined by an increase in ability to recognize clinical skills. The CS-VLE used in the study offered the opportunity to study:

1. Increase in student knowledge (Dependent Variable [DV]) measured by a pre-post test of clinical skill knowledge while analyzing the order and number of CS-VLE activities completed (see *Analysis* section)

2. Influence of previous education (Independent Variable [IV] 1A)/previous experience (IV 1B) with increase of knowledge of clinical skills, and

3. Influence of attitude towards technology (IV 2)on increase of knowledge of clinical skills.

The CS-VLE used in the study was utilized as the intervention. As detailed earlier in this study, the CS-VLE allowed students to login and view video/audio clips from experts and read textbooks excerpts about the clinical skills to be learned in the exercise. Students were given forms to write feedback to other students about their

perceptions of the CS-VLE exercises. This written feedback was then shown to the students as an option in the CS-VLE. In addition, students were able to observe role plays portraying the same skills about which they were learning. Finally, the students were asked to identify skills being exhibited in the role play. It was hypothesized that the CS-VLE would allow for increased knowledge of clinical skills since it allowed the students to experience all the components of an experiential learning environment which the literature suggests is an optimal environment for learning clinical skills. For a more detailed description, see the *Clinical Skills – Virtual Learning Environment* section.

The measurement instrument used to determine increase in knowledge was the MSDS detailed previously (Ivey & Authier). The MSDS was administered to students as a pre-test and post-test. A comparison group was proposed to be made that consisted of students that did not use the CS-VLE. An experimental group was made that consisted of students that used the CS-VLE. Statistical testing was planned to ensure equivalency between the groups.

It was noted that there are a finite number (approximately 600) of social work students in the North Texas area that were potential subjects for the study. With this as a factor, data was collected for the experimental group first to ensure an N large enough for adequate statistical analysis of factors (see *Analysis* section). It was proposed that after the amount of student data was collected for the experimental group, then data would start being collected for the comparison group. The comparison group was proposed to be self-selected based on comparative matches with experimental group participants using demographic information. It was expected that a comparison group of the same size of the experimental group would be attained.

Students were administered the MSDS as a pre-test and then were asked to work with the VLE. The MSDS was then administered to the students again as a post-test. The study subtracted pre-test scores from post-test scores and analyzed the differences. Although this should be a major control for previous clinical skills experience and education, to strengthen the analysis, additional experience and education data was collected (See *Analysis* section). This involved running two correlations between: (a) education and (b) experience data and the pre-post-test difference to see if significant associations existed in order to control for any data that had an influence. These variables were determined by a survey asking for information concerning the number of courses taken that focused on clinical skills content and number of years experience in a clinical setting (see *Appendix A Clinical Skills Survey*).

Primary Hypothesis

The primary hypothesis to be tested in this research project were based on the theoretical models that stem from the literature found on the subject of experiential learning environments and other theories that encompass an experiential learning approach (see *Table 3*). The first and primary hypothesis studied in this research project is **Hypothesis 1: Students in the experimental group will have significantly increased knowledge of clinical skills.**

Rationale: This hypothesis stems from experiential learning theories and related learning theories. This hypothesis was tested by comparing MSDS pre-test scores to post test scores to measure change in knowledge. Since it is possible for a student to already have a level of clinical skills knowledge that is already so high that improvement cannot be measured**,** analysis was included so previous clinical skills knowledge could be

controlled for. It was assumed in the study that clinical skills knowledge is attained

through education and/or experience. A pilot test was conducted (N=10) to determine if

high clinical skills scores throughout were a problem. The pilot test found the first ten

participants to have an average pre-test score that indicated that there was adequate room

for improvement (mean=1.4 [difference compared to baseline on a 7 point scale]/

SD=0.49) when compared to the expert baseline. (Likert scores in large samples may be

treated as continuous data)

Sub-hypotheses.

Hypothesis 1A: The increase in knowledge of students that completed all of Kolb's

experiential learning phases compared to those that did not will be positive,

meaningful, and significant.

Rationale: This hypothesis stems from the discussion within experiential

learning theory that dictates complete student participation in the experiential learning

process (all phases) is necessary for student learning to be facilitated (Kolb & Fry, 1974;

Rogers & Freiberg, 1994). It also stems from Kolb and Fry's discussion of how each

phase should be considered a key element in the construct of learning (Kolb & Fry,

1974). This hypothesis was tested by comparing MSDS pre-test to post test score

differences between students that participated to those that did not participate in each of

the learning phases. The term 'meaningful' indicates that the increase is in the predicted

direction and that the findings are found to be statistically significant. The term

'meaningful' does not address the issue of practical significance or clinical importance.

A more rigorous test was also conducted with contributing variables of pre-knowledge

through education and experience and attitudes towards technology partially correlated out.

Hypothesis 1B: Students who progress through the CS-VLE in the order specified by Kolb's four phase cycle of experiential learning will not have significantly greater knowledge of clinical skills than those who do not follow Kolb's progression

    Rationale: This hypothesis stems from the literature discussion concerning experiential learning theory that refutes the notion that the four phase cycle of experiential learning (Kolb & Fry, 1974) is actually a cycle; as in, the phases must be completed in a particular sequence (Smith, 2001; Goldstein, 2001). This hypothesis was tested by comparing MSDS pre-test to post test score differences between students that participated in all experiential learning phases in the specific order set by the Kolb model and students that did not. A more rigorous test was also conducted with contributing variables of pre-knowledge through education and experience and attitudes towards technology partially correlated out.

Hypothesis 1C: The correlation between the total number of learning activities completed by students and increase in clinical skills knowledge will be positive, meaningful, and significant.

    Rationale: This hypothesis stems from alternative learning theories (see *Table 3*) that imply that increase in knowledge is possible through each CS-VLE activity (Bandura, 1977; Gee, 2003; Hall, Molan, Bannon & Murphy, 2005; Hong, 2001; Lave & Wenger, 1991; Moreno & Mayer, 2000; Spiro, Collins, Thota, & Feltovich, 2003) and the more activities completed, the greater the increase in knowledge. This hypothesis was tested by correlating MSDS pre-test to post test score differences to the total number of

learning activities representing experiential learning phases (see *Table 4*) completed by students. The term 'meaningful' indicates that the correlation is in the predicted direction and that the findings are found to be statistically significant. The term 'meaningful' does not address the issue of practical significance or clinical importance. A more rigorous test was also conducted with contributing variables of pre-knowledge through education and experience and attitudes towards technology partially correlated out.

Figure 4 below illustrates the experimental design of the primary hypothesis (Rubin & Babbie, 2004). The common shorthand notation for this type of experiment is depicted below.

$$O_1 \quad X \quad O_2$$

$$O_1 \qquad O_2$$

Figure 4: Research Model

Where O represents observations (in this case two; pre-test and post-test) and X represents the intervention. This design presumes non-equivalent groups (no randomization).

Secondary hypothesis.

The secondary hypothesis tested in this research project stems from the literature found on the subject of attitude toward technology and its effect on web-based learning environments. There is a need indicated by the literature for research that measures and analyzes attitude towards technology and its effect on knowledge increase in web-based environments. The second hypothesis studied in this research project is **Hypothesis 2: Students attitude towards technology will be positively correlated with increase of knowledge of clinical skills**

Rationale: This hypothesis stems from the discussion concerning the more positive the attitude towards technology, the greater the learning (Stocks & Freddolino, 1998; Schoech, 2000; Valenta, Therriault, Dieter & Mrtek, 2001). This hypothesis was tested by correlating measured change in clinical skills knowledge with attitude towards technology to determine if the correlation was significant. A more rigorous test was also conducted with contributing variables of pre-knowledge through education and experience partially correlated out.
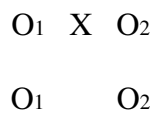
The Intervention

The original Virtual Learning Environment (VLE).

A Virtual Learning Environment (VLE) designed by a group of social work and computer science and engineering researchers at the University of Texas at Arlington was the software framework for the Clinical Skills – Virtual Learning Environment (CS-VLE) used as the intervention in the study. The purpose for development of the CS-VLE was to allow research on the use of the original VLE features and learning. It should be noted that the original VLE development was primarily concerned with content delivery and the capture of data about that delivery. It was not concerned with the management of content delivery, e.g., producing rosters, contacting students, grading, scoring, etc and other functions of class management software such as WebCT/Blackboard. Additionally, the VLE recorded student interactions with the VLE with a description of the interaction and a time stamp. Other VLE options available to the student were the ability to show/hide the display of feedback (player score in relation to other players scores) and score. Students could also customize the colors used in the interface of the learning environment.

The Clinical Skills – Virtual Learning Environment.

The CS-VLE used the original VLE program framework and integrated several new text, audio, and video clips that students could experience. These components allowed the CS-VLE to be an experiential learning environment consistent with the theoretical requirements of this research described previously.

The CS-VLE user interface.

Figure 5 is a screen shot of the CS-VLE user interface. The yellow buttons at the bottom of the interface allow the student to access the various lessons and feedback options on clinical skills in a variety of different formats. The red and green buttons beside the yellow buttons allow the student to stop and start the clinical skills identification exercise. The main screen in the center of the interface displays the video clips used in the CS-VLE, seen in Figure 5 below). The buttons on the right side of the main screen are the clinical skills buttons that the student used during the clinical skills identification exercise.
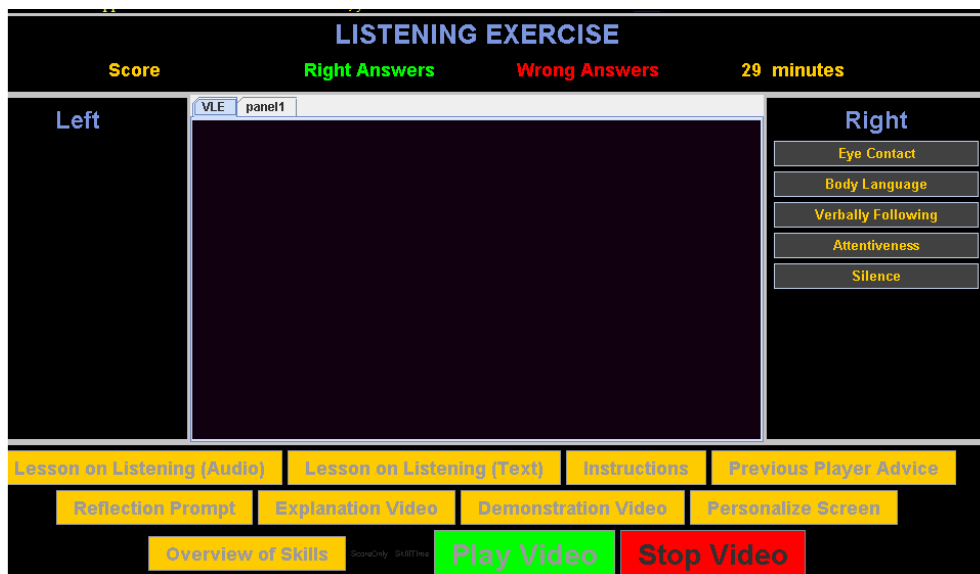
Figure 5: Clinical Skills – Virtual Learning Environment

Table 4 summarizes the phases of experiential learning, how these phases were translated to web-based activities, what CS-VLE activities were associated with each phase, how participation in the CS-VLE activities were measured, and which button is used to access each phase.

Table 4: Experiential Learning Phases and Associated CS-VLE Components

Experiential Learning Phase	Equivalent Activities	Associated CS-VLE Component	Measure(s) (see *Instrumentation and Measures* section)	CS-VLE Button
Concrete experience	Viewing concepts in clinical role plays	Viewing video clips of clinical skill examples that explain clinical skills in different formats	CS-VLE log record as to whether student accessed video clips and timestamp	Explanation Video & Demonstration Video buttons
Reflective observation	Allowing feedback/ discussion/professor-student dialogue/ reading and research opportunities through reading of web-based text and web-based feedback opportunities	Hearing audio clips from professors speaking about clinical skills, reading textbook excerpts, reading students perceptions of video clips about clinical skills and being able to write about personal perceptions of video clips	CS-VLE log record as to whether student accessed feedback/discussion options	Lessons on Listening (Audio), Lessons on Listening (Text), & Previous Player Advice buttons
Abstract conceptualization	Internally self reflecting after being prompted	Prompt to reflect on new knowledge	CS-VLE log record as to whether student accessed online prompt to reflect on learning.	Reflection Prompt button
Active experimentation	Applying knowledge to identify skills exhibited in a clinical role play	Experiencing CS-VLE exercise where clinical skills being demonstrated in a video clip are actively identified Identifying clinical skills exhibited in a CS-VLE role play	CS-VLE log record as to whether student worked with CS-VLE exercise	Play Video button

The following explains the experiential learning phase activities and their VLE counterparts in columns 2 and 3 of *Table 4* along with how they are accessed using the CS_VLE interface. The various video clips explaining the proper use of clinical skills came from two interviewing skills development videos (Engen & Albert, 1995; Mayadas & Rodriguez, 1992). These video clips explained how to use clinical skills; specifically using attending behaviors (body language, eye contact, facial expressions, etc…) while performing various listening skills (paraphrasing, summarizing, reflecting feelings, etc…).

The video clips were in different formats. The Mayadas & Rodriguez video showed a counselor and client role pay. This video was accessed in the CS-VLE by clicking on the Explanation Video button. The attending behavior being demonstrated by the social worker was displayed at the bottom of the screen. The Engen & Albert, 1995 video showed two social workers lecturing about attending behaviors. The Engen & Albert video concluded with a role play video of a social worker utilizing the skills while working with a client. This video was accessed in the CS-VLE by clicking on the Demonstration Video button. Both these video clips were Concrete Experience phase activities in the way they expressed information in multiple formats from multiple sources.

Also in the CS-VLE were options that allowed students to:

- Hear audio clips from professors speaking about clinical skills by clicking on the Lesson on Listening (audio) button (See *Appendix I Clinical Skills – Virtual Learning Environment Options*)

- Read textbook excerpts about clinical skills by clicking on the Lesson on Listening (text) button (See *Appendix I Clinical Skills – Virtual Learning Environment Options*)

- Read student feedback on the best way to learn clinical skills while using the CS-VLE by clicking on the Previous Player Advice button (See *Appendix I Clinical Skills – Virtual Learning Environment Options*)

- Leave feedback on a survey form for other students on the best way to learn clinical skills while using the CS-VLE (See *Appendix D Student Feedback Form*). All feedback statements left on the surveys was collected and pooled. A feedback statement was then randomly selected and subsequently presented to students as they used the CS-VLE in the manner described above.

These options were Reflective Learning phase activities in the way they allowed users to view, hear, and read perceptions and reflections from others and be able to give perceptions and reflections to others.

Another option, when selected by the student by clicking on the Reflection Prompt button, allowed the student to read a prompt to self-reflect on what has been learned and add it to what was already known. A pop-up message reading **"Please reflect on what you previously had known about clinical skills; through both experience and education. Take a moment and reflect on what you have just learned by participating on this exercise. How has this experience expanded your knowledge of clinical skills? How do you think this will affect you in the future?"** This option was an Abstract Conceptualization Phase activity in the way it allowed for

the construction of new knowledge by combining newly acquired knowledge with previous knowledge.

Finally, in the CS-VLE was an exercise that allowed students to watch a video role play and identify the clinical skills being correctly, or incorrectly utilized by clicking on the Play Video button. The video could be stopped by clicking on the Stop Video button. The clinical skills identification exercise scripts were developed from the clinical skills video (Engen & Albert, 1995). The specific clips used in the CS-VLE were sections in which specific clinical skills were being displayed. This activity was an Active Experimentation Phase activity in the way it allows for active application of knowledge as the students clicked on the buttons to the right of the video to record their recognition of the skills being exhibited.

Two buttons on the CS-VLE were not related to the experiential learning phases. The Instructions button gives an overview of the CS-VLE including directions on how to use it (See *Appendix I Clinical Skills – Virtual Learning Environment Options*). The Personalize Screen button allows the student to change the background color of the screen and hide or display the game score.

Instrumentation and Measures

This section explains the measures in column 4 of *Table 4* along with the other measures; Clinical skills history (Education and Experience), Demographic information, Clinical skills knowledge, and Attitude towards technology. The Clinical Skills History Survey, Attitude Towards Technology Survey and MSDS pre and post tests acted as research measurement instruments. The variables used in this research project came from these instruments. Measures were also taken from the Log of the CS-VLE which

indicated which activities within the CS-VLE students participated in as well as in what order the students participated. The measures of Complete Phase Participation, Order of Phases, and Number of Completed Phases (discussed below) were created from the information attained from the Log of the CS-VLE.

Clinical skills history (Education and Experience).

The Clinical Skills History Survey pertains to level of clinical skill education and experience that the student had involving the use of attending behaviors in working with clients (counseling sessions). The Clinical Skills History Survey (see *Appendix A Clinical Skills Survey*) describes the clinical skills of attending behaviors using the Ivey and Authier definition (Ivey & Authier, 1978) without defining them to the point where it would affect their performance on the pre and post tests (instrumentation validity). Students were asked to rate their level of education and experience with clinical skills education and experience. Two ratio variables were derived from this survey: (a) An Education Clinical Skills History variable that represented the number of Social Work courses completed that focused on clinical skills and (b) An Experience Clinical Skills History variable that represented number of years of work, including volunteer experience completed in which clinical skills were utilized.

Demographic information.

Demographic information was collected on a short demographic information form. Students were asked to specify their gender, age, and current program level (BSW, MSW, and PhD). This information was collected primarily to create a matching comparison group for statistical analysis and for descriptive statistics to discuss the sample.

Clinical skills knowledge.

The pre and post test of the MSDS were the measurements used in the study to measure clinical skills knowledge. Change between the pre and post test was used to determine increase or decrease of clinical skills knowledge (See *Appendix C Microcounseling Skills Discrimination Scale*). In order to maintain validity, it must be noted that the last version of the scale is approximately thirty years old. A literature review has found only the Stokes & Romer (1977) revision to be the last revision of the MSDS. Therefore, actors were recruited to create a new MSDS that was produced from the original transcripts. The actors were given the clinical skills definitions (Ivey & Authier, 1978) before they were videotaped. Then the method used to originally norm the scale was repeated.

This method utilized involved having experts take the MSDS and using their mean rating as the normed rating. Student MSDS ratings were then based on comparisons to these normed expert ratings. In order to re-norm the MSDS. Five current experts on clinical skills were asked to view video clips of actors portraying the counselors in scenes that are transcribed by the MSDS script. These five experts then rated the effectiveness of the actors/counselors portrayed in the video as dictated by the scale norming procedure.

The five experts of clinical skills used in establishing the baseline were selected within a set criteria. All experts had a Ph.D. in Social Work and had taught upper-level classes that contained clinical skills content. All experts also possessed advanced clinical social work licenses (LMSW-ACP). Inter-rater reliability was analyzed by determining the kappa statistic of each experts' score compared with every other expert. The analysis

indicated that all experts' comparisons had an average kappa statistic between .22 and .40 except for one (.16). Because this kappa is considered a poor level of agreement (Streiner & Norman, 1984), this expert was considered an outlier and the scores eliminated from the baseline. Kappa statistics between .22 and .40 are considered fair to moderate (Streiner & Norman, 1984). The tables below show the remaining four expert scores and the averages used for the baseline.

Table 5: Expert Reflection of Feelings MSDS Scores

Video Clip #	Expert 1	Expert 2	Expert 3	Expert 4	Average Score
Video Clip 1	1	3	1	1	1.5
Video Clip 2	1	4	1	3	2.25
Video Clip 3	3	5	3	2	3.25
Video Clip 4	3	3	3	3	3
Video Clip 5	3	2	3	2	2.5
Video Clip 6	4	4	4	3	3.75
Video Clip 7	5	2	5	5	4.25
Video Clip 8	5	4	5	6	5
Video Clip 9	1	1	1	2	1.25
Video Clip 10	1	2	1	1	1.25
Video Clip 11	1	2	1	3	1.75
Video Clip 12	2	2	2	1	1.75
Video Clip 13	3	3	3	2	2.75
Video Clip 14	4	1	4	1	2.5
Video Clip 15	5	4	5	6	5
Video Clip 16	5	5	5	7	5.5
Video Clip 17	5	3	5	3	4
Video Clip 18	6	3	6	2	4.25
Video Clip 19	4	4	4	2	3.5
Video Clip 20	2	2	2	1	1.75
Video Clip 21	4	2	3	1	2.5
Video Clip 22	4	4	4	3	3.75

Table 6: Expert Paraphrasing MSDS Scores

Video Clip #	Expert 1	Expert 2	Expert 3	Expert 4	Average Score
Video Clip 1	3	4	3	2	3
Video Clip 2	1	2	1	1	1.25
Video Clip 3	5	3	5	5	4.5
Video Clip 4	5	4	5	4	4.5
Video Clip 5	1	1	1	1	1
Video Clip 6	2	3	2	2	2.25
Video Clip 7	4	4	4	7	4.75
Video Clip 8	3	2	3	1	2.25
Video Clip 9	3	5	3	2	3.25
Video Clip 10	2	5	2	3	3
Video Clip 11	2	2	2	1	1.75
Video Clip 12	3	4	3	4	3.5
Video Clip 13	3	3	3	2	2.75
Video Clip 14	4	3	4	3	3.5
Video Clip 15	4	5	4	4	4.25
Video Clip 16	4	5	4	6	4.75
Video Clip 17	3	2	3	1	2.25
Video Clip 18	3	5	3	3	3.5
Video Clip 19	3	2	3	2	2.5
Video Clip 20	2	2	2	1	1.75
Video Clip 21	2	2	2	5	2.75
Video Clip 22	4	5	4	7	5

Additional methods used to counter threats to internal and external validity will be discussed in the Validity and Reliability section of this study.

Complete phase participation, Order of phases, and Number of completed phases.

Complete phase participation, Order of phases, and Number of completed phases are measures that were attained from data from the Log of the CS-VLE. These variables were utilized in assessing the sub-hypotheses of the study. Complete phase participation is a yes/no dichotomous variable that indicates whether or not a student participated in CS-VLE activities that represented all phases of experiential learning. Students completing all 4 phases represented a response of 'yes'. Students completing 0-3 phases represented a response of 'no'. A phase was considered complete if any of the CS-VLE buttons associated with that phase were clicked on by the student. Each phase could only

be considered completed one time (therefore, it did not matter if any button was pressed more than one time).

Order of phases is another yes/no dichotomous variable that indicates whether or not a student participated in CS-VLE activities that represented all phases of experiential learning in the order set forth by Kolb. This variable was determined by checking the log of the CS-VLE and determining if the sequence of phase exercises were completed by the student in the order set forth by Kolb. Again, a phase was considered complete if any of the CS-VLE buttons associated with that phase were clicked on by the student. The order of phases were considered done in order if the sequence of phases were completed in order at any point during the total time that the student used the CS-VLE.

Number of completed phases reflects the number (0-4) of activities that represented the phases of experiential learning completed by the student. This variable was determined by checking the log of the CS-VLE and determining which phases were selected by the student. Again, a phase was considered complete if any of the CS-VLE buttons associated with that phase were clicked on by the student. Each phase could only be considered completed and counted once (therefore, it did not matter if any button was pressed more than one time).

Attitude towards technology.

The Attitude towards Technology survey is a modified version of the Teacher Attitude Toward Information Technology Scale (TAT) (Knezek, Christensen, Miyashita & Ropp, 2000). Students were asked to indicate how they feel about each of the activities of the CS-VLE that represent the phases of experiential learning in a semantic differential scale format (see *Appendix B Attitude Towards Technology Survey*). The

scale items are listed below. It is important to note that though semantic differential

scales are clearly ordinal, the variable responses are routinely treated as interval scales

and are routinely analyzed as continuous data. This makes it possible to treat the

variables created from semantic differential scales as continuous data (Tabachnick &

Fidell, 1983) for the purposes of regression analysis (See *Chapter IV Results*).

Scale responses were averaged for each item and summed and averaged for a

final Attitude towards technology score. It is also important to note that some scale

responses (in italics) were reverse coded (meaning that the likert scale was scored in an

opposite values manner.)

To me, demonstration videos are:

1. important _____ _____ _____ _____ _____ _____ _____ unimportant (1)

2. boring _____ _____ _____ _____ _____ _____ _____ *interesting (2)*

3. relevant _____ _____ _____ _____ _____ _____ _____ irrelevant (3)

4. exciting _____ _____ _____ _____ _____ _____ _____ unexciting (4)

5. means nothing _____ _____ _____ _____ _____ _____ _____ *means a lot (5)*

6. appealing _____ _____ _____ _____ _____ _____ _____ unappealing (6)

7. fascinating _____ _____ _____ _____ _____ _____ _____ mundane (7)

8. worthless _____ _____ _____ _____ _____ _____ _____ *valuable (8)*

9. involving _____ _____ _____ _____ _____ _____ _____ uninvolving (9)

10. not needed _____ _____ _____ _____ _____ _____ _____ *needed (10)*

Population and Sample

The students were selected from a convenience sample of local (Dallas-Fort

Worth) university volunteer BSW, MSW, and PhD students. This is because the study's

focus concerns the teaching of clinical skills to social work students. The students were informed of the study through class announcements, postings, and through the student listserves. Pickup and return boxes were placed in common areas of the Schools of Social Work involved in the study. Interested students were to pick up and return the study materials using these boxes. The first thing listed on the study materials instructions sheet was for the interested students to sign an Institutional Review Board (IRB) approved Informed Consent Form that indicated their participation was strictly voluntary.

Also included in the study materials were a pre-test/post-test, surveys, instructions and a CD/website URL to access the CS-VLE intervention. Students were asked to return the completed study materials by a specific date in order to receive their stipend. It was anticipated that the total time required to for students to complete the research was not more than an hour and a half. Although there were plans made to provide students with pizza if they participated during their lunch break, no students expressed interest in the option, preferring to participate on their own time. The projected target N for the study was calculated to be N=268 (see *Analysis* section).

Procedures

As dictated by the Institutional Review Board standards, students were invited to participate strictly on a volunteer basis. It is not uncommon for some faculty in schools of Social Work to offer extra credit to students for experiencing being a subject in a university research project. Some students received extra credit in this study. Students that received extra credit as a reward (dependent on the student's course instructor) for

their participation were not to be identified by researchers and not treated any differently than any other students participating in the study.

Students were asked to fill out a demographic information form, take the MSDS pre-test, and the Attitude toward Technology survey. They were then given the VLE exercise, and afterwards given the MSDS post-test and the Clinical Skills Survey. The allotted time for participation in the study was set at an hour and 30 minutes in order to allow the students to take the pretest, fill out the surveys, interact with the CS-VLE, and take the posttest (within the time slots that are available between classes or during their lunch break). Students were allowed to end participation in the study at any time.

Validity and Reliability

The relatively quick (approx 1 1/2hr) testing period of the students during the research insures against history and maturation by not giving enough time for history events and maturation to occur. Pre-tests and post-tests records were cross-checked for mortality. All students in the final sample had both pre-test and post-test scores.

Instrumentation reliability of the Attitude Towards Technology scale was confirmed using pre-measured internal consistency reliability Cronbach's Alpha measures (Knezek, Christensen, Miyashita, & Ropp, 2000). Alpha scores were established among four groups of teachers and their students. The teachers and students were divided into the four groups and tested using the Attitude Towards Technology scale on their perceptions of 1) e-mail, 2) the Internet, 3) multimedia, and 4) productivity of technologically enhanced education. Alpha scores among the four groups of teachers ranged from .93 to .96. Alpha scores among the four groups of students ranged from .95 to .98. Alpha scores of over .70 are generally considered adequate (Cohen, 1988).

Testing and instrumentation validity was a threat to validity in the MSDS post-test. In order to prevent against this validity threat, a split-half method was used in the administration of the MSDS post-test and pre-test, meaning the MSDS was split into two parts. One half was administered as the pre-test, the other as the post-test. This prevented the students from seeing the same MSDS video clip twice.

The MSDS pre and post test was the only measure of clinical skills knowledge in the study. Because there was only one measure of the primary variable, there was a method bias in this study. Convenience sampling from only those that had the time to volunteer to participate in the study could create a representational bias from the population. To compensate for this, students were allowed to take the study materials home with them and complete them on their own time.

Because of the take home/on your own time nature of the study, it was a possibility for students to talk and interact while taking the MSDS pre and post-test. Students were asked to abstain from doing this. However since there was no absolutely certain way to prevent this, this was an instrumentation validity threat.

External validity may have been affected by selection bias since all students were from local PhD, MSW and BSW programs. Participation was also based on a volunteer basis and therefore the sample was drawn from those students that have the time and inclination to actually participate in the research. This may be considered a selection bias validity threat even with the option of the students to work on the project on their own time as detailed previously.

Analysis

All hypotheses were tested at the 95% level of significance. A quantitative analysis was performed in this research to determine whether to accept or reject the hypotheses described above. An evaluation of change in pre-test and post-test scores between the comparison group and experimental group was intended to be performed if the final N allowed for it. A simple independent samples t-test was intended to be run for this initial analysis to see if change in scores was significant with Clinical skills knowledge (the change in scores) being the dependent variable (DV) and participation in the CS-VLE being the independent variable (IV). This was not performed since a comparison group was not used in the study. For more elaboration on this, see the *Results* chapter.

Since a convenience sample and not random sampling was used to attain student subjects, there was the possibility of a violation of the normality assumptions of the statistics. A pilot test was run first to determine if there were outliers in increase in clinical skills knowledge scores. It was speculated that if outliers were found, this may constitute a violation of the normality assumptions of the statistical procedures, although, as detailed before, this was not the case.

Additional t-tests were run on those cases that did not complete all phase activities of the CS-VLE or did them out of sequence (Hypothesis 1A & 1B). A correlation analysis was run to determine if there was a significant association between phases completed/correctly sequenced (IVs) and increase in clinical skills knowledge (DV) (Hypothesis 1C).

A statistical power analysis examines the relationships among four variables involved in statistical inference; sample size, significance, effect size, and statistical power (Cohen, 1992). A power analysis was calculated using the A-Priori online power analysis calculator (Soper, 2007). The analysis output a minimal sample size of N=84. The analysis was calculated factoring in the four (4) predictor variables (experiencing the CS-VLE [primary intervention], previous clinical skills experience, previous clinical skills education, and attitude towards technology). The analysis was also calculated using statistical power of .80 and an effect size of .15 at the .05 level of statistical significance. The statistical power of .80 is appropriate for a wide range of behavioral science studies (Green, 1991). Cohen (1992) indicates that an effect size of .15 which was used is considered a medium effect size. Also, the .05 level of statistical significance is also considered a traditional level of significance (Green, 1991).

It was assumed that after the experimental group data was collected, data for a matching comparison group could be collected. Demographic information could be utilized for matching that would allow for a comparison between the two groups. The minimum calculated sample size, plus an equal size comparison group outputs a total needed sample size of 168 (84+84). Therefore, a minimum recruitment of 168 students was attempted, however a group of only 118 students total was attained. Therefore, it was decided that a comparison group would not be utilized in the study.

Protection of Human Subjects

A Protection of Human Subjects approval of this study was attained from the University of Texas at Arlington Institutional Review Board (IRB) before any studies commenced (IRB #07006s). Additional papers were filed for approval of changes made

to the Attitude Toward Technology Scale and Flyers and Listserv announcements. The

IRB approved the modifications under the same protocol. There was no identifying

information at the end of the study that could link the data to any particular student. An

IRB approved Informed Consent Form was distributed to all students to sign before

participating in the study (see *Appendix J Informed Consent Form*).

CHAPTER IV

RESULTS

The purpose of this study was to explore whether social work students could increase their clinical skills knowledge in a Clinical Skills Virtual Learning Environment (CS-VLE). This chapter presents the results of the analysis of the data in reference to the study hypotheses. As mentioned in the discussion of the primary hypothesis, the two main variables of interest in this study concern the student pre-test of clinical skills knowledge (Pre-test MSDS) and the student post-test of clinical skills knowledge (Post-test MSDS). When compared, there was found to be a significant increase in student clinical skills knowledge. An overview of the sample will be presented and discussed. The lack of comparison group and other issues will be discussed followed by a review of the data for each hypothesis.

Overview of the Sample

There were 240 survey packets distributed to students in the study. Of these 118 were fully completed and used in the study (49%). Demographic information revealed that of the 118 student subjects, 102 were female and 16 were male. There were 40 BSW, 62 MSW, and 14 PhD students in the sample (2 students declined to report their program status).

Participation by Gender

Male, 16, 14%

Female, 102, 86%

Participation by Program

Unreported, 2, 2%
PhD, 14, 12%
BSW, 40, 34%
MSW, 62, 52%
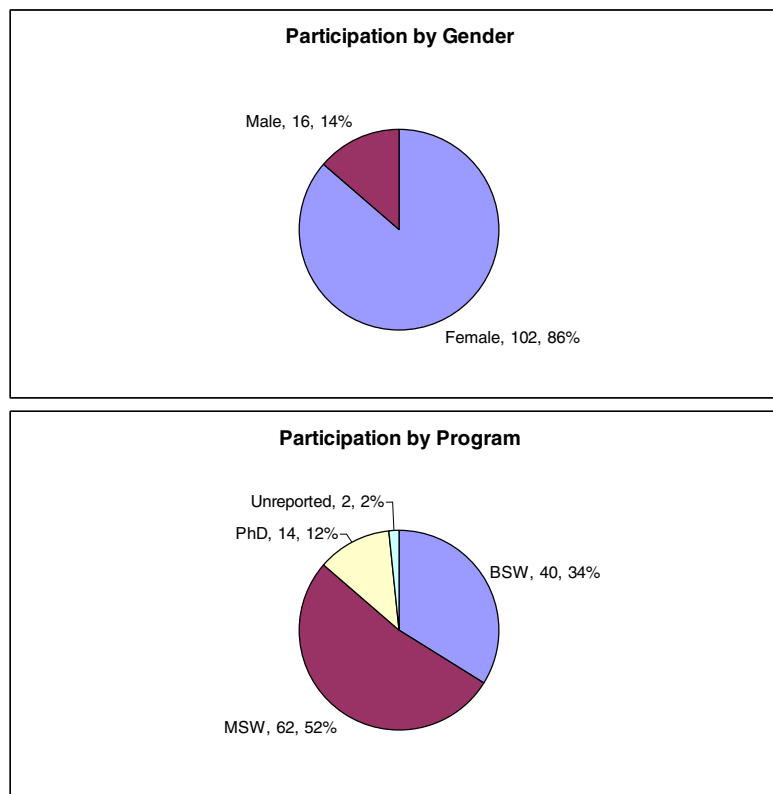
Figure 6: Overview of the Sample

The youngest age reported was 19 and the oldest was 56. The mean age was 31.90 with a standard deviation of 10.04. The lowest number of clinical skills courses taken was reported as 0 while the highest was reported at 15. The mean number of clinical skills courses was 2.69 with a standard deviation of 2.61. The lowest number of years of clinical skills experience was reported as 0 while the highest was reported at 10.

The mean number of years of clinical skills experience was 1.55 with a standard

deviation of 2.09. These demographics are listed in the table below.

Table 7: Student Demographics

Statistics	Lowest Value	Highest Value	Mean	Standard Deviation
Age	19	56	31.90	10.04
Number of Clinical Courses	0	15	2.69	2.61
Years of Experience	0	10	1.55	2.09

Hypothesis 1 Results

Hypothesis 1: Students in the experimental group will have significantly

increased knowledge of clinical skills. This hypothesis was tested by comparing MSDS

pre-test scores to post test scores to measure change in knowledge and determine if there

was an increase. The baseline used in the evaluation of MSDS scores was established by

using the mean MSDS scores from an expert panel. A one-tailed paired T-Test was

performed between MSDS Pre-Test and Post Test scores to test the primary hypothesis.

The T-Test (*t=5.874, p=.000*) indicated there was significant increase in Clinical Skills

Knowledge as shown by increase in post-test scores when compared to pre-test scores.

Cohen's d was calculated (*d=.463*) and indicated a medium effect size (Cohen, 1988).

Therefore, the findings supported the primary hypothesis of this study.

Table 8: MSDS Pre-test / Post-test Range

	Mean	N	Standard Deviation
Pre-test Average	1.641	118	.381
Post-test Average	1.452	118	.306

Table 9: MSDS Pre-test / Post-test T-Test Results

	t	Df	Sig. (one-tailed)
Pre-test Average compared to Post-test Average	1.641	118	.000

A linear regression analysis was performed in order to examine effects of previous education, previous experience and attitude towards technology. The linear regression analysis indicated that a .093 (adjusted R-square) proportion of variance in the difference between pre-test and post-test scores was attributed to previous education, previous experience, and attitude towards technology. The significance of the associated F value (*F=5.010, p=.003*) indicates that the independent variables (previous education, previous experience and attitude towards technology) reliably predict the dependent variable (difference between pre-test and post-test scores). The standardized regression coefficients were found to be significant for education and experience (*β=-.194, p=.033; β=-.253, p=.006*), but not for attitude towards technology (*β=-.107, p=.238*).

Table 10: MSDS Pre-test / Post-test Regression Results

	Beta	t	Sig.
Previous Education	-.194	-2.163	.033
Previous Experience	-.253	-2.782	.006
Attitude Towards Technology	-.107	-1.187	.238
		$R^2 = .116$	
		Adjusted $R^2 = .093$	
		R = .341	

For added additional rigor, a one-tailed partial correlation analysis was run on difference between pre-test and post-test scores while factoring out the effect of each of the contributing variables (previous clinical skills education, previous clinical skills experience, and attitude towards technology). To ensure that that the three variables were

in accordance with the assumptions of normality (i.e. multicollinearity) a factor analysis was performed on the correlations between the three variables. No correlations were over .90 indicating that multicollinearity was not a concern (Tabachnick & Fidell, 1983). Significant correlations were again found between differences between pre-test and post-test scores in the partial correlations of Previous Education (*correlation=.519, p=.000*), Previous Experience (*correlation=.501, p=.000*), and Attitude Towards Technology (*correlation=.484, p=.000*).

Table 11: MSDS Pre-test / Post-test Partial Correlation Results

Contributing Variables	Correlation	Sig.
Previous Education	.519	.000
Previous Experience	.501	.000
Attitude Towards Technology	.484	.000

Sub-hypothesis 1A Results

Hypothesis 1A: The increased knowledge of students that completed all of Kolb's experiential learning phases compared to those that did not will be positive, meaningful and significant. This hypothesis was tested by comparing MSDS pre-test to post test score differences between students that participated in all of the learning phases compared to those that did not. Seventy students completed all phases compared to 48 that did not. An independent samples one tailed t-test was performed to see if there was a significant difference in increase in clinical skills knowledge between students that completed all phases and those that did not (*Students completing all phases: x=0.186, σ=0.333; Students not completing all phases: x=0.194, σ=0.377*). Although the change in pre-test scores compared to post-test scores was in the right direction, the finding were

not meaningful since the analysis ($t=-.118, p=0.453$) indicated that there was not a significant difference. Levene's Test indicated that the two groups did not differ significantly in variance ($F=1.306, p=.255$). Therefore, the findings of the study did not support Hypothesis 1A. It should be noted that Cohen's d was calculated ($d=.021$) and indicated a negligible effect size (Cohen, 1988).

Table 12: Student Complete Participation in Phases Range

	Mean	N	Standard Deviation
Completed all Phases	0.186	70	.333
Did not complete all Phases	0.194	48	.377

Table 13: Student Complete Participation in Phases T-Test Results

	t	df	Sig. (one-tailed)
Completed all Phases compared to Did not Complete all Phases	-.118	116	.453

A more rigorous linear regression analysis was performed in order to control for previous education, previous experience, and attitude towards technology. The linear regression analysis indicated that a .086 (adjusted R-square) proportion of variance in the difference between pre-test and post-test scores was attributed to previous education, previous experience and attitude towards technology. The significance of the associated F value ($F=3.761, p=.007$) indicates that the independent variables (all phases completes, previous education, previous experience and attitude towards technology) reliably predict the dependent variable (difference between pre-test and post-test scores). As indicated in the t-test, the independent variable of completing all phases was found not to be significant ($\beta=-.032, p=.720$). Again, the standardized regression coefficients were found to be significant for previous education and previous experience ($\beta=-.192, p=.035; \beta=-.257, p=.006$), but not for attitude towards technology ($\beta=-.105, p=.245$).

Table 14: Student Complete Participation in Phases Regression Results

	Beta	t	Sig.
Completion of all Phases	-.032	-.360	.720
Previous Education	-.194	-2.163	.033
Previous Experience	-.253	-2.782	.006
Attitude Towards Technology	-.107	-1.187	.238

$R^2 = .117$
Adjusted $R^2 = .086$
R = .343

Sub-hypothesis 1B Results

Hypothesis 1B: Students who progress through the CS-VLE in the order specified by Kolb's four phase cycle of experiential learning will not have a significantly different increase of clinical skills knowledge than those who do not follow Kolb's progression. This hypothesis was tested by comparing MSDS pre-test to post-test score differences between students that participated in all experiential learning phases in the specific order set by the Kolb model compared to students that did not. Only 16 students completed all phases in order compared to 52 that completed all phases but did not complete them in order. An independent samples t-test was performed to see if there was a significant difference in increase in clinical skills knowledge between students that completed all phases and those that did not (*Students completing all phases in order: x=0.370, σ=0.338; Students not completing all phases in order: x=0.147, σ=0.312*). The analysis (*t=-2.451, p=0.01*) indicated there was a significant difference between the clinical skills knowledge of the group of students that completed all phases in order and those that did not. Cohen's d was calculated (*d=.603*) and indicated a medium effect size (Cohen, 1988). Levene's Test (*F=1.324, p=.254*) indicated that the

two groups did not differ significantly in variance. However, because the means of

clinical skills increase indicated that that students that did not complete all phases in

order had a greater increase in clinical skills than those that did not, the results of the

statistical analysis is moot. Therefore, since it was hypothesized that the students that

completed the phases in order would NOT have a significant increase in knowledge, the

findings of the study supported Hypothesis 1B.

Table 15: Student Order of Phase Completion Range

	Mean	N	Standard Deviation
Completed all Phases in Order	0.370	16	.338
Did not complete all Phases in Order	0.147	52	.312

Table 16: Student Order of Phase Completion T-Test Results

	t	df	Sig. (one-tailed)
Completed all Phases in Order compared to Did not Complete all Phases in Order	-.2.45	66	.01

A more rigorous linear regression analysis was performed in order to control for

previous education, previous experience and attitude towards technology.   The linear

regression analysis indicated that a .171 (adjusted R-square) proportion of variance in the

difference between pre-test and post-test scores was attributed to previous education,

previous experience and attitude towards technology. The significance of the associated

F value (*F=4.547, p=.003*) indicates that the independent variables (correct order,

previous education, previous experience and attitude towards technology) reliably predict

the dependent variable (difference between pre-test and post-test scores). As indicated in

the t-test, the independent variables of completing all phases was found to be significant

(*β=.244, p=.033*). Again, the standardized regression coefficients was found to be

significant for previous experience ($\beta=-3.077, p=.003$), but not for previous education

($\beta=-.655, p=.515$) and not for attitude towards technology ($\beta=-1.305, p=.196$).

Table 17: Student Order of Phase Completion Regression Results

	Beta	**t**	**Sig.**
Completion of all Phases in Order	.244	2.184	.033
Previous Education	-.072	-.655	.515
Previous Experience	-.347	-3.077	.003
Attitude Towards Technology	-.148	-1.305	.196

$R^2 = .219$
Adjusted $R^2 = .171$
$R = .468$

Sub-hypothesis 1C Results

Hypothesis 1C: The correlation between the total number of learning

activities completed by students and increase in clinical skills knowledge will be

positive, meaningful and significant. This hypothesis was tested by correlating MSDS

pre-test to post test score differences to the total number of learning activities completed

by students. A bivariate correlation comparing the association between students' pre and

post MSDS score differences and number of phases revealed no significant correlation

(*Pearson Correlation = .071*, *p=.222*). The Pearson Correlation was less than .1

indicating a small effect size (Cohen, 1988), however this may be considered a moot

point since the correlation was not meaningful since the direction of the correlation was

in the opposite direction as predicted by the hypothesis. This indicated that as the

number of phases increased, the level of knowledge decreased (lower MSDS pre-post

difference scores indicate increase in knowledge). Therefore, the findings of the study

did not support Hypothesis 1C.

Table 18: Student Participation in Number of Phases Correlation Analysis

		Pre-Post Difference	Number of Phases Completed
Pre-Post Difference	Pearson Correlation	1	.071
	Sig. (1-tailed)		.222
	N	118	118
Number of Phases Completed	Pearson Correlation	.071	1
	Sig. (1-tailed)	.222	
	N	118	118

A more rigorous linear regression analysis was performed in order to control for previous education, previous experience and attitude towards technology.   The linear regression analysis indicated that a .086 (adjusted R-square) proportion of variance in the difference between pre-test and post-test scores was attributed to previous education, previous experience and attitude towards technology. The significance of the associated F value (*F=3.763, p=.007*) indicates that the independent variables (number of phases, previous education, previous experience and attitude towards technology) reliably predict the dependent variable (difference between pre-test and post-test scores). As indicated in the t-test, the independent variable of number of phases was found not to be significant (*β=.033, p=.712*). Again, the standardized regression coefficients was found to be significant for previous education and previous experience (*β=-.193, p=.034; β=-.249, p=.008*) and not for attitude towards technology (*β=-.107, p=.238*).

Table 19: Student Participation in Number of Phases Regression Results

	Beta	**t**	**Sig.**
Number of Phases Completed	.033	.370	.712
Previous Education	-.193	-2.150	.034
Previous Experience	-.249	-2.698	.008
Attitude Towards Technology	-.107	-1.185	.238

$$R^2 = .118$$
$$\text{Adjusted } R^2 = .086$$
$$R = .343$$

Secondary Hypothesis Results

The secondary hypothesis studied in this research project is that **Hypothesis 2: Students attitude towards technology will be positively correlated with increase in clinical skills knowledge.** This hypothesis was tested by correlating measured increase in clinical skills knowledge with attitude towards technology to determine if the correlation was significant. A bivariate correlation comparing the change between students pre and post MSDS scores and attitude toward technology (ATS) scores revealed no significant correlation (Pearson Correlation = -.043, *p=.321*). Therefore, the findings of the study did not support Hypothesis 2. It is important to note that Pearson Correlation was between 0 and -.1 indicating a small effect size (Cohen, 1988). However, the correlation in *Table 11* indicates a correlation of .484. The square of .484 (an effect size), is 0.224.

Table 20: Student Attitude towards Technology Correlation

		Pre-Post Difference	ATS Average
Pre-Post Difference	Pearson Correlation	1	-.043
	Sig. (1-tailed)		.321
	N	118	118
Attitude towards Technology Average	Pearson Correlation	-.043	1
	Sig. (1-tailed)	.321	
	N	118	118

A linear regression analysis had previously been performed in order to examine effects of previous education and previous experience (See *Table 10*).

CHAPTER V

DISCUSSION AND CONCLUSION

This chapter discusses the findings of the study in relation to the original research questions. The findings also reviews limitations of the results and critiques the framework used for this study. The chapter also discusses the implications of the results of this study and how it may have an impact on educational policy and practice in schools of social work. This is followed by suggestions for future research.

Discussion of Research Questions

The original research questions of the study are listed below followed by discussion. The main research question of this study is as follows: **Can social work students increase their clinical skills knowledge in a Clinical Skills Virtual Learning Environment (CS-VLE)?**

As described previously learning clinical skills is a multi-step process (Ivey & Authier, 1978). The first step involves the learning of basic concepts and techniques in order, among other reasons, to be able to identify them. The study attempted to answer the research question by operationalizing increase in clinical skills knowledge as an increase in an ability to identify clinical skills. This increase in clinical skills knowledge was determined by examining MSDS scores before and after exposure to the CS-VLE.

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The t-test analysis did find that the CS-VLE had a significant effect on MSDS scores ($t=1.708, p=.045$).   There was an average increase in knowledge indicated by post-test scores compared to pre-test scores ($x = .199$).

The sub-hypothesis of the study based on related issues concerning the completing of all phases and number of phases completed in the experiential learning process had results that did not support the associated hypotheses. There was not a significant increase in clinical skills knowledge in those students that completed all four phase exercises compared to those who did not. Number of phases completed was found to be non-significant in terms of effect on MSDS scores.

Although the results of the primary hypothesis seem to support Kolb's theory on experiential learning environments, two of the results of the sub-hypotheses and the results of the secondary hypothesis seem to contradict Kolb's hypothesis and/or related hypothesis. Possible reasons for the outcomes of the results of the study based on the sub-hypothesis may include; construction of the exercises relating to each of Kolb's phases, time spent by students on each phase, and current research on the order of Kolb's phases.

Construction of the exercises.

As detailed previously, the activities used within the CS-VLE were developed using descriptions of activities found in the literature as a model. The descriptions were used as a model for development since there is no scale of measurement for level of phase completion. These descriptions were found in research on Kolb-based experiential learning in social work (Askeland, 2003; Gibbons & Gray, 2000; Goldstein, 2001). As noted previously, the activities used in the CS-VLE were not developed in the exact same

way as the activities described in the literature due to the limitations of an asynchronous web-based environment; (a) Observing role plays (Goldstein, 2001) in a video clip as opposed to participating in role plays (Askeland, 2003); (b) Having feedback and discussion (Goldstein, 2001; Askeland, 2003) provided through text and audio clips as opposed to F2F feedback and discussion; (c) Having self reflection (Goldstein, 2001; Askeland, 2003) being prompted through text instructions as opposed to being prompted by a facilitator; (d) Using text, audio, video clips, and the clinical skills identification exercise to allow the student to synthesize and apply various clinical skills (Goldstein, 2001; Askeland, 2003) as opposed to use F2F teaching and role plays to allow the student to synthesize and apply what has been learned.

Of these online phase exercises, the one that seems to be furthest departed from the F2F method is number 4. Although recognition of clinical skills could be considered an active method of learning, it can be argued that it does not match up with more rich active experimental activities such as demonstrating and experiencing clinical skills utilizing role plays and simulations as done in the F2F learning environments. Ways of further developing these activities that would be more in line with the descriptions of the activities found within the literature will be discussed in the *Implications for Future Research* section.

Time spent by students on each phase.

Another factor that may help to explain why the results of three sub-hypotheses seem to contradict Kolb's hypothesis and/or related hypothesis is the disproportionate amount of time students spent with each phase activity. Although no mention of activity time requirements was mentioned in the literature (Askeland, 2003; Gibbons & Gray,

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2000; Goldstein, 2001), it is important to note that the Concrete Experience phase

(viewing of video clips of clinical skills role plays) activity required the highest amount

of student time (*8:16 minutes*) which may have been too long a period of time. Students

participating in the Concrete Experience phase activity (*n=86*) had a lower mean increase

in Clinical Skills Knowledge as shown by increase in post-test scores when compared to

pre-test scores than those that did not participate *(n=32)* in the Concrete Experience

phase exercise (*x =.1792; x=.2173*). It is important to note that the differences were not

found to be statistically significant. Ways of further developing the time levels students

spend on each phase activity will be discussed in the *Implications for Future Research*

section.

The order of Kolb's phases.

The study found that there was not a significant difference in increase in clinical

skills knowledge based on whether the students completed the phase exercises in the

order set forth by Kolb (1984). This was in line to the literature review article that

theorized that the order of completion of Kolb's phases may not make a difference in

overall learning (Smith, 2001). It is speculated that because there was only one article

(Smith, 2001) found in the literature review that refuted the notion that Kolb's order

(Kolb, 1984) was not a necessary component to learning, that more studies may have to

be done that are focused on whether the order of completion of Kolb's phases has any

significant effect on overall learning for further support of the notion.

The secondary research question of his study was: **Are students' attitudes**

towards technology positively correlated with students' increase of their clinical

skills knowledge. A Pearson correlation was performed comparing Attitude towards

Technology scores to increase in MSDS scores. The results were found to be non-significant (*Pearson Correlation = -.043, p=.321).* Overall, student's Attitude Towards Technology score was somewhat negative (*x=3.01* [on a 7 point negative to positive semantic differential scale]) where a score of 4 would have been a perfectly neutral score for each technical concept presented. The score was calculated by averaging the scores for each concept (See *Appendix A Clinical Skills Survey*). Scores that needed to be reversed were coded appropriately before mean scores were taken. Then, mean scores for each term were averaged to get a final Attitude towards Technology score. It could be stated that these results are not surprising since the Pearson's Correlation was negative (which was the correct direction for the hypothesized correlation) and was low (between .1/-.1). It is speculated that if the N were to be increased and higher statistical power for the analysis were attained, the significance results may be different. The implications of the low N will be discussed in the next section, *Limitations of the Study*.

Although this finding contradicts the themes found within the literature review, it is again noted that there were only a few articles article found in the literature review concerning the relationship between attitude towards technology and performance in web delivered teaching environments (Valenta, Therriault, Dieter & Mrtek, 2001). Therefore it is speculated that more studies may have to be done that are focused on whether attitude towards technology has any significant effect on overall learning in web delivered teaching environments.

Limitations of the Study

Based on the results of this study, it would seem that the CS-VLE was effective in increasing clinical skills knowledge. However, it must be kept in mind that the results for

the study were attained in a study with other limitations. Primarily, the lack of a comparison group.

Influence of a lack of a comparison group.

While a lower N was anticipated for the experimental group of the study (84) and the use of a comparison group was anticipated, there was a benefit of a higher N of 118 for the experimental group. Another power analysis using the A-Priori power analysis online calculator indicated that power, originally calculated at a level of .80 was increased to (.93) due to the higher N attained in the study.

Because a comparison group could not be attained for the study, this study sacrificed the use of a comparison group for increased power in the experimental group analysis. The purpose of a comparison group is to create a baseline group that received no intervention to compare to the experimental group to further insure that results were not related to chance or other variables outside the control of the study (Rubin & Babbie, 2004). The lack of comparison group for the study should also be taken into consideration when interpreting the results of the study.

Other limitations.

As noted previously, the CS-VLE phase exercises were developed using descriptions of activities found in the literature as a model. The descriptions were used as a model for development since there is no scale of measurement for level of phase completion. The model presented has the limitation of experiential learning not fully being addressed and that portions of the model are more accurately based on learning through different kinds of recognition learning rather than experiential learning which

normally includes learning by 'doing' (i.e. practicing skills, getting feedback, and improving skills.) This, was particularly notable in the phase of active experimentation.

The study was not able to accurately show equivalence to previous F2F uses of the experiential learning model in clinical skills education. These limitations were partially based on the asynchronous limitations of the CS-VLE. These limitations may have impacted the hypotheses (1A & 1C) relating to Kolb's theory and may account for the lack of significance in the statistical analysis.

Another possible limitation of the study was the ability of the student to select options within the CS-VLE at their prerogative. That is, not all students received the exact same intervention. This is not unusual in behavioral science studies. An example would be something like having clients see different therapists; each using a variant of a clinical intervention, and then attempting to compare them, assuming that all subjects received the same intervention.

Implications

What is relevant is that the analysis concerning the primary hypothesis did indicate that students can increase their knowledge of clinical skills in a CS-VLE. The rationale for testing this hypothesis stemmed from the theme found in the literature review that students cannot learn clinical skills in web-based environments.

As noted previously in the chapter, learning clinical skills is a multi-step process (Ivey & Authier, 1978). The first step involves the learning of basic concepts and techniques in order, among other reasons, to be able to identify them. The finding that students were able to increase their ability to identify clinical skills in an online learning environment can act as an initial step in refuting the notion that students cannot learn

about clinical skills in web-based environments. This opens the door for further research to confirm or disprove the suggested conclusions based on this study.

Implications for social work practice and policy.

Also noted earlier, there exists a sentiment of doubt in the social work profession over the effectiveness of using web based learning environments to teach social work; in particular clinical skills. (Jerry & Collins; Moore; Seabury and Maple; Siegel and Jennings; Conklin, Napoletano, & Shelly)   The CS-VLE was developed in part to evaluate the accuracy of this sentiment.

As stated earlier, one of the advantages of Web-based Social Work programs is that they allow those that live in disparate and rural areas to continue to live in those areas, and thus serve clients in the same disparate and rural areas in which they reside. The finding that students were able to increase their ability to identify clinical skills due to learning obtained by participating in an online learning environment may help in the development of new policies in schools of Social Work to help develop online options for students that may have boundaries to a traditional social work education.

The features of the CS-VLE; the ability to show almost any type of audio, text, and interactive video content allow the CS-VLE to be used for numerous learning activities (using Kolb's model as a framework or not).   The CS-VLE can also be coupled with other technologies (i.e. telephone, video conferencing, chat rooms, etc...) to create a synchronous learning environment. This could increase the amount of interaction students could experience with other students and instructors.

It is also important to mention some of the features of the CS-VLE not used in this study, but that still may be incorporated into future courses in some way. A primary

feature is the ability of the CS-VLE to track not only the exercises used by each student, but how long each student participated in these activities. It is a feature such as this that could help an instructor insure that students have been participating in activities for a specific amount of time. These types of features may have implications for more specific CSWE policies concerning monitoring time of student participation in social work distance education programs that have a web-based component.

It is also important to note that much of the research noted in the literature review that pertained to Web-based social work education was not only specific to students in schools of Social Work, but also to social workers practicing in the field. This leads to the implication that Web-based education methods, such as the CS-VLE can also be used to train/education social workers currently practicing in the field.

Implications for future research.

There are several other possible studies that may build upon this current study due to two of the primary weaknesses of this study, as noted previously; the lack of a comparison group. Although for this study, this must be taken into consideration when interpreting the results, for future studies it allows for an opportunity to add to create similar studies that have a comparison group and an experimental group with an N that provides optimal statistical structure and power.

As noted earlier, overall student knowledge of clinical skills was increased (Primary Hypothesis), but the study did not support the hypotheses related to Kolb's experiential learning framework (Hypotheses 1A and 1C). This can be partly attributed to the modification of the phase exercises within the CS-VLE to accommodate working within an asynchronous online environment. Future studies could address this if the

online environments being utilized were synchronous environments as proposed previously. This would entail allowing students to have instructor/fellow student feedback provided via chat rooms, teleconferencing, and/or over the phone while working in the CS-VLE. If videoconferencing or other video capture technologies were used on the students end to allow for the students to submit or perform role play type activities in order to demonstrate their understanding of clinical skills, this would also address the concerns mentioned previously about not utilizing active experimental phase exercises to the extent used in F2F environments.

The other characteristic of the phase exercises used in the CS-VLE that the non-support of Hypotheses 1A and 1C was attributed to was the inconsistency in time spent in each phase by the students. In order to minimize possible correlations between time in phase with increase in clinical skills knowledge, phases should be set up so that time spent in each phase do not differ significantly from phase to phase. This could be accommodated in future studies by creating ways of ensuring that students participate in each phase for at least a set minimum and maximum amount of time.

This study was a study to explore the effectiveness of a web-based learning environment for learning clinical skills. This study focused on the increase of students' ability to identify clinical skills; the first component of learning clinical skills (Ivey & Authier, 1978). Another realm of future studies lies in reproducing this study with a different type of scale to measure the other components of clinical skills (Ivey & Authier, 1978). Possible studies include those in which students would demonstrate skills; another component of learning clinical skills (Ivey and Authier, 1978). This could entail having students view various techniques demonstrated and explained in the CS-VLE and

then videotape themselves demonstrating those same skills in a scripted scenario. These videotapes would then be reviewed and critiqued by instructors. This future study would attempt to support the idea that it is possible for student to learn additional components of clinical skills in online learning environments. This would allow for the additional components of learning clinical skills (Ivey & Authier, 1978) to be presented in online environments. Students could again be tested to determine the effectiveness of the learning environment and the results could be added to this body of research. This additional research would further help refute the themes found within the literature review about the skepticism of clinical skills being able to be effectively taught through web-based environments.

There is also potential for future studies that could build on this study that are related to the alternative theories and literature of student learning (aside from experiential learning theory). One possible study involves analyzing the scores of the clinical skills identification video game, captured by the CS-VLE but not used in this study, and determining if they are correlated with increase in learning of clinical skills. This future study would stem from the literature involving education through video game play (Kiili, 2005).

Conclusion

Although experiential learning is hailed as an optimal educational framework for social work education, it is not commonly utilized when teaching clinical skills in schools of social work (Goldstein, 2001). Traditional techniques, such as lecture are more commonly used. As the need for distance education, and in particular web-based

education grows, there definitively is the need for solid methods and research for presenting social work content to students in web-based environments (Abels, 2005).

In addition, there is a sentiment of doubt in social work academia concerning the effectiveness of web-based environments to teach of clinical skills. The findings of this study indicate a significant increase in clinical skills knowledge when using a web-based environment to teach clinical skills. These findings and the other proposed future studies may act as a step towards the objective of finding new ways of presenting social work content to students and further indicating that web-based environments can be effective environments to teach clinical skills.

APPENDIX A

CLINICAL SKILLS SURVEY

For the purpose of this research, clinical skills are defined as the attending behaviors used with a client during a counseling sessions (a session concerned with helping people become more competent in their own lives) to optimize the effectiveness of the session (i.e. Eye contact, body language, and tone).

Clinical Skills History

Please indicate the number of courses you have taken that have focused on teaching you

clinical skills. _____

Please indicate the number of years you have worked, were interned/field placed or

volunteered in a position in which you had to mainly utilize clinical skills. _____

(Use fractions if necessary. If you worked in a position in which clinical skills were only

used half the time, count that as one half.

APPENDIX B

ATTITUDE TOWARDS TECHNOLOGY SURVEY

Instructions to Students: Place an 'X' between each adjective pair to indicate how you feel about the object.

To me, computer video clips that demonstrate skills are:
1. important   ____ ____ ____ ____ ____ ____ ____ unimportant (1)
2. boring   ____ ____ ____ ____ ____ ____ ____ interesting (2)
3. relevant   ____ ____ ____ ____ ____ ____ ____ irrelevant (3)
4. exciting   ____ ____ ____ ____ ____ ____ ____ unexciting (4)
5. means nothing   ____ ____ ____ ____ ____ ____ ____ means a lot (5)
6. appealing   ____ ____ ____ ____ ____ ____ ____ unappealing (6)
7. fascinating   ____ ____ ____ ____ ____ ____ ____ mundane (7)
8. worthless   ____ ____ ____ ____ ____ ____ ____ valuable (8)
9. involving   ____ ____ ____ ____ ____ ____ ____ uninvolving (9)
10. not needed   ____ ____ ____ ____ ____ ____ ____ needed (10)

To me, computer video clips that explain skills are:
1. important   ____ ____ ____ ____ ____ ____ ____ unimportant (1)
2. boring   ____ ____ ____ ____ ____ ____ ____ interesting (2)
3. relevant   ____ ____ ____ ____ ____ ____ ____ irrelevant (3)
4. exciting   ____ ____ ____ ____ ____ ____ ____ unexciting (4)
5. means nothing   ____ ____ ____ ____ ____ ____ ____ means a lot (5)
6. appealing   ____ ____ ____ ____ ____ ____ ____ unappealing (6)
7. fascinating   ____ ____ ____ ____ ____ ____ ____ mundane (7)
8. worthless   ____ ____ ____ ____ ____ ____ ____ valuable (8)
9. involving   ____ ____ ____ ____ ____ ____ ____ uninvolving (9)
10. not needed   ____ ____ ____ ____ ____ ____ ____ needed (10)

To me, audio clips of instructors speaking about skills are:
1. important   ____ ____ ____ ____ ____ ____ ____ unimportant (1)
2. boring   ____ ____ ____ ____ ____ ____ ____ interesting (2)
3. relevant   ____ ____ ____ ____ ____ ____ ____ irrelevant (3)
4. exciting   ____ ____ ____ ____ ____ ____ ____ unexciting (4)
5. means nothing   ____ ____ ____ ____ ____ ____ ____ means a lot (5)
6. appealing   ____ ____ ____ ____ ____ ____ ____ unappealing (6)
7. fascinating   ____ ____ ____ ____ ____ ____ ____ mundane (7)
8. worthless   ____ ____ ____ ____ ____ ____ ____ valuable (8)
9. involving   ____ ____ ____ ____ ____ ____ ____ uninvolving (9)
10. not needed   ____ ____ ____ ____ ____ ____ ____ needed (10)

To me, feedback from other students is:

1. important	_____	_____	_____	_____	_____	_____	_____ unimportant (1)
2. boring	_____	_____	_____	_____	_____	_____	_____ interesting (2)
3. relevant	_____	_____	_____	_____	_____	_____	_____ irrelevant (3)
4. exciting	_____	_____	_____	_____	_____	_____	_____ unexciting (4)
5. means nothing	_____	_____	_____	_____	_____	_____	_____ means a lot (5)
6. appealing	_____	_____	_____	_____	_____	_____	_____ unappealing (6)
7. fascinating	_____	_____	_____	_____	_____	_____	_____ mundane (7)
8. worthless	_____	_____	_____	_____	_____	_____	_____ valuable (8)
9. involving	_____	_____	_____	_____	_____	_____	_____ uninvolving (9)
10. not needed	_____	_____	_____	_____	_____	_____	_____ needed (10)

To me, being able to give feedback to other students is:

1. important	_____	_____	_____	_____	_____	_____	_____ unimportant (1)
2. boring	_____	_____	_____	_____	_____	_____	_____ interesting (2)
3. relevant	_____	_____	_____	_____	_____	_____	_____ irrelevant (3)
4. exciting	_____	_____	_____	_____	_____	_____	_____ unexciting (4)
5. means nothing	_____	_____	_____	_____	_____	_____	_____ means a lot (5)
6. appealing	_____	_____	_____	_____	_____	_____	_____ unappealing (6)
7. fascinating	_____	_____	_____	_____	_____	_____	_____ mundane (7)
8. worthless	_____	_____	_____	_____	_____	_____	_____ valuable (8)
9. involving	_____	_____	_____	_____	_____	_____	_____ uninvolving (9)
10. not needed	_____	_____	_____	_____	_____	_____	_____ needed (10)

To me, textbook excerpts are:

1. important	_____	_____	_____	_____	_____	_____	_____ unimportant (1)
2. boring	_____	_____	_____	_____	_____	_____	_____ interesting (2)
3. relevant	_____	_____	_____	_____	_____	_____	_____ irrelevant (3)
4. exciting	_____	_____	_____	_____	_____	_____	_____ unexciting (4)
5. means nothing	_____	_____	_____	_____	_____	_____	_____ means a lot (5)
6. appealing	_____	_____	_____	_____	_____	_____	_____ unappealing (6)
7. fascinating	_____	_____	_____	_____	_____	_____	_____ mundane (7)
8. worthless	_____	_____	_____	_____	_____	_____	_____ valuable (8)
9. involving	_____	_____	_____	_____	_____	_____	_____ uninvolving (9)
10. not needed	_____	_____	_____	_____	_____	_____	_____ needed (10)

To me, lists of skill definitions are:
1. important _____ _____ _____ _____ _____ _____ _____ unimportant (1)
2. boring _____ _____ _____ _____ _____ _____ _____ interesting (2)
3. relevant _____ _____ _____ _____ _____ _____ _____ irrelevant (3)
4. exciting _____ _____ _____ _____ _____ _____ _____ unexciting (4)
5. means nothing _____ _____ _____ _____ _____ _____ _____ means a lot (5)
6. appealing _____ _____ _____ _____ _____ _____ _____ unappealing (6)
7. fascinating _____ _____ _____ _____ _____ _____ _____ mundane (7)
8. worthless _____ _____ _____ _____ _____ _____ _____ valuable (8)
9. involving _____ _____ _____ _____ _____ _____ _____ uninvolving (9)
10. not needed _____ _____ _____ _____ _____ _____ _____ needed (10)

To me, prompts for personal reflection on subject matter are:
1. important _____ _____ _____ _____ _____ _____ _____ unimportant (1)
2. boring _____ _____ _____ _____ _____ _____ _____ interesting (2)
3. relevant _____ _____ _____ _____ _____ _____ _____ irrelevant (3)
4. exciting _____ _____ _____ _____ _____ _____ _____ unexciting (4)
5. means nothing _____ _____ _____ _____ _____ _____ _____ means a lot (5)
6. appealing _____ _____ _____ _____ _____ _____ _____ unappealing (6)
7. fascinating _____ _____ _____ _____ _____ _____ _____ mundane (7)
8. worthless _____ _____ _____ _____ _____ _____ _____ valuable (8)
9. involving _____ _____ _____ _____ _____ _____ _____ uninvolving (9)
10. not needed _____ _____ _____ _____ _____ _____ _____ needed (10)

To me, skill identification games are:
1. important _____ _____ _____ _____ _____ _____ _____ unimportant (1)
2. boring _____ _____ _____ _____ _____ _____ _____ interesting (2)
3. relevant _____ _____ _____ _____ _____ _____ _____ irrelevant (3)
4. exciting _____ _____ _____ _____ _____ _____ _____ unexciting (4)
5. means nothing _____ _____ _____ _____ _____ _____ _____ means a lot (5)
6. appealing _____ _____ _____ _____ _____ _____ _____ unappealing (6)
7. fascinating _____ _____ _____ _____ _____ _____ _____ mundane (7)
8. worthless _____ _____ _____ _____ _____ _____ _____ valuable (8)
9. involving _____ _____ _____ _____ _____ _____ _____ uninvolving (9)
10. not needed _____ _____ _____ _____ _____ _____ _____ needed (10)

APPENDIX C

MICROCOUNSELING SKILL DISCRIMINATION SCALE

Microcounseling Skill Discrimination Scale (Transcript Version)

By D. Y. Lee, Allen E. Ivey and Richard Haase

The following is a transcript of forty-four video clips representing a counselor demonstrating two clinical skills; Reflection of feeling and Paraphrasing.   Students are to watch each video clip and rate the quality/effectiveness of the counselor's response on a seven-point continuum (see response sheets on page 9).

REFLECTION OF FEELING SEGMENTS
C = Client
H = Helper

C: I know that the chances for the poor are very slim, and I want to get into something that will be a benefit to me and a credit to my own people. I'm not much of a classroom boy, and I want to know what. . . .what steps to take to prepare myself. My father is a minister, and I've been in the ministry for quite a few years. . . . If I can't be a good minister I don't want to be one at all. And yet I don't want to spend my life under the foot of somebody. H: You feel that you should plan for a future that really gives you a lot of satisfaction and sense of contribution.
C: I think I'm going to have to drop out of school. I can't go on any more. It's been bad since my mother died last spring. There's just no need to continue having to put out the money any more. H: You feel school is a pretty dull place. This may be true for many people.
C: I tried to be nice to my stepfather even if he does hate me. I try to be nice to him. It doesn't sink through his head. Like last night, I had a buddy over to the house. He didn't like my buddy. He was just hanging around watching TV, so he told me to go outside. He didn't want me to go back in. H: You're terribly upset, confused, and disappointed. You wonder whether you're an important person to him.
C: So, like I said, he did go a little too far. I don't think he's basically a bad person. My mother always used to say that men would go as far as you'd let them, and I realize it was partly my fault too. If I had been surer of myself and told him to stop, he would have stopped. I don't understand why I didn't stop him. H: Carol, you feel right now you're responsible, and you regret what happened. You're bewildered, curious, and somewhat confused too.
C: I really don't know what's wrong with me recently. I can't seem to concentrate on my courses or anything. . . . and it's getting worse and worse. I'm falling further and further behind, and I just can't get caught up. And then I seem to fly off the handle. Why, just last

weekend while I was home, my sister and I had a real battle. I don't know what my trouble is.

H: You feel you can do the work if only you'd try harder. . . .Perhaps you know you shouldn't be a "loser" in this world of competition, but the fact that your grades are going down makes you more nervous.

C: I really like this guy an awful lot, and I've dated him five times. But. . .well. . .the trouble is he is Black. If my parents ever found out, it would be like a bomb explosion. They would pull me immediately out of school too.

H: Carol, you're wondering which way you should go. It seems to be a choice between your boyfriend and your parents.

C: (Shouting and pointing finger toward the helper) You use me just like all of the rest. You're just like the rest-you want something from me. That's all . . . I know what I'll do. I'll fail you. I'll lead you astray. You'll think I'm improving, but I'll fail. 1'11 be your failure case. You will be responsible.

H: I sense you question the whole experience and all of my motives. Right now you're angry at me.

C: I try to be nice to her. As I say, we have been roommates for six months, and we will be roommates for another two months, but . . .but as I say, she's awfully inconsiderate. . . .I just think a lot of what she does is on purpose, too. . .just to see what I'll do about it. I'm getting too upset.

H: I hear you saying, Carol, you try awfully hard to get along, but nothing happens. You're really upset and troubled about it.

C: Well, I guess I *need* to be here. I don't know who else I could talk to about this. I feel awful, and I don't care if I die. My parents can't know, and I hope I never see Don again. . .*ever*! He was my boyfriend for two years, but I just don't care about it.

H: Carol, I sense you're terribly u p set, depressed, and angry at Don. Many things are boiling up in-, side you right now.

C: It bothers me a lot. I don't think Cathy really loves me. I just don't think I'm important to her. She never tries to really understand how I feel about anything.

H: Cathy really bugs you, and you'd like to get back at her. . . .Perhaps you feel miserable because you have resentment against her but are unable to get back at her.

C: Well, you see, my parents met at King's College, and they've always had it in mind that I should go there. But. . .but I would rather. . . .

H: You know that King's College is a good school, but you don't want to be pushed away by your parents.

C: I just get so mad at my supervisor . . . . He's just a bunch of old sour grapes. Every time I come up with a creative idea, he knocks me down.

H: Your supervisor is sometimes hard to work with. . .and, perhaps. . .it could also be true

that you get angry at a lot of people, especially people in authority.
C: Well, Mrs. Smith sent me over here from the School of Music, and she said that I don't have the musical ability to keep on in the Music School. And she wants to know exactly what I'm suited for, but I know I'm. . . (pause). . .I know I still love music. But anyway she wants to be satisfied. H: You'd like to satisfy Mrs. Smith that music is a good field for you. Perhaps she thinks music is not for everybody.
C: So I did finally go to the doctor. And he said yes, I do need to have an operation. A major one, and right away. But I just can't! Since Jim and I are both in school now, there just isn't any money. And the baby is just five months. I'm awfully afraid, too. H: You feel helpless, and scared. . . . and you're at a loss what to do. At this moment, you feel there isn't any way out.
C: Well, (clears throat) I don't know how exactly to get started, but . . . .and my particular problem would be with my mother, and I . . . .well. . . .I'd like to be able to do something about it before I go home. I don't know how I can explain it, so maybe if you can . . . . I could start. . . (pause) . . . I don't know where to start. I mean. . . . H: A lot of things are going on right now. It's very difficult to get it out.
C: Well, (sigh) I don't know. I'm sort of mixed up right now. I have been pre-med. And, well, I'm a senior now, but I have next year also, I've 19 hours to take, still, and I'm not sure now whether I want to become a doctor or not. I haven't been refused yet and I haven't been accepted either. And, well, I'm not sure in my own mind whether medicine would be the best thing for me. H: I hear you saying, Dick, you're pretty confused about medicine as a future. A lot is going on right now.
C: There's something about this town. It's an awfully cold town. Northerners are so blasted. . .uh . . .indifferent. Oh I don't know, they're certainly not very warm or easy to know. I've been here since last summer, and I swear I don't know anybody at all. H: Northerners are really hostile to you, and they make you plenty angry. You seem to be raising a lot of questions about their customs and general ways of living.
C: I just can't wait to get out of school . . . I'm so excited, I just want to get out and get started on my career. I know I'm going places! H: School is a real drag. You're bored and inefficient here. For many people, it may be painful to accept this, but I guess this is true.
C: Henry loves me very much I think. You see the problem between us is really quite simple. I don't love him. I only married him because I was supposed to marry. All my friends were getting married. I never felt any attraction. . . that is, I never found him attractive to me. Thank God we never had kids. H: In some ways, you feel fond of and care for Henry. I suppose marital love is much more complicated than it appears to be. . . What I mean is. . .what I mean is that it could

change. . .it's a kind of dynamic thing.
C: (In angry tone) We can't watch TV. She took a tube out so we couldn't watch it. When she wants to watch, she puts the tube back and makes sure we are all in bed before she watches it. H: You like TV, especially the programs you miss.
C: Most of my problems started when I was at home because of my stepfather. He doesn't like us kids because he thinks we are higher class than he is. All he does is drink and drive around. He likes to kick us and beat us, and when we ask him for help, he turns his nose up. He doesn't want to talk to us. . . .We don't have anybody to talk to. . . like a real father around the house. H: You really care deeply for your stepfather, even though you wouldn't say this. Perhaps you might have a deep sympathy for him.
C: I thought maybe I could iron some of the wrinkles out. I'm always worrying about something -not big things, just little things. I can't get over the feeling that people are watching me. The way I worry about personal things and other things. . .When I see an ad in the paper, I worry about the things discussed in it although I know they aren't true. H: I get several feelings from you, Dick. One is that you worry a good deal about unnecessary things, at the same time, the other is that you're concerned more about what you see as unnecessary worries.

PARAPHRASING SEGMENTS
C = Client
H = Helper

C: Most of my problems started when I was at home because of my stepfather. He doesn't like us kids because he thinks we are higher class than he is. All he does is drink and drive around. He likes to kick us and beat us, and when we ask him for help, he turns his nose up. He doesn't want to talk to us. . . .We don't have anybody to talk to. . . .like a real father around the house. H: Your stepfather wasn't there to talk to. I sense you want someone to listen to your problem, Dick.
C: I just get so mad at my supervisor . . .He's just a bunch of old sour grapes. Every time I come up with a creative idea, he knocks me down. H: Oh, creative ideas! It's very important for job performance.
C: Well, Mrs. Smith sent me over here from the School of Music, and she said that I don't have the musical ability to keep on in the Music School. And she wants to know exactly what I'm suited for, but I know I'm. . .(pause). . .I know I still love music. But anyway she wants to be satisfied. H: I hear you saying, Carol, your choice is to stay in music. A teacher has questioned your ability, and you're here because of her.
C: So, like I said, he did go a little too far. I don't think he's basically a bad person. My mother always used to say that men would go as far as you'd let them, and I realize it was partly my fault too. If I had been surer of myself and told him to stop, he would have stopped. I don't understand why I didn't stop him. H: I hear you saying, Carol, you helped to create the situation for the excessive lovemaking but still can't understand why you didn't do more to change it.
C: (In angry tone) We can't watch TV. She took the tube out so we couldn't watch it. When she wants to watch, she puts the tube back and makes sure we are all in bed before she watches it. H: Watching TV with the tube gone does present a problem. Perhaps she had a bit of trouble with the tube in the past.
C: Well, I guess I need to be here. I don't know who else I could talk to about this. I feel awful, and I don't care if I die. My parents can't know, and I hope I never see Don again-ever! He was my boyfriend for two years, but I just don't care about it. H: I hear you saying, Carol, that you have been going out with him for two years, but recently some things happened between you two which got you into a nightmare mess. . . .And yet, your relationship is not making any improvement.
C: I just can't wait to get out of school. . .I'm so excited, I just want to get out and get started on my career. I know I'm going places!

H: As I experience you, Dick, you see yourself as ready to get out and get started. You know you're heading for the top1
C: I tried to be nice to my step father even if he does hate me. I try to be nice to him. It doesn't sink through his head. Like last night, I had a buddy over to the house. He didn't like my buddy. He was just hanging around watching TV, so he told me to go outside. He didn't want me to go back in. H: Nothing you do works. He seems to be the same, no matter what you do.
C: Henry loves me very much I think. You see the problem between us is really quite simple. I don't love him. I only married him because I was supposed to marry. All my friends were getting married. I never felt any attraction. . .that is, I never found him attractive to me. Thank God we never had kids. H: Marriage for you was a duty, something to be done because most people do. I sense you're about to make a decision.
C: I try to be nice to her. As I say, we have been roommates for six months, and we will be room mates for another two months, but. . .but as I say, she's awfully inconsiderate. . .I just think a lot of what she does is on purpose, too. . .just to see what I'll do about it. I'm getting too upset. H: Living with a roommate is often a source of conflict. You know . . . when two persons with different personalities become roommates. . . .six months may not be long enough to get to know and understand each other.
C: I thought maybe I could iron some of the wrinkles out. I'm always worrying about something -not big things, just little things. I can't get over the feeling that people are watching me. The way I worry about personal things and other things. When I see an ad in the paper, I worry about the things discussed in it although I know they aren't true. H: Advertisements are often in error. That's nothing unusual. As a matter of fact, a lot of people worry about the fact that there are too many advertisements in the paper. . . .We are bombarded by these advertisements.
C: Well, you see, my parents met at King's College, and they've always had it in mind that I should go there. But. . .but. . .I would rather.. . . H: Choosing a college is a decision for all students. . .You know all parents have some nostalgic feelings toward the schools that they attended a long time ago. It's nothing unusual.
C: It bothers me a lot. I don't think Cathy really loves me. I just don't think I'm important to her. She never tries to really understand how I feel about anything. H: Understanding another person takes time, and perhaps that's the issue.
C: (Shouting and pointing a finger toward the helper) You use me just like all of the rest. You're just like the rest-you want something from me. That's all. I know what I'll do. I'll fail you. I'll lead you astray. You'll think I'm improving, but I'll fail. I'll be your failure case. You'll be responsible.

H: You expected me to be something different, but you learned that I'm one of the rest too. Failure on my part could be a reward for you.

C: I know that the chances for the poor are very slim, and I want to get into something that will be a benefit to me and a credit to my own people. I'm not much of a classroom boy, and I want to know what. . .what steps to take to prepare myself. My father is a minister, and I've been in the ministry for quite a few years. I€ I can't be a good minister I don't want to be one at all. And yet I don't want to spend my life under the foot of somebody.

H: I hear you saying you would like to get into something that will give you a lot of personal satisfaction as well as sense of contribution to the society. No single area strikes you at the moment.

C: I really don't know what's wrong with me recently. I can't seem to concentrate on my courses or anything. And it's getting worse and worse. I'm falling further and further behind, and I just can't get caught up. And then I seem to fly off the handle. Why, just last weekend while I was home, my sister and I had a real battle. I don't know what my trouble is.

H: You'd want to figure out what's been going on with you lately, Carol. You seem different to yourself.

C: Well, (sigh) I don't know. I'm sort of mixed up right now. I've been pre-med. And, well, I'm a senior now, but I have next year also. I've 19 hours to take, still, and I'm not sure now whether I want to become a doctor or not. I haven't been refused yet and I haven't been accepted either. And, well, I'm not sure in my own mind whether medicine would be the best thing for me.

H: Medicine is an important field to enter. Here you can help people. However, though, pre-med curriculum may be too dry and tedious even for serious students who want to be doctors.

C: So I did finally go to the doctor. And he said yes, I do need to have an operation. A major one, and right away. But I just can't! Since Jim and I are both in school now, there just isn't any money. And the baby is just five months. I'm awfully afraid, too.

H: Who will take care of the baby is an important issue here. Especially when your baby is only five months old, it could be very difficult to leave her home and go to hospital.

C: I really like this guy an awful lot, and I've dated him five times. But. . .well. . . the trouble is he is Black. If my parents ever found out, it would be like a bomb explosion. They would pull me immediately out of school too.

H: Parents have much to say in choosing a boyfriend. Perhaps this must be a shocking story even to your friends.

C: There's something about this town. It's an awfully cold town. Northerners are so blasted. . .uh . . .indifferent. Oh I don't know, they're certainly not very warm or easy to know. I've been here since last summer, and I swear I don't know anybody at all.

H: This Northern town has been here for a long time. It's quite true that some people like this town and others don't. I would say it all depends upon individual tastes and preferences.

C: Well, (clears throat) I don't know how exactly to get started, but. . . and my particular problem would be with my mother, and I . . .well. . .I'd like to be able to do something about it before I go home. I don't know how I can explain it, so maybe if you can . . . .I could start. . . (pause) . . .I don't know where to start. I mean. . . .

H: So you have "interpersonal difficulties" with your mother . . . .or "generation conflict". . .maybe.. .

C: I think I'm going to have to drop out of school. I can't go on any more. It's been bad since my mother died last spring. There's just no need to continue having to put out the money any more.

H: Since your mother's death, Dick, school doesn't make sense to you.

MICROCOUNSELING SKILL DISCRIMINATION SCALE (MSDS) #1
(Response Sheets)

By D. Y. LEE, ALLEN E. IVEY AND RICHARD HAASE

Participant-

You are about to watch a series of video clips demonstrating the clinical skill of reflection of feelings and paraphrasing. Please watch the video clips carefully. For each video clip use this response sheet to rate the quality/effectiveness of the counselor in the video. A rating of one (1) indicates a very poor level of quality/effectiveness. A rating of seven (7) indicates a very high level of quality/effectiveness. Circle the rating number that you feel best describes the quality/ effectiveness of the counselor in the video.   The video clip number of the response should correspond to the number of the video clip displayed at the bottom left side of the screen.

Thank you for your participation in this study.

Level of Counselor's Quality/Effectiveness

Very Poor	Poor	Below Average	Average	Above Average	High	Very High
1	2	3	4	5	6	7

Reflection of Feelings Clip #1.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Reflection of Feelings Clip #2.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Reflection of Feelings Clip #3.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Reflection of Feelings Clip #4.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Reflection of Feelings Clip #5.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Reflection of Feelings Clip #6.

1   2   3   4   5   6   7

Reflection of Feelings Clip #7.

1   2   3   4   5   6   7

Reflection of Feelings Clip #8.

1   2   3   4   5   6   7

Reflection of Feelings Clip #9.

1   2   3   4   5   6   7

Reflection of Feelings Clip #10.

1   2   3   4   5   6   7

Reflection of Feelings Clip #11.

1   2   3   4   5   6   7

Paraphrasing Clip #1.

1   2   3   4   5   6   7

Paraphrasing Clip #2.

1   2   3   4   5   6   7

Paraphrasing Clip #3.

1   2   3   4   5   6   7

Paraphrasing Clip #4.

1   2   3   4   5   6   7

Paraphrasing Clip #5.

1   2   3   4   5   6   7

Paraphrasing Clip #6.

1   2   3   4   5   6   7

Paraphrasing Clip #7.

1   2   3   4   5   6   7

Paraphrasing Clip #8.

1   2   3   4   5   6   7

Paraphrasing Clip #9.

1   2   3   4   5   6   7

Paraphrasing Clip #10.

1   2   3   4   5   6   7

Paraphrasing Clip #11.

1   2   3   4   5   6   7

MICROCOUNSELING SKILL DISCRIMINATION SCALE (MSDS) #2
(Response Sheets)

By D. Y. LEE, ALLEN E. IVEY AND RICHARD HAASE

Participant-

You are about to watch a series of video clips demonstrating the clinical skill of reflection of feelings and paraphrasing. Please watch the video clips carefully. For each video clip use this response sheet to rate the quality/effectiveness of the counselor in the video. A rating of one (1) indicates a very poor level of quality/effectiveness. A rating of seven (7) indicates a very high level of quality/effectiveness. Circle the rating number that you feel best describes the quality/ effectiveness of the counselor in the video. The video clip number of the response should correspond to the number of the video clip displayed at the bottom left side of the screen.

Thank you for your participation in this study.

Level of Counselor's Quality/Effectiveness

Very Poor	Poor	Below Average	Average	Above Average	High	Very High
1	2	3	4	5	6	7

Reflection of Feelings Clip #1.

1	2	3	4	5	6	7

Reflection of Feelings Clip #2.

1	2	3	4	5	6	7

Reflection of Feelings Clip #3.

1	2	3	4	5	6	7

Reflection of Feelings Clip #4.

1	2	3	4	5	6	7

Reflection of Feelings Clip #5.

1   2   3   4   5   6   7

Reflection of Feelings Clip #6.

1   2   3   4   5   6   7

Reflection of Feelings Clip #7.

1   2   3   4   5   6   7

Reflection of Feelings Clip #8.

1   2   3   4   5   6   7

Reflection of Feelings Clip #9.

1   2   3   4   5   6   7

Reflection of Feelings Clip #10.

1   2   3   4   5   6   7

Reflection of Feelings Clip #11.

1   2   3   4   5   6   7

Paraphrasing Clip #1.

1   2   3   4   5   6   7

Paraphrasing Clip #2.

1   2   3   4   5   6   7

Paraphrasing Clip #3.

1   2   3   4   5   6   7

Paraphrasing Clip #4.

1   2   3   4   5   6   7

Paraphrasing Clip #5.

1   2   3   4   5   6   7

Paraphrasing Clip #6.

1   2   3   4   5   6   7

Paraphrasing Clip #7.

1   2   3   4   5   6   7

Paraphrasing Clip #8.

1   2   3   4   5   6   7

Paraphrasing Clip #9.

1   2   3   4   5   6   7

Paraphrasing Clip #10.

1   2   3   4   5   6   7

Paraphrasing Clip #11.

1   2   3   4   5   6   7

APPENDIX D

STUDENT FEEDBACK FORM

Please write a few sentences of advice to future students taking the video exercise that may help them to succeed in learning the clinical skills presented.

_____

_____

_____

_____

_____

APPENDIX E

LISTSERVE ANNOUNCEMENT

Eric Youn, a UTA SSW PhD Candidate, is recruiting volunteers for participation in his dissertation research project. Students will be compensated $10 for their participation. Students that participate during their lunch break will also be provided with lunch (pizza). Interested individuals should come to the _____ at the following times _____.

Participation should not last more that an hour and a half (1 ½ hrs.) Student may stop participation at all times. All participating students will be required to sign an Informed Consent form as dictated by Office of Research Compliance policies.

APPENDIX F

RECRUITMENT FLYER

SOCIAL WORK STUDENTS
NEEDED FOR RESEARCH PROJECT

$10 STIPEND
FREE PIZZA

Eric Youn, a UTA SSW PhD Candidate, is recruiting volunteers for

participation in his dissertation research project. Students will be

compensated $10 for their participation. Students that participate during

their lunch break will also be provided with lunch (pizza). Interested

individuals should come to the _____ at the following times

_____.

Participation should not last more that an hour and a half (1 ½ hrs.) Student
may stop participation at all times. All participating students will be
required to sign an Informed Consent form as dictated by Office of Research
Compliance policies.

APPENDIX G

STUDENT ACTOR RECRUITMENT FLYER

STUDENT ACTORS NEEDED
$10.85/hr

The UTA School of Social Work has a dissertation project that requires the production of forty-four (44) short skits (30 sec. each) portraying a social worker and a client in a counseling situation. These skits will be videotaped and shown to social work student to help them in their clinical skills education.

Student actors are needed in the production of these educational videos. Actors will be compensated $10.85/hr (GRA rate) for their participation. All participants are required to acknowledge and sign an IRB research project consent form and a release form giving permission to have their likeness used in the educational videos. All actors must be 18 years old or over (Sorry, no exceptions).

APPENDIX H

VIDEO CONSENT FORM

CONSENT TO USE VIDEO PHOTOGRAPHS

Date: _____

I give consent to __Eric Youn__to take video photographs of me for use in social work education purposes.

These video photographs may be integrated into educational software and/or Internet sites to advance social work knowledge, practice or education.

I am over 18 years of age.

_____
(Signature)

_____
(Print Name)

_____
(Phone)

Video Photographer sign here: _____

CONSENT OF PARENT OR GUARDIAN for children
(To be obtained when subject is under 18 years of age)

Date: _____

I am the parent/guardian of _____, and I give consent to

___Eric Youn_____ to take video photographs of him/her for use in social work education purposes.

These video photographs may be integrated into educational software and/or Internet sites to advance social work knowledge, practice or education.

_____
(Signature)

_____
(Print Name)

_____
(Phone)

Video Photographer sign here: _____

APPENDIX I

CLINICAL SKILLS – VIRTUAL LEARNING ENVIRONMENT OPTIONS

The following are excerpts from the text and audio clips used in the CS-VLE. The text in bold and italics refer to the button used to access the text and audio excerpts.

Instructions button

The Clinical Skills – Virtual Learning Environment

In the last few years, it has been noted that a theoretical framework of learning known as **Experiential Learning Theory** has been accepted as a preferred framework for teaching social work content, and in particular, clinical skills.

David A. Kolb is noted for developing the framework of Experiential Learning Theory. According to Kolb, Experiential Learning takes place in four different phases. These stages are *concrete experience* abilities (which entails the learner involving themselves in new experiences), *reflective observation* abilities (which entails the learner observing experiences from many perspectives), *abstract conceptualization* abilities (which entails the learner integrating observations into logically sound theories), and *active experimentation* (which entails the learner using knowledge to solve problems).

The phases of Experiential Learning are represented in the Clinical Skills – Virtual Learning Environment in the following options.

1. Concrete Experience – Clinical Skills Explanation and Clinical Skills Demonstration

2. Reflective Observation – Lessons on Clinical Skills (both audio and text) and Overview of Skills

3. Abstract Conceptualization – Reflection Prompt

4. Active Experimentation – Clinical Skills Identification Game

Work with as many of the options as desired for thirty (30) minutes. Please keep track of what options were selected and in what order you did them.

Overview of Skills button

Overview of Skills

Eye Contact   Maintaining visual focus on the client to illustrate comfort with what the client is saying as well as a positive outlook

Body Language   Body posture (forward lean and relaxed posture) that indicates interest and body, head, facial expressions, and hand movements that convey warmth and understanding

Verbally Following A simple response or acknowledgement to the client to indicate that they are being listened to without introducing new data

Attentiveness   Continuously indicating to the client that they are being listened to and that attention is being paid to what they are saying

Silence   Allowing the client to speak at their own pace without interruption

Lesson on Clinical Skills button

Allen Ivey, a key researcher of clinical skills, indicates that there are several "attending behaviors" that can be utilized to make the client feel comfortable and feel that they are being listened to. Examples include eye contact, body language, and verbal following behavior. These behaviors are somewhat non-verbal in nature, but have some verbal components. For example, verbal following behavior might be a brief statement of "yes" if a client asks something like "You know what I'm saying?" It could also be a brief question such as "Confused?" if a client says something like "I feel confused all the time?" The purpose being to get the client to continue and elaborate without really interrupting their flow. Sometimes body language such as a head nod or a simple "mm hmm" can have the same effect.

APPENDIX J

INFORMED CONSENT FORM

PRINCIPAL INVESTIGATOR: _Eric Youn_____

TITLE OF PROJECT: Clinical Skills – Virtual Learning Environment Dissertation Study

This study is part of a research experiment being conducted by Eric Youn, a PhD

Candidate at the University of Texas at Arlington School of Social Work.

This Informed Consent will explain about being a research subject in an experiment. It is

important that you read this material carefully and then decide if you wish to be a

volunteer.

PURPOSE:

The purpose(s) of this research study is/are as follows:

To find out if a clinical skills virtual learning environment is effective in teaching clinical skills to social work students?

DURATION

The expected duration of your participation is an hour and a half. There will be no more
than 350 subjects participating from 4 different sites.

PROCEDURES

The procedures, which will involve you as a research subject, include:

Taking a clinical skills history survey and then taking a pre-test, then working with a
computer exercise, and finally taking a post-test. All of these activities are experimental
in nature and relate to the data gathering of the research.

POSSIBLE RISKS/DISCOMFORTS

The possible risks and/or discomforts of your involvement include:

No known possible risks and/or discomforts. No pregnancy test is needed for this
research.

PRINCIPAL INVESTIGATOR: _Eric Youn_____

TITLE OF PROJECT: Clinical Skills – Virtual Learning Environment Dissertation Study

POSSIBLE BENEFITS

The possible benefits of your participation are:

An increase in clinical skills knowledge.

ALTERNATIVE PROCEDURES / TREATMENTS

The alternative procedures / treatments available to you if you elect not to participate in this study are:

There are no alternatives procedures /treatments.

CONFIDENTIALITY

Every attempt will be made to see that your study results are kept confidential. A copy of the records from this study will be stored in (The office of Dr. Richard Schoech at the University of Texas School of Social Work) for at least three (3) years after the end of this research. The results of this study may be published and/or presented at meetings without naming you as a subject. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the UTA IRB, the FDA (if applicable), and personnel particular to this research (individual or department) have access to the study records. Your (e.g., student, medical) records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above.

COMPENSATION FOR MEDICAL TREATMENT
Not applicable for this study.

PRINCIPAL INVESTIGATOR: _Eric Youn_____

TITLE OF PROJECT: Clinical Skills – Virtual Learning Environment Dissertation Study

FINANCIAL COSTS

The possible financial costs to you as a participant in this research study are:

None.

CONTACT FOR QUESTIONS

If you have any questions, problems or research-related medical problems at any time, you may call Eric Youn at 817-913-6701, or Dr. Richard Schoech at 817-272-3964. You may call the Chairman of the Institutional Review Board at 817/272-1235 for any questions you may have about your rights as a research subject.

VOLUNTARY PARTICIPATION

Participation in this research experiment is voluntary. You may refuse to participate or quit at any time. If you quit or refuse to participate, the benefits (or treatment) to which you are otherwise entitled will not be affected. You may quit by calling Eric Youn, whose phone number is 817-913-6701. You will be told immediately if any of the results of the study should reasonably be expected to make you change your mind about staying in the study.

PRINCIPAL INVESTIGATOR: _Eric Youn_____

TITLE OF PROJECT: Clinical Skills – Virtual Learning Environment Dissertation Study

By signing below, you confirm that you have read or had this document read to you. You will be given a signed copy of this informed consent document. You have been and will continue to be given the chance to ask questions and to discuss your participation with the investigator.

You freely and voluntarily choose to be in this research project.

PRINCIPAL INVESTIGATOR: _____
                                                                                                                    DATE

_____
SIGNATURE OF VOLUNTEER   DATE

_____
SIGNATURE OF PATIENT/LEGAL GUARDIAN (if applicable)   DATE

_____
SIGNATURE OF WITNESS (if applicable)

APPENDIX K

GLOSSARY OF TECHNICAL TERMS

Clinical Skills - Skills used with a client during counseling sessions to optimize the effectiveness of the session (i.e. Attending skills such as eye contact, body language, and tone as well as Listening skills such as paraphrasing, summarizing, and reflection of feeling).

Clinical Skills Virtual Learning Environment (CS-VLE) – A Virtual Learning Environment (see definition below) containing experiential learning techniques for learning clinical skills designed at the University of Texas at Arlington

Distance Education - Methods used by colleges and universities to allow students to participate in courses without having to travel to the main college or university campus

Gameplay - One or more casually linked series of challenges in a simulated environment

Interactive Video Disk – A laser or stylus-readable random-access circular disc that contains both audio and video forms of multimedia (see definition below). Order of videos displayed on the disk is determined by answers to questions asked of the viewer that appear when videos are played.

Multimedia - The use of several different media (e.g. text, audio, graphics, animation, video, and interactivity) to convey information

Streaming Video – Video that is viewed while it is being delivered from the Internet. This is in contrast to video which is downloaded from the Internet and then played.

Virtual Learning Environment (VLE) - Web-based environments that help facilitate learning through course management and curriculum delivery methods.

Web-Based Learning – Learning that takes place through interaction with the World Wide Web (i.e. utilizing an online program such as Web-CT)

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