

Research on Social Work Practice

<http://rsw.sagepub.com>

A Comparison Study of Live Instruction Versus Interactive Television for Teaching MSW Students

Marie Thielke Huff

Research on Social Work Practice 2000; 10; 400

The online version of this article can be found at:
<http://rsw.sagepub.com/cgi/content/abstract/10/4/400>

Published by:

 SAGE Publications

<http://www.sagepublications.com>

Additional services and information for *Research on Social Work Practice* can be found at:

Email Alerts: <http://rsw.sagepub.com/cgi/alerts>

Subscriptions: <http://rsw.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

A Comparison Study of Live Instruction Versus Interactive Television for Teaching MSW Students Critical Thinking Skills

Marie Thielke Huff
Western Carolina University

Objective: The acquisition of critical thinking skills over one semester by distant and campus social work students enrolled in a graduate-level policy course were compared. Method: The scores of pretests and posttests of 62 master's of social work students were analyzed using the California Critical Thinking Skills Test. Results: Both groups significantly increased their critical thinking skills with no significant differences found between the two groups. Conclusion: Distance education using interactive television was found to be equivalent to face-to-face instruction with regard to acquisition of critical thinking skills.

The Council on Social Work Education (1992) states that graduates of master's degree programs should be able to "apply critical thinking skills within professional contexts, including synthesizing and applying appropriate theories and knowledge to practice interventions" (p. 4). Because critical thinking is an essential skill for social workers to acquire to become effective practitioners, quality social work education means teaching students to think critically and independently. Social workers are often called on to make independent decisions that directly affect their clients' lives. If they are unable to make reasonable and sound decisions by using critical thinking skills, they may unintentionally harm their clients (Gibbs & Gambrill, 1996).

Although one can make assumptions from learning theories and research based on enhancing the critical thinking skills of students in traditional classroom settings, one cannot ignore the inherent differences between face-to-face instruction and distance education. Educators are encouraged to critically examine their assumptions with regard to distance education and explore alternative paradigms that will make teaching more effective. One assumption is that distance education is a passive learning experience and

Author's Note: Correspondence may be addressed to M. T. Huff, Department of Social Work, 218 Stillwell Hall, Western Carolina University, Cullowhee, NC 28723; e-mail: mhuff@wcu.edu.



Research on Social Work Practice, Vol. 10 No. 4, July 2000 400-416
© 2000 Sage Publications, Inc.

cannot be interactive. Emerging technologies have increased the learning possibilities for distant students as educators have begun to explore ways to make distance education a truly interactive experience (Anderson & Garrison, 1995; Blakely & Schoenherr, 1995; Conklin & Osterndorf, 1995; Fulford & Zhang, 1993; Garrison, 1993).

Although there is a plethora of descriptive information in the literature with regard to technology and distance learning, there is a need for more empirical research and rigorous studies to be conducted in this area (Van Dusen, 1997). This study was designed to compare the critical thinking skills of students who receive their instruction through distance education technology with students who receive face-to-face instruction in the studio on campus over one semester. The comparison focused on two specific questions:

- Do critical thinking skills improve in graduate social work students after taking one policy course?
- Is the acquisition of critical thinking skills comparable for on-site and distance education students?

Information obtained in this study may benefit social work educators invested in improving their students' critical thinking skills as they plan their curricula for distance education students. It can also be useful to individual instructors as they design their classroom syllabi and assignments.

DEFINING CRITICAL THINKING

Critical thinking is a complex phenomenon and is not easily defined. Gibbs and Gambrill (1996) define critical thinking as "the careful examination and evaluation of beliefs and actions" (p. 3). They describe critical thinking as the process of reasoning, creating, considering alternative points of view, and evaluating knowledge. Ennis (1987) defines critical thinking as "reasonable reflective thinking that is focused on deciding what to believe or do. Formulating hypotheses, alternative ways of viewing a problem, questions, possible solutions, and plans for investigating something, are creative acts that come under this definition" (p. 10).

Paul (1985) argues that free thinking has been actively discouraged by our educational system, whereas Brookfield (1990) proposes that the stimulation of students' critical thinking should be an overarching aim of college teaching in all subjects. There are three reasons why Brookfield contends that critical thinking is an important skill to encourage in students. First, critical thinking is an intellectual function that one expects to be exemplified in adulthood.

For example, this is the time when one begins to doubt universal truths and to explore the fit between context and experience. Second, critical thinking is a necessity for personal survival and enables one to examine personal relationships in a critical manner. Third, critical thinking is necessary in a democratic society to allow one to develop an attitude of critical scrutiny of elected officials. In summary, Brookfield states, "Helping learners acquire a critically alert cast of mind—one that is skeptical of claims to final truths or ultimate solutions to problems, is open to alternatives, and acknowledges the contextuality of knowledge—is the quintessential educational process" (p. 21).

Paul (1990a) analyzes several definitions of critical thinking throughout his writings. He suggests that one should retain a host of definitions, as no one definition covers all of the dimensions of critical thinking. By using a combination of definitions of critical thinking, one can avoid the limitations of each.

For purposes of this study, the definition described by Facione and Facione (1994) in their test manual of the California Critical Thinking Skills Test (CCTST) is used. This definition was formulated by a panel of theoreticians representing several different academic fields. Critical thinking is defined as "the process of purposeful, self-regulatory judgment. Critical thinking, so defined, is the cognitive engine which drives problem-solving and decision-making" (p. 1). Facione and Facione report that this definition of critical thinking is the result of the work of hundreds of educators, employers, and policy makers who came to a consensus on this definition of critical thinking. The cognitive skills of interpretation, analysis, inference, evaluation, and explanation are at the center of critical thinking skills and make up the subscales of the CCTST (Facione & Facione, 1994). Critical thinking is not viewed as a linear process but is seen as more of a circular and interactive process. These skills are used interactively when one makes reflective judgments about what to believe or what to do, and these skills can be transferred to new situations and contexts.

Facione and Facione (1994) contend that certain attributes contribute to one's predisposition to use critical thinking skills. These factors include open-mindedness, inquisitiveness, cognitive maturity, truth-seeking, analyticity, and critical thinking self-confidence. They believe that these "habits of mind" can be cultivated in the classroom environment by the instructor through the use of various techniques. These techniques include modeling critical thinking skills, rewarding good and challenging poor critical thinking skills, creating an environment of inquiry, engaging students in critical thinking, and diversifying contexts.

Critical Thinking Among Social Work Students

The concept of critical thinking has only recently begun to receive attention in the social work education literature (Gibbs & Gambrill, 1996). Social workers are expected to analyze policies in a systematic and critical fashion and to assimilate extensive information, while at the same time being aware of their own cultural biases and beliefs. These skills are dependent on their ability to think critically and analytically.

Good critical thinking does not come naturally to people but instead has to be actively cultivated (Paul, 1990a). It is human nature for people to be spontaneous and egocentric, but we need training in how to be rational and systematic. Paul (1990b) states that people from different ethnic and religious groups, social classes, and social alliances tend to formulate their own different but equally egocentric belief systems. He suggests that most students need to be taught that they do not have a "direct pipeline to reality" (p. 208). This argument is consistent with social work values and ethics that encourage social workers to view client systems within the context of their environment and culture. Genuine critical thinkers will ask questions about their beliefs, values, and claims, and investigate these (Gibbs & Gambrill, 1996). They will question assumptions, accept differences as an opportunity to learn, and demonstrate a willingness to change their minds in light of overwhelming evidence.

The best way to enhance students' critical thinking skills is to have them apply such skills to a specific subject area (Facione, 1990). Students must learn to critically analyze theories when deciding on which course of action to implement with their clients (Mumm & Kersting, 1997). Critical thinking involves the ability to evaluate information in a systematic and objective manner while weighing the consequences of each alternative solution (Campbell & Davis, 1990; Gibbs, 1994).

Mumm and Kersting (1997) write about some possible consequences that may result if social workers are unable to critically study the impact of their practice procedures. For example, social workers should not decide on a course of action just because it "feels right." We should avoid choosing interventions based on a theory without being aware of its strengths or limitations. Social workers who do not use good critical thinking skills may apply one theory to all situations, attempting to make the clients fit their interventions rather than treating them as individuals. In sum, critical thinking plays a major role in deciding what to do (Gambrill, 1993).

There are numerous benefits related to the use of good critical thinking skills by social workers (Gambrill, 1997). Social workers who practice good critical thinking will be able to accurately describe problems and will avoid vague descriptions and buzzwords like *codependent* or *child of an alcoholic*. They will be more precise and accurate in their descriptions, enabling them to explore specific solutions and communicate more effectively with others.

Gambrill (1997) states that critical thinking skills discourage the active promotion of ignorance by encouraging us to question popular beliefs and evaluate all claims and arguments. They help social workers to recognize informal fallacies, propaganda, biases, pseudoscience, quackery, and fraud. Good critical thinking helps social workers to have greater empathy for others and themselves. By understanding the context of behavior, social workers will be less judgmental.

Critical Thinking in Distance Education

The educational literature supports the theory that interactions among students and between students and instructors enhance the students' opportunity for learning to think critically in the traditional classroom (Brookfield, 1987, 1990; Knowles, 1990; Meyers & Jones, 1993; Shale & Garrison, 1990). Other studies support the positive effect of interaction in the distance education setting (McGiven, 1994; Wagner, 1993). Interactions among students and between students and instructors can be strengthened through the use of technologies such as interactive television, teleconferences, computer discussion groups, videoconferences, and e-mail. As interactions between the instructor and learners increase, opportunities for students to draw on the instructor's experience and guidance also increase. Learner-learner interactions are also important, as learning to work with others in groups is an important skill in modern society (Moore, 1989).

Although students have various learning styles, genuine learning is considered to be an active and dynamic process (Grasha, 1996; Kolb, 1984). John Dewey began to challenge the passive student approach early in the 20th century. His teaching theories from the first half of the century have had a great impact on the concept of effective teaching in the United States (Knowles, 1990). In 1938, Dewey wrote, "All genuine education comes about through experience" (as cited in Knowles, 1990, p. 88). In this context, interactions among students and between students and teachers are important components of the learning process. Although students in traditional settings can easily interact with their instructors and peers, these same types of interactions must be carefully planned and structured by teachers of distance education (Parker, 1997). In cases where the instructor cannot see the students,

there is a lack of nonverbal communication or visual cues to tip the instructor that students are confused about a concept or have questions. Some students may be fearful about calling in to the studio without prompting or encouragement from the instructor. In addition, the instructor is unaware of the interactions taking place between students at the distance sites.

Interaction alone does not guarantee good critical thinking among students (McGiven, 1994). Distant students must be taught how to use the available technologies that enable them to interact in the classroom. They must learn how to access and use e-mail, to research topics and assignments on the Internet, and to develop the confidence needed to call in to the campus site to participate in class discussions. Students must also be taught how to successfully analyze information so that they can gain maximum benefits from interactions with their peers during small-group discussions.

Researchers generally agree that there is no difference between campus students' and distant students' acquisition of course content (Elliott, Coe, & Mayadas, 1996; Figueroa, 1992; Verduin & Clark, 1991; Weinbach, Gandy, & Tartaglia, 1984). A search of the literature did not yield any studies that compared critical thinking skills in distance education students with critical thinking skills in campus students. Researchers have neglected to address the importance of encouraging critical thinking in the distance education classroom. Thus, this is the first research conducted in this area.

METHOD

This study compared changes in the critical thinking skills of distance education students receiving instruction through interactive television to students enrolled in the same course but receiving face-to-face instruction. The sampling population included 73 master's of social work (MSW) students enrolled in one graduate social policy course in a large, public university in the fall semester of 1997. The research took place over the course of one semester. The students' critical thinking skills were measured through the use of the CCTST. The overall research question was as follows:

Can distant social work students achieve the same gains in critical thinking skills as campus social work students receiving face-to-face instruction?

In addition, there were three subquestions:

Are there any differences between beginning distant social work students and beginning campus social work students with regard to their critical thinking skills?

Do critical thinking skills improve in students after taking one policy course?
Does gender, age, ethnicity, or amount of work experience influence the acquisition of critical thinking skills among social work students?

The researcher used specific teaching strategies designed to increase the level of critical thinking by the students in the class. Students were encouraged to doubt what they heard in the media or read in their texts, to explore their own opinions and beliefs, and to question and challenge the instructor. Some of the specific strategies used by the instructor include the use of e-mail journaling with peers, listserv discussions, group presentations, and a group exam in which students were instructed to describe various sides of controversial issues. Students were also taught about specific common fallacies and were asked to identify them from real examples presented to them on their midterm exam.

Students

The total number of students who completed both the pretests and posttests was 62, including 38 distant students and 24 campus students. All but 1 were part-time MSW students beginning their first semester of course work. Thirty-eight of the students identified themselves as White, 20 of them identified themselves as African American, 2 did not identify their ethnicity, and 2 stated they were of Asian descent. The majority of them (53) were female. The mean age of the students was 34. The students reported obtaining their bachelors' degrees in numerous majors, with psychology being the most common. Twenty students stated they had undergraduate psychology degrees, 12 had bachelor's of social work degrees, and 7 had sociology degrees. They also had varying degrees of social work experience.

Research Design

The research design is defined by Campbell and Stanley (1963) as a non-equivalent control group. To account for possible differences between distant and on-site students entering the social work program, a pretest and posttest were given to both groups. The researcher gave the pretest during the students' first class meeting, which was conducted on campus prior to the first interactive television class. A posttest was given to students in December 1997 to measure the increase in students' critical thinking skills. Again, this test was given to students during a meeting on campus.

The purpose of the study was explained to the students by the researcher. Although the test was given during the students' class time, they were told

that their participation was voluntary and were asked to sign a consent form to participate. The researcher also explained that their individual scores would be kept strictly confidential and that the consent forms would be kept separately from the tests. Students were told that the demographic forms were not used to identify individual students but were to be used to explore any associations between items on the demographic forms and the scores from the CCTST.

One risk in doing research with students during class time is that some students may perceive it to be a waste of time and may become resentful. To address this concern at the beginning of the semester, the researcher described to students the importance of developing good critical thinking skills and its relationship to social work policy. An attempt was made to integrate opportunities for independent and critical thinking within the policy course itself. The instructor presented the CCTST as being a measurement of students' acquisition of critical thinking skills over one semester. Along with their grades from the course, students were mailed their individual scores from the CCTST and the overall results from the study. This gave students a chance to pull it all together as well as reap some benefits from being a participant.

Four hypotheses were formed at the beginning of the study. They were as follows:

Hypothesis 1: There are no significant differences between beginning distant social work students and beginning on-site social work students with regard to their level of critical thinking skills.

Hypothesis 2: Both distant social work students and on-site students will increase their critical thinking skills after taking the policy course.

Hypothesis 3: There will be no statistical differences between distant and campus students with regard to their acquisition of critical thinking skills.

Hypothesis 4: Age, gender, ethnicity, or amount of work experience will have no effect on the acquisition of critical thinking skills by the students.

Outcome Measure

The CCTST developed by Facione and Facione (1994) was used to measure the acquisition of critical thinking skills by the students over the semester. The CCTST is a standardized test consisting of 34 questions. The test scores from the CCTST represent an overall score of one's critical thinking, which is made up of five subscales. The subscales are Analysis, Evaluation, Inference, Deductive Reasoning, and Inductive Reasoning. The first three subscales represent the major core skills identified in *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and*

TABLE 1: Analysis of Variance on Overall and Subscale Scores of CCTST

<i>Scores</i>	SS	df	MS	F	<i>Significance</i>
Total	64.08	1	64.08	14.223	.000*
Analysis	0.405	1	0.405	0.341	0.561
Evaluation	16.26	1	16.26	6.87	0.011*
Inference	11.13	1	11.13	7.023	0.010*

NOTE: CCTST = California Critical Thinking Skills Test.

* $p < .05$.

Instruction. Executive Summary: The Delphi Report (Facione, 1990). Each item is multiple choice, with one correct answer and three to four distracters. Some distracters are representative of frequently made errors in inference, called *classical fallacies*. Other distracters, known as *dispositional failures*, include impatience, injecting a personal bias, and responding affectively.

Internal consistency reliability estimates were computed separately by pretesting and posttesting the instrument and ranged from .68 to .70 (Facione & Facione, 1994). Although lengthening the exam might increase reliability, the authors believe that this would decrease the test's usefulness as a curriculum evaluation tool. Also, the test is mentally demanding, and increasing its length may also decrease its reliability.

RESULTS

The independent, or predictor, variable for the study is the type of classroom instruction: distance instruction through interactive television versus face-to-face instruction on campus. The dependent variable consists of scores from the CCTST. An analysis of variance (ANOVA) was conducted using a statistical confidence level of $p < .05$ to measure the differences between the two groups. Students were given 1 point for each correct answer, making 34 the highest possible score. The scores were normally distributed and ranged from 5 to 27 on the pretests and from 6 to 25 on the posttests.

The first subquestion was "Are there differences between beginning distant social work students and beginning campus social work students with regard to their critical thinking skills?" An independent samples t test was conducted comparing distant and on-site students on their pretests from the CCTST. There was no significant difference found between the two groups at the beginning of the semester ($t = .745$; $p < .05$).

The second subquestion was "Do critical thinking skills improve in students after taking one policy course?" To answer this question, a multiple

TABLE 2: Analysis of Covariates

<i>Effect</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Significance</i>
Site	0.02	1	0.02	0.00	0.950
Gender	4.22	1	4.22	0.92	0.329
Work experience	28.96	5	5.79	1.33	0.226
Ethnicity	263.2	1	263.2	8.29	0.006*

* $p < .05$.

TABLE 3: Mean Scores of Pretests and Posttests as Related to Ethnicity

<i>Group</i>	<i>Pretest</i>	<i>Posttest</i>	<i>Gain</i>
African American	12.6	14.1	1.5
White	16.4	17.8	1.4
Both	15.1	16.7	1.4

analysis of variance (MANOVA) was conducted to compare the pretests and posttests on the overall scores as well as the scores on each of the subscales (see Table 1). The test yielded a statistically significant increase in critical thinking skills among the students' overall scores and in the subscales of Inference and Analysis. No statistically significant differences were found between the two groups.

The third subquestion was "Does gender, age, ethnicity, or amount of work experience influence the acquisition of critical thinking skills among social work students?" An analysis of covariance (ANCOVA) was conducted to explore the covariates of gender, age, ethnicity, and work experience. With the exception of ethnicity, none of the covariates was found to have a significant influence on students' scores on the CCTST (see Table 2).

Ethnicity was found to be a significant factor, with African American students scoring statistically lower on the CCTST than White students. (The 2 Asian students were not included in this analysis.) Further investigation of the pretest scores yielded a statistically significant difference between African American and White students at the beginning of the study (see Table 2). Because the researcher did not have access to students' SAT scores or reading abilities, it is unclear whether these factors may have contributed to the differences in scores on the pretests. Ethnicity did not make a difference in their acquisition of critical thinking skills, however (see Table 3).

The overall research question guiding this study was "Will distant students at the University of South Carolina's College of Social Work achieve

TABLE 4: Comparison Between Distant and On-Site Students' Exam Grades

<i>Group</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>
Campus	28	88.1	8.4	1.6
Distant	45	89.6	9.68	1.4

the same gains in critical thinking skills as the students on campus?" To address this question, an ANOVA was conducted comparing the gains of distant students on the CCTST to the gains made by students on campus. As shown in Table 2, the site location of students (distant vs. campus) did not have a significant effect on student scores on the CCTST.

To further test the research question with regard to equal acquisition of critical thinking skills, the students were also compared using the scores from their midterm exams. This was an appropriate comparison because it was established that there were no significant differences between the two groups with regard to their critical thinking skills at the beginning of the semester. The exam was designed to test their recall of specific information as well as their critical thinking skills as they related to the course content. As shown in Table 4, an independent samples *t* test yielded no significant differences between the two groups with regard to their scores on the midterm ($t = -.651$, $p < .05$) (see Table 4).

Distant Students Versus Campus Students

Distant students had experiences that were unique to them and not encountered by students on campus. Various distant students complained about technological problems, the condition of their viewing sites, and the difficulty of hearing the instructor when other students at their sites were talking during the class presentations. When technological problems interrupted class at a particular site, the distance education department sent a videotape of the class to that site for students to view at a later date. It was often inconvenient for distant students to make an extra trip to the site to view a missed class. Also, students at one site complained about its location and did not feel safe entering or leaving the building after dark.

Some distant students commented that they would have enjoyed more personal interaction during class discussions. One distant student commented that she would have liked to call in more often, but it was difficult to participate because of an echo on the phone. Another distant student stated, "By the time we call in, the question has been answered."

The students on campus seemed to feel very connected as a group, separate from the distant students. One campus student stated, "There is something nice about a small, informal class. Although our class has satellite branches and call-in communication systems, the studio is still rather small in relation to other larger classes I have enrolled in." Students on campus were also able to interact more immediately in class discussions than were distant students.

Numerous students commented on the amount of student participation that took place during class. The majority of students who commented in this area complained about the amount of time taken up by students who used the class as an opportunity to get on their soapboxes with regard to certain issues. For example, they felt that student comments were generally too lengthy and repetitive, and they expressed concern about it cutting into class time. The distant students seemed especially bothered by this issue. One distant student stated, "The four of us at our site dread to hear you say 'is there a caller?'" Another distant student stated, "Some of the in-house students could remember that all of us are out here and would like to make comments, too."

Overall, students seemed to enjoy class participation when it was carefully structured by the instructor. For example, one distant student commented, "When you assign a question to a specific area, this gives us all a chance to participate. We talk about it at our location and then we call in with our collective input." Students viewed this type of interaction as staying on task.

Requiring students to get an e-mail account was an appropriate technique to use when encouraging interaction between students and instructor. Because the instructor had no set office hours and was only available via long-distance phone calls to both campus and distant students, access to e-mail was an essential part of the classroom experience. The instructor was able to communicate with students in a personal way that would have been impossible without e-mail. Overall, the students expressed their appreciation for the instructor's accessibility to answer their questions. This may have been even more important to distant students. For example, one distant student stated, "I appreciate your willingness to interact with students via e-mail. I have certainly taken advantage of this since I am alone at my site." Another student stated, "I appreciate the instructor's continuous willingness to make herself available for any questions, comments, or concerns through listserv, e-mail, and class discussions."

The instructor used the listserv to provide students with weekly outlines prior to class. She also used the listserv to share information about current events related to social policy and would ask students to share their opinions

on the issue. Students seemed willing to share their personal concerns via e-mail with regard to the format of the class as well as their perceptions of the dynamics of the groups at various sites. Students may have felt less fearful about expressing their opinions via e-mail and they may not have shared them with the instructor in person.

DISCUSSION AND APPLICATIONS TO SOCIAL WORK EDUCATION

The first three hypotheses delineated at the beginning of the study were supported. First, no differences were found between distant social work students and on-site social work students with regard to their level of critical thinking skills at the beginning of the study. Most of the students were nontraditional students, attending school part-time. Many of them were working full- or part-time, with family and personal obligations outside of class. The only obvious difference between the two groups was their geographic locations. Students who attended class at a distance did so out of convenience, not necessarily by choice.

The second hypothesis, that both distant and on-site students would increase their critical thinking skills after taking the policy course, was supported. Both groups showed statistically significant improvement in their critical thinking scores as measured by the CCTST. The third hypothesis, which stated that there would be no statistically significant differences between distant and campus students with regard to their acquisition of critical thinking skills, was also supported.

The fourth hypothesis in the study was that age, gender, ethnicity, or amount of work experience would have no effect on the acquisition of critical thinking skills by the students. Although differences were found on the beginning scores of Black and White students, the results suggest that these intervening variables had no effect on students' acquisition of critical thinking skills over the course of the semester. We do not know what may have caused these differences without further investigation.

One limitation of this study is that the sample was a convenience rather than a random sample. It would be inappropriate to generalize the results to students in other distance education classes without replicating the study. Also, 86% of the students were female, making it difficult to generalize the results to male students.

Another limitation is related to the structure of the social work program in the university setting. Most of the part-time students are members of the same cohort group, making it impossible to set up a comparison group of part-time or distance education students. The students were also taking a research class

through distance education concurrently with the policy class. Although the students made statistically significant gains in their critical thinking skills, it is unclear how much they were influenced by their participation in the research class or by other effects of being a student. Graduate social work students may increase their critical thinking skills by simply reading, studying, or questioning new concepts. Perhaps their critical thinking skills were inspired by the expectations placed on them as graduate students, in which they are counted on to think more independently than in undergraduate programs.

In future research, a longitudinal study could be conducted to compare the critical thinking skills of full-time students on campus and part-time distance education students at both the beginning and end of their social work educational experience. At graduation, both groups of students should have completed the same courses and number of hours in their field placement. Although this study could not measure specific teaching methods or behaviors, it would measure whether distance education students have acquired critical thinking skills equal to students on campus when they graduate from the social work program.

As the literature reveals, numerous studies have supported equal acquisition of content when a comparison is made between distance education students and on-site students. Perhaps it is time for the comparisons to stop. As shown in a survey conducted by the National Center for Education (1997), distance education is no longer the wave of the future but is an indisputable reality in today's colleges and universities. Rather than continuing attempts to prove that distance education is as good as traditional education, future research should simply focus on how to improve distance education courses by making them even more effective learning experiences for students.

When social work instructors challenge their students to think, they are often challenging the way in which their students view the world. One can expect students to experience some discomfort as they go through this process. Instructors who want to increase their students' critical thinking skills should be aware of these dynamics and offer students support when needed. Students who feel their self-esteem is being crushed by an instructor will not be open to the self-reflections that are necessary as they go through the process of learning how to think independently. Kloss (1994) described this dynamic of resistance to critical thinking as follows:

We must keep in mind that we are asking students to exit voluntarily an idyllic life of certainty where the locus of authority is clear—a Garden of Eden—and to assume the heavy burden of remaking the world anew day after day after day, a Sisyphean task at best. If we remember this, we will have a better perspective

on how drastically uneven and unfair an exchange it may seem to them, and we can understand better the wisdom of their resistance. (p. 158)

To foster critical thinking in the social work distance education classes, one must design the classes in a way that encourages discussion, questions, and reflection (Meyers, 1986). Because distance education classes tend to be very large, instructors must be creative in developing ways to get as many students involved in their own learning as possible. Calling on individual students or sites during class, giving each group a question to discuss over the breaks, and giving assignments over a listserv are only a few of the possibilities that distance education instructors may implement. The lack of physical contact with students means that instructors must set aside some time so that students have access to them to ask questions or clarify points. It is very easy to lose track of students in distance education when instructors simply show up every week, give their lecture, and go home. Distance education is a teaching modality that is becoming increasingly familiar to schools of social work. We must be careful not to implement the use of technology just because it is new. Social work educators should ask, "What do the data show about using this particular method? How easy is it for faculty and students to learn to use it? How will this benefit my students?" We should seek to identify those specific teaching methods that effectively enhance learning and develop critical thinking in the classroom and be guided by this knowledge as we decide how to use the tools of technology available to us.

REFERENCES

- Anderson, T., & Garrison, D. R. (1995). Critical thinking in distance education: Developing critical communities in audio teleconferencing context. *Higher Education*, 29, 183-199.
- Blakely, T., & Schoenherr, P. (1995). Telecommunication technologies in social work distance education. *Journal of Continuing Social Work Education*, 6, 8-12.
- Brookfield, S. (1987). *Developing critical thinkers* (1st ed.). San Francisco: Jossey-Bass.
- Brookfield, S. (1990). *The skillful teacher: On technique, trust, and responsiveness in the classroom*. San Francisco: Jossey-Bass.
- Campbell, D., & Davis, C. (1990). Improving critical thinking by combining critical thinking skills with psychological type. *Journal on Excellence in College Teaching*, 1, 39-51.
- Campbell, D., & Stanley, J. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.
- Conklin, J., & Osterndorf, W. (1995). Distance learning in continuing social work education: Promise of the year 2000. *Journal of Continuing Social Work Education*, 6(3), 13-17.
- Council on Social Work Education. (1992). *Curriculum policy statement for master's degree programs in social work education*. Alexandria, VA: Author.
- Elliott, D., Coe, J. A., & Mayadas, N. (1996, July). *Distance education: A social development perspective on outreach programs for women and special groups*. Paper presented at the

- meeting of the Ninth International Symposium of the Inter-University Consortium for International Social Development, Oporto, Portugal.
- Ennis, R. (1987). A taxonomy of critical thinking dispositions and abilities. In J. B. Baron & R. J. Sternberg (Eds.), *Teaching thinking skills* (pp. 9-26). New York: Freeman.
- Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Executive Summary: The Delphi Report*, La Cruz, CA: California Academic Press.
- Facione, P. A., & Facione, N. C. (1994). *The California Critical Thinking Skills Test: Test Manual*. Millbrae, CA: California Academic Press.
- Figueroa, M. (1992). Understanding students' approaches to learning in university traditional and distance education courses. *Journal of Distance Education*, 7(3), 15-16.
- Fulford, C., & Zhang, S. (1993). Perceptions of interaction: The critical predictor in distance education. *American Journal of Distance Education*, 7, 8-21.
- Gambrill, E. (1993). What critical thinking offers to clinicians and clients. *The Behavior Therapist*, 16(6), 141-147.
- Gambrill, E. (1997). *Social work practice: A critical thinker's guide*. New York: Oxford University Press.
- Garrison, D. R. (1993). A cognitive constructivist view of distance education: An analysis of teaching learning assumptions. *Distance Education*, 14, 199-211.
- Gibbs, L. (1994). Teaching clinical reasoning. *The Behavior Therapist*, 17(1), 1-6.
- Gibbs, L., & Gambrill, E. (1996). *Critical thinking for social workers*. Thousand Oaks, CA: Pine Forge Press.
- Grasha, A. F. (1996). *Teaching with style*. Pittsburgh, PA: Alliance.
- Kloss, R. (1994). A nudge is best: Helping students through the Perry scheme of intellectual development. *College Teaching*, 42, 151-158.
- Knowles, M. (1990). *The adult learner: A neglected species* (4th ed.). Houston, TX: Gulf.
- Kolb, D. A. (1984). *Experiential learning: Experience as a source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- McGiven, J. (1994). Designing the learning environment to meet the needs of distant students. *Journal of Technology and Learning*, 27(2), 52-57.
- Meyers, C. (1986). *Teaching students to think critically*. San Francisco: Jossey-Bass.
- Meyers, C., & Jones, T. (1993). *Promoting active learning: Strategies for the college classroom*. San Francisco: Jossey-Bass.
- Moore, M. (1989). Three types of interaction. *American Journal of Distance Education*, 3(2), 1-6.
- Mumm, A. M., & Kersting, R. (1997). Teaching critical thinking in social work practice courses. *Journal of Social Work Education*, 33, 75-84.
- National Center for Education (1997). National Survey of Distance Education. [Online]. Available: www.nces.ed.gov/pubs98/distance/index.html.
- Parker, A. (1997). *A distance education how-to manual: Recommendations from the field*. [Online]. Available: www.webcom.com/journal/parker.html.
- Paul, R. W. (1985). The critical thinking movement in historical perspective. In A.J. Binker (Ed.), *Critical thinking: What every person needs to survive in a rapidly changing world* (pp. 1-6). Rohnert Park, CA: Sonoma University Press.
- Paul, R. W. (1990a). Critical thinking in North America. In A.J. Binker (Ed.), *Critical thinking: What every person needs to survive in a rapidly changing world* (pp.18-43). Rohnert Park, CA: Sonoma University Press.
- Paul, R. W. (1990b). Dialogical thinking: Critical thought essential to the acquisition of rational knowledge and passions. In A.J. Binker (Ed.), *Critical thinking: What every person needs to*

- survive in a rapidly changing world* (pp. 204-223). Rohnert Park, CA: Sonoma University Press.
- Shale, D., & Garrison, R. (1990). Education and communication. In R. Garrison & D. Shale (Eds.), *Education at a distance* (pp. 23-39). Malabar, FL: Krieger.
- Van Dusen, G. C. (1997) *The virtual campus: Technology and reform in higher education*. ASHE-ERIC Higher Education Rep. Volume 25, No. 5. Washington, D.C.: The George Washington University, Graduate School of Education and Human Development. (ERIC Document Reproduction Service No. ED 412 816)
- Verduin, J., & Clark, T. (1991). *Distance education: The foundations of effective practice*. San Francisco: Jossey-Bass.
- Wagner, E. (1993). Variables affecting distance educational program success. *Educational Technology*, 33(4), 28-32.
- Weinbach, R., Gandy, J., & Tartaglia, L. (1984). Addressing the needs of the part-time student through interactive closed circuit television: An evaluation. *ARETE*, 9(2), 12-20.