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## A Comparison Study of On-campus and Online Learning Outcomes for a Research Methods Course

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## A Comparison Study of On-campus and Online Learning Outcomes for a Research Methods Course

### Abstract

Using a pretest/posttest design, student learning outcomes were examined for online learning and on-campus versions of the same course taught by the same instructor. The course was a master's-level research methods course taught in a counselor education program. Although both groups of students (online and on-campus) scored significantly higher on the posttest than on the pretest, there were no significant differences in performance between the two groups. Similarly, examination of the students' course (teaching) evaluations did not reveal any significant difference in mean course ratings between the on-campus and online learning versions of the course.

### Keywords

distance education, online education, educational technology, teaching efficacy, counselor education, learning outcomes

## **Introduction**

Higher education is becoming increasingly infiltrated by technology. The number of American college students enrolled in at least one online education course has reached the millions (Armstrong, 2011) and online higher education enrollment has been growing at ten times the rate of campus enrollment (Shea & Bidjerano, 2009). In 2010, it was estimated that over 6 million college students took at least one online course (Allen & Seaman, 2011). In 2012, over 30% of students enrolled in online learning courses were at the graduate level (U.S. Department of Education, 2014). Specifically within counselor education, online learning is becoming increasingly popular. At the time of this writing, 20 universities had CACREP-accredited online counseling master's programs in which 50 percent or more of a counseling program's curriculum was offered online or via online technologies (Council for Accreditation of Counseling and Related Education Programs, CACREP, 2016a).

Rehabilitation counselor education has been implementing online learning methods for decades (Armstrong, 2003; Crimando, Flowers, & Riggart, 2004; Hampton & Olney, 2008; Sax, 2002). In 2006, it was estimated that over 54 percent of CORE (Council on Rehabilitation Education) accredited rehabilitation counseling programs offered courses via online education (Moore et al., 2006). It is likely that this number has only grown over the last decade, given the increasing prevalence of online learning in higher education. Despite the increasing amount of reliance on online learning, information about the efficacy of such education is scarce (Hampton & Olney, 2008). More information about the process and efficacy of graduate student online learning is needed (Holzweiss, Joyner, Fuller, Henderson, & Young, 2014), particularly related to counselor education (Ting & Gonzalez, 2013).

Online education is characterized by the separation of the teacher and learner(s) for the majority of the duration of the course (Ascough, 2002). Several models of online education exist including a fully distance, or digital, model (students and faculty never meet face-to-face) and a hybrid model (students and faculty meet face-to-face for a small, pre-determined portion of the course). As technology continues to improve, universities are including videoconferencing technology (where students and instructor can simultaneously connect with each other using audio and visual communication), which may continue to widen the modalities available for online learning (Mader & Ming, 2015). Online education offers many benefits to both instructors and students including diminished commutes, ease of access for learners who have career and family obligations (Ascough, 2002; Cook, 2007; Summers, Waigandt, & Whittaker, 2005), lower costs to the university and student (Anderson, 2008), higher accessibility of education for students with disabilities and students who live in geographically rural areas (Main & Dziekan, 2012), and increased control for learners regarding how they consume the course information, based on personal needs and learning styles (Porter, Pitterle, & Hayney, 2014). Additionally, online education has been shown to require greater levels of student ownership and responsibility for learning the course material (Holzweiss et al., 2014; Porter et al., 2014; Rochester & Pradel, 2008; Ting & Gonzalez, 2013).

However, some challenges to online learning exist including student perceptions of isolation and lack of community (Cook, 2007; Lyke & Frank, 2012; Rochester & Pradel, 2008; Summers et al., 2005). Studies have highlighted the importance of instructor engagement and knowledge about online teaching and course material for gainful learning outcomes (Garrison & Arbaugh, 2007; Holzweiss et al., 2014). Although training of instructors in both course material and online course delivery are crucial to positive learning outcomes, such training often does not

take place effectively in higher education (Holmes & Kozlowski, 2014). Learner characteristics, such as motivation and technological comfort level, can also influence the educational outcomes and potential benefit of online education (Summers et al., 2005). Dropout rates have been shown to be greater in online learning environments (Njenga & Henry Fourie, 2010). Moreover, for courses and training programs that focus on helping relationships, concern exists about the transfer to an online environment of this type of skill-based learning (Ting & Gonzalez, 2013).

### **Online Teaching and Learning**

This distinct boom in online education has changed the landscape of higher education. A vast array of studies has been conducted in other fields, consistently showing no significant differences in student learning outcomes when online courses, hybrid courses, and on-campus courses are compared (Russell, 2001; Summers et al., 2005). Across undergraduate disciplines, online learning has been shown to be a sufficient learning environment for students in terms of learning outcomes and knowledge retention (Chang & Chen, 2014; Frimming, Bower, & Choi, 2013; Porter et al., 2014).

Summers et al. (2005) compared learning outcomes for undergraduate nursing students taking online or on-campus versions of a statistics course. Students were assessed throughout the course with four exams and a cumulative score for those exams served as the learning outcome measure for the course. No significant difference was found between learning outcomes of the online and on-campus student groups. Another study by Lyke and Frank (2012) compared the cumulative course learning for undergraduate students enrolled in a general Psychology course (e.g., Theories of Counseling). Students self-selected either the online or the on-campus course and took a total of four quizzes over the course of the semester. Overall, no significant difference was found in learning outcomes between the online and on-campus groups.

However, practitioner programs that focus primarily on interpersonal skills and helping relationships, such as master's-level counselor training programs, have been left to ponder how online education fits in with the traditional model of on-campus instruction. Educational programs that train human service professionals have traditionally lagged behind other fields when it comes to integrating innovative technology and digital education into the training pedagogy (Karper, Robinson, & Casado-Kehoe, 2005). The counseling field is a "high-touch" occupation, one in which human relationships and interpersonal connections are crucial to the efficacy and value of the profession (Naisbitt, Naisbitt, & Phillips, 1999). With technology infiltrating the pedagogical nature of how we train practitioners to become adept at such a high-touch profession, research is needed to evaluate effectiveness. Counselor Education has little conclusive evidence regarding the efficacy of online teaching methods (Meder, 2013; Ting & Gonzalez, 2013) regardless of course type (e.g., clinical and "high-touch" or didactic and content-focused). Given the current scarcity of data, further investigation regarding the efficacy of all types of Counselor Education core coursework is warranted.

### **Student Learning Outcomes in Counselor Education**

The Council for Accreditation of Counseling and Related Educational Programs (CACREP, 2016b) has stated that all counselor education programs must engage in ongoing evaluation regarding student performance on targeted learning outcomes. In other words, it is imperative that programs investigate and document that students are, in fact, learning the required material (Barrio Minton & Gibson, 2012) through multiple assessment measures over multiple points in time (CACREP, 2016b). With continued development of online counseling programs, this accreditation standard is particularly important as programs gauge the efficacy of

online course delivery (Reicherzer et al., 2012). To date, a paucity of literature exists on this topic (Ekong, 2006; Hampton & Olney, 2008; Meder, 2013).

One doctoral dissertation used archival data to compare the learning outcomes (using the Counselor Preparation Comprehensive Exam, CPCE) of 524 students who completed a master's-level counseling program through one of three types of learning modalities: online, hybrid, and face-to-face (Meder, 2013). The face-to-face program was delivered in a fully on-campus format; the online program was delivered fully in a distance format with the exception of two courses which required an on-campus week intensive component where students met face-to-face for experiential learning; and the hybrid program was delivered via online learning for the core, didactic courses, while the experiential courses included on-campus meetings during four weekends over the duration of an academic semester.

The CPCE contains 160 items and eight subscales including human growth and development, social and cultural foundations, helping relationships, group work, career development, appraisal, research, and professional orientation. Meder (2013) found no significant difference in the total exam scores when comparing the online and on-campus groups. However, the online group scored significantly higher than the hybrid group on the exam total score. Results showed significant differences between the online and hybrid groups; the online group scored higher on five subscales of the exam (e.g., Social and Cultural Foundations, Group Work, Career, Professional Orientation and Ethics, and Human Growth and Development). Additionally, the online group scored significantly higher than the on-campus group on one of the exam's subscales (e.g., Human Growth and Development). Three of the eight subscales showed no significant difference between the three groups (e.g., Helping Relationships, Appraisal, and Research and Program Evaluation).

Meder's (2013) data showed no subscales in which the online group scored significantly lower than the on-campus or hybrid groups. The only significantly different score was found on the Human Growth and Development subscale, which showed that the fully online group scored significantly higher. While these results are preliminary, they provide some evidence of the efficacy of online instruction for counselor preparation.

No single study perfectly addresses all concerns about the validity of its conclusions. A variety of studies are needed to examine different hypotheses about the causes of the findings. For example, Meder's (2013) study results might reflect other (unstudied) differences between the students who were in the three types of groups. With the dearth of current outcome data comparing online and on-campus learning, it is imperative that counselor education research focuses on this topic area in order to more fully understand how online learning may impact learning outcomes and overall training of master's-level counseling students.

### **Student Perception of Online Learning**

While efficacy and outcome data may be scarce, counselor education and rehabilitation counseling education researchers have focused more specifically on students' perceptions of student learning and engagement (Barrio Minton & Gibson, 2012). One counselor education program compared student perceptions of on-campus and hybrid course models for a career development course (Ting & Gonzalez, 2013). The hybrid course was held mostly online, but required four on-campus meetings over the course of the semester. The two types of courses matched in requirements, syllabus, textbook, and assignments. Generally speaking, both groups of students found their interactions throughout the course to be sufficient, although different. Results showed that students enjoyed both types of learning environments and felt as though they experienced sufficient course instruction over the semester. Ting and Gonzalez (2013) noted the



importance of creating a community-like environment online in order to replicate what students received in the classroom. This notion has been echoed in cross-disciplinary research as a crucial component to supporting worthwhile and meaningful online education (Garrison & Arbaugh, 2007; Openshaw, Schultz, & Millington, 2008).

A study completed with professional counseling students in the United Kingdom showed slightly different results in a study completed with over 200 students enrolled in either online or on-campus coursework (Blackmore, Tantam, & van Deurzen, 2008). This study found that online learning students were significantly more satisfied with course materials, were significantly more satisfied with their teachers, and spent significantly more time per week on course materials when compared with the on-campus students. Blackmore et al. (2008) showed that no significant differences existed in those students who dropped out of each modality in terms of gender, age, dependents, geographical location, and financial status. Blackmore et al. (2008) discussed the importance of facilitating a learning community between students enrolled in the online courses in order to provide empathy, support, and feedback to other learners. This notion of creating a learning community and collaborative environment between the students has been repeatedly emphasized throughout the literature in this area (Garrison & Arbaugh, 2007; Openshaw et al., 2008).

Moore et al. (2006) administered an open-ended survey to students in an assistive technology Rehabilitation Counseling course and found mixed results regarding student perception. Five positive themes emerged, including schedule flexibility, improved computer and Internet skills, positive interaction between classmates and exchange of ideas, useful course materials, and information exchange throughout the course. Three negative themes emerged including problems with technology, feeling disconnected from classmates, and the perception of

too much course material (Moore et al., 2006). Generally speaking, students were able to find both positive and negative attributes to the web-based course delivery.

Murdock and Williams (2011) compared student perceptions of online or on-campus counseling theories courses using a learning community survey. Results showed no significant difference in students' perceptions of the learning experience. Both groups responded that they experienced a sense of community within the classroom, regardless of delivery modality. Also, both groups of students responded that they felt connected to the other students and the instructor, and felt a sense of responsibility with regard to learning the course material (Murdock & Williams, 2011).

Outside of counselor education programs, but pertaining to a content course taught in the curriculum, Summers et al. (2005) analyzed differences in course satisfaction between online and on-campus statistics courses. Significant differences were found on seven of sixteen items wherein online course participants rated these items significantly lower, showing less satisfaction. Four of these items were instructor-related, including: instructor explanations, instructor enthusiasm, instructor openness to students, and instructor interest in student learning. Three items were class-related, including: quality of class discussion, quality of questions/problems, and evaluation and grading. Interestingly, the same professor taught both sections of the course, which illustrates some of the challenges of meeting student needs and expectations in an online education environment.

Holzweiss et al. (2014) completed a qualitative inquiry with graduate-level students enrolled in a fully online higher education administration program, focusing on their perspectives of online, graduate-level learning. Using written, open-ended questions, several themes emerged including: (a) importance of critical thinking activity; (b) use of instructional technology; (c)

importance of faculty engagement; (d) interactions and engagement with peers and instructors; and (e) sense of personal responsibility for learning. Overall, data showed that online graduate-level learning is potentially more intricate and nuanced and should match the developmental level of the graduate-level student in terms of complexity of thought and desire to co-create knowledge and understanding with peers and faculty (Holzweiss et al., 2014).

Overall, myriad contextual complexities exist when considering online teaching efficacy and how it relates to student perception of the course and the instructor (Summers et al., 2005). Research is needed to decipher more about the interaction of the student, instructor, and overall course factors that determine learning outcomes, student engagement in the learning process (Lyke & Frank, 2012), and the critical components for successful graduate-level training (Holzweiss et al., 2014). In addition to further assessment of the efficacy of online teaching, future research in counselor education should also focus on these multi-faceted components.

### **The Current Study**

Ongoing investigation into the efficacy and usefulness of online course delivery in counselor education is crucial as the field continues to increase dependency on technology and digital instruction (Ekong, 2006; Reicherzer et al., 2012; Ting & Gonzalez, 2013). Although existing literature shows positive trends that support the continued use of online learning in counselor education, especially as it relates to positive student perception of this learning modality, outcome data related to the efficacy of online teaching modalities is scant, particularly when focused on graduate-level learning (Holzweiss et al., 2014). The current study investigated two research questions: (a) do differences exist in student learning outcomes for online and on-

campus versions of a master's-level counseling research methodology course taught in a counselor education program, and (b) do differences exist in student course evaluations between the two modalities of course delivery.

## **Methods**

### **Participants**

Participants included 40 master's-level counseling students in a CORE-accredited Rehabilitation Counseling program located in the southeastern United States. Twenty students were in the online learning group and twenty students were in the on-campus group.

The on-campus group of students, taught in the Fall semester of 2011, included seventeen females (85%) and three males (15%). Thirteen of the students identified as Caucasian (65%); four identified as Black/African American (20%); three identified as members of another racial group or more than one racial group, or did not respond to the university's request for identification of racial background (15%). The mean age of students in the on-campus group was 32 years, with a range from 25 to 57 years. By decade, students in their 20's comprised 45% of this group; students in their 30's were 40% of the total; students in their 40's constituted 10% of the group; the remaining 5% included students in their 50's.

Demographics for the online group of students, taught in the Spring semester of 2014, were similar, although the majority of students were members of racial minority groups or unspecified racial groups. Fifteen students were female (75%), and five were male (25%). Nine of the students identified as Black/African American (45%); eight identified as Caucasian (40%); three identified as members of another racial group or more than one racial group, or did not identify racial background (15%). The mean age of students in this group was 31 years, with a range from 23 to 58 years. By decade, 40% of the students in the online group were in their

20's; 30% of the online students were in their 30's; 15% of the students in the online group were in their 40's; and 15% of the online students were in their 50's.

## **Procedures**

This study used data from an experiential class assignment designed to illustrate an example element of program evaluation. Students in both classes were required to complete a course pre-test and course post-test as one measure of learning outcomes for the course. Although completion of the pre-test and post-test was a required assignment, the actual scores on these tests were not factored into the students' grades in the course. This assignment was then discussed in class throughout the semester, to illustrate principles of program evaluation (such as how to measure change), instrument development and construction (such as how to minimize measurement error when writing multiple choice questions, and how to appropriately sample the domain to ensure content validity), and selection of appropriate statistics for specific research designs (such as using correlated measures tools for pre/post-test designs). Although the study was already approved by the university's Institutional Review Board as exempt from review because it focused on assessing the efficacy of educational methods, data were de-identified before analysis to address potential concerns about a researcher other than the instructor viewing the scores for any given student without that student's express consent.

All students in both sections of the course completed the course pre-test. One student did not complete the course for personal reasons, and did not take the course post-test. Another student started the post-test and answered a few questions, but did not answer the rest of the questions, invalidating the resultant score. Neither of those students were counted in the results of this study; only the 40 students who completed both the pre-test and post-test were included. Information about demographics for the two students who were excluded from the study is not

provided in this article, because (a) the sample size is so small that meaningful conclusions are not possible, and (b) there could be risk of identifying those students based on demographic characteristics, without their consent. Demographic data to describe the 40 students who completed both measures were retrieved from university records and summarized for this article, but were not connected in any way to specific student responses to the pre/post instruments or to the teaching evaluation results.

At the beginning of the respective semester (August 2011 or January 2014), the instructor emailed all students enrolled in the course and informed them of the course pre-test assignment, due the first week of class. The post-test was the final assignment for the course, due the final week of the semester. The pre/post measures were conducted through the online learning management system (e.g., Blackboard) for both groups. At the end of the semester, students were also asked to fill out a standard department course evaluation, and these results were delivered anonymously to the instructor.

The same instructor, who had more than ten years of experience teaching research methods courses through both online learning and on-campus modalities, taught both courses. The instructor holds a master's degree in Counseling and Ph.D. in Rehabilitation Psychology with a minor in Psychometric Methodology. The instructor has published literature focused on how to teach research methodology to practitioners (Reid, 2014) and has served on the research committees of national organizations, including CACREP and the Commission on Rehabilitation Counselor Certification (CRCC). The same basic course notes, course information, textbook, tests, and assignments were used with each group. In essence, both groups were delivered the same course material and held to the same syllabus expectations and deadlines. What differed was the course delivery method.

The online learning class members read online lectures and completed online tutorials. They were required to post weekly discussion responses and engage in online interactions with other classmates regarding the readings and other course assignments. The online learning class members used text-only modalities to communicate with one another for these assignments throughout the semester. The instructor also participated actively in the online forum discussions, primarily using a Socratic method to ask questions designed to help students discover answers for themselves.

The on-campus class met weekly for two and half hours, for traditional on-campus lectures and discussions regarding the readings and other assignments. The instructor also used a Socratic method with this group to actively engage the on-campus students in the learning process. For both classes, the instructor was also available via phone or email for student questions and general communication about the course.

### **Measures**

The pre/post measure used in this study was a 100-item, multiple-choice exam developed by the instructor. This exam was derived from the textbook and course material that the instructor would be teaching over the course of the semester.

Additionally, course (teaching) evaluations were examined for information about student perceptions regarding their experience within the course. Course evaluations were 23 items long and based on a Likert-type scale with the following anchors: *5-Excellent*, *4-More than adequate*, *3-Adequate*, *2-Less than adequate*, and *1-Poor*. Sample questions included: (a) instructor presented a well-organized course, (b) instructor demonstrated thorough knowledge of the course material, (c) instructor used effective teaching methods, (d) instructor seemed enthusiastic about

course material, and (e) instructor encouraged students to participate in class. A higher mean score reflects a more favorable evaluation.

## Results

Pre/post-test data were collected from each participant. Pretest results were collected before any lectures were delivered or posted and posttest results were collected at the end of the semester, approximately four months later. A repeated measures ANOVA was conducted to compare the changes between pretests and posttests for the on-campus and online groups. Additionally, the course evaluation item ratings were averaged for each course and an independent samples *t*-test was completed to look for potential group differences in student perception of the course and instructor.

The first research question, is there a significant difference between the two teaching modalities in impacting the content knowledge gain for students over the course of one semester, was answered using a repeated measures ANOVA. Data showed that although there was a significant difference between the pretests and posttests for both groups [ $F(1, 38) = 149.276, p = .000$ ], there was no significant difference in scores between the two modalities [ $F(1, 38) = 1.251, p = .270$ ].

The second research question, does the mean evaluation score of the online learning participants significantly differ from the mean evaluation score of the on-campus participants, was answered using a two-tailed, independent samples *t*-test. Out of 40 participants, 36 completed the anonymous and voluntary course evaluations (19 of 20 on-campus students,  $M=4.2$ , and 17 of 20 online learning students,  $M=4.75$ ). Data showed no significant difference between the two modalities regarding the participant perception of the course, as rated in the course evaluations [ $t(34) = 1.436, p > .05$ ].



## Discussion

The field of counselor education is increasingly relying on online learning modalities (CACREP, 2016a; Moore et al., 2006) with 20 universities offering at least one counseling program in a learning format where at least 50% of their coursework is offered via online. Ongoing investigation into the efficacy of online course delivery in counselor education is crucial as the field continues this reliance on technology and digital instruction (Ekong, 2006; Reicherzer et al., 2012; Ting & Gonzalez, 2013). However, very little literature has yet examined whether student learning outcomes in online counselor education programs are equivalent to their traditional, on-campus equivalents (Meder, 2013). Overall, current literature shows positive trends that support the use of online learning in higher education, although some of this research is based on an undergraduate learning experience (Chang & Chen, 2014; Frimming et al., 2013; Porter et al., 2014; Russell, 2001). However, research within the counseling field has shown positive results regarding student perception of this learning modality (Blackmore et al., 2008; Ting & Gonzalez, 2013). To add to the current body of knowledge specifically related to the field of counselor education, the current study investigated the academic outcomes of a master's-level research in counseling course by comparing learning outcomes for students in an on-campus and online versions of the same course.

Data showed no significant difference between the on-campus and online learning groups of students in their knowledge gains over the course of the semester. This finding adds validation to related studies that found no significant differences in learning outcomes between on-campus and online learning modalities (Chang & Chen, 2014; Frimming et al., 2013; Porter et al., 2014; Russell, 2001; Summers et al., 2005). While much of the previous research has focused on fields outside of counselor education, the current data is important because it focuses

solely on master's-level counseling student and core counseling curriculum learning outcomes. The current results corroborate Meder's (2013) finding that no significant outcome difference existed between the types of teaching modality, and support the contention that online learning is an equally acceptable and efficacious teaching modality when compared with traditional, on-campus learning. These results also address an uncontrolled factor in Meder's study, by ensuring that differences in knowledge before taking the course were taken into account.

For both on-campus and online learning groups, a significant difference was found between the pretest and posttest scores. These data show that regardless of the teaching modality, students scored significantly higher on the course content measure after having taken the course. While this may seem perfunctory to report, the data show course efficacy in promoting significant learning over the course of the semester. This type of outcome measure and documentation of learning is important for a wide variety of contexts, including program evaluation (Barrio Minton & Gibson, 2012; CACREP, 2016b).

The data also showed no significant difference between the means of the course evaluations of the modalities. The course means for the total evaluations were 4.26 out of 5 for the on-campus students and 4.75 out of 5 for the online learning students. While there was no significant difference between the two, both totals show a trend toward positive evaluation scores out of 5 possible total points, lending support to the conclusion that the participants perceived both course modalities as favorable learning environments. This finding relates to data found by Murdock and Williams (2011) who compared student perceptions between online and on-campus counseling theories courses and showed no significant difference in students' perception of the learning experience. Both groups responded favorably to the learning experience and

stated that they felt connected to the other students and the instructor, and felt a sense of responsibility with regard to learning the course material (Murdock & Williams, 2011).

In the current study, student comments were also favorable for both modalities. In the on-campus course, students wrote the following: “very passionate professor”; “I enjoyed this class”; “I appreciated the instructor’s enthusiasm, humor, and approachability”. In the online learning course, students wrote the following: “the instructor is very compassionate and extremely knowledgeable”; “the instructor is excellent”; “this was a very informative course”. While these comments are anecdotal, they provide some preliminary insight into the similarities of student perception of the course regardless of the teaching modality. The notion of an online community and the ability for the instructor to facilitate a strong learning environment is crucial for online learning to be successful (Garrison & Arbaugh, 2007; Openshaw et al., 2008). Also, data show that graduate students need to feel connected to the instructor and engaged in a way that requires and promotes critical thinking (Holzweiss et al., 2014). Although the current study did not investigate the perception of community, connection between members, or the role of the instructor specifically related to student satisfaction, these components would be an area ripe for future research, as there is currently a dearth of information regarding how graduate students learn online (Holzweiss et al., 2014).

### **Strengths and Limitations**

This study is one of few that focus solely on counselor education online learning outcomes. While the participant number is small, the data show compelling evidence that no significant differences in learning outcomes exist between on-campus and online learning modalities for this type of counselor education course. The pre/post measure was 100 items, which adds to the power of the study and the documented findings. The pretest/posttest design,

with each student serving as his/her own control, helps control for differing baseline levels of knowledge or experience between groups. The data show overall significant growth in student learning over the course of one semester, as well as similarly favorable course evaluations between the modalities. This methodology shows promise for additional research in counselor education to document student learning outcomes in a variety of content areas, and to validate the use of online learning techniques in pedagogical development.

One potential limitation is that students were able to self-select into either the online or on-campus course modality. Over the course of their programs, students that identified as on-campus learning students had opportunities to take the Research course in either learning modality. This self-selection for some students into either the online or the on-campus course offering may have confounded the results, as participants were not randomly placed into each type of course.

A second limitation is the potential influence of history or cohort effects, given that one version of the course was offered in 2011 and the other in 2014. This separation in time was required by constraints of matching instructor availability with the semesters in which the course was offered in the necessary format. At the time of data collection, the university was not able to offer the same course taught by the same instructor in both online and on-campus formats in the same semester.

Another potential limitation is the nature of the course material. Because a research methodology course is somewhat didactic in nature, it may lend itself more suitably to online course delivery than is the case with a more skill-based or technique development course (Ting & Gonzalez, 2013). More research should be conducted to compare online learning and on-campus versions of “high-touch” courses in order to assess for potential outcome differences

(e.g., Group Counseling, Counseling Techniques, Multicultural Counseling, or Couples and Family Counseling courses). Additionally, campus-intensive formats are often used to supplement online courses that are skill-based. These hybrid-type formats should also be included in relevant studies to compare the wide variety of learning modalities, given that Meder (2013) found mixed results when comparing hybrid-format outcomes with fully online or on-campus formats. Additionally, Holzweiss et al. (2014) discussed the importance of master's-level training to incorporate critical thinking skills that challenge adult learners. More research should be conducted regarding how online learning counseling courses are meeting this need. For example, comparing critical thinking outcomes of online learning incorporating a Socratic method versus outcomes when the instructor takes on just a didactic role would be important.

### **Conclusion**

Counselor education researchers must strive to adequately research any potential differences in efficacy relating to online learning. As the field continually moves toward the incorporation of online learning courses and fully accredited master's-level and doctoral programs, it is essential to examine whether types of instructional modality result in differences in learning outcomes for counseling students. Because the counseling field is a "high-touch" occupation, one in which human relationships and interpersonal connections are crucial to the efficacy and value of the profession (Naisbitt et al., 1999), any discrepancies in student perception of learning, as well as actual learning outcomes between teaching modalities must be identified. This study provides evidence of the equivalence of learning outcomes for on-campus and online learning instruction of the same counselor preparation course taught by the same instructor, but additional research is needed to replicate the study with other content areas and other instructors.

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