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Article 2

The Research Training Environment and Its Potential Influence on Graduate Level Counseling Students' Attitudes Toward and Interest in Research

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Abstract

Many master's level mental health practitioners exhibit negative attitudes toward and lack of interest in research and do not see the relevance to clinical practice. Practitioners and current graduate students often experience their first exposure to research in the research training environment of their graduate program. This paper will examine how graduate counseling students' perception of the experience may be associated with attitudes toward and interest in research.

Training to prepare future mental health professionals to evaluate outcome research and apply the findings to clinical practice has been of considerable interest in the field of mental health since the Boulder Conference in 1949. The conference called for training to promote research and practitioner skills in the education of counselors, therapists, psychologists, social workers, clinical psychologists and other professionals in mental health. The model came to be known as the scientist-practitioner model (Barkham & Mellor-Clark, 2003). Gelso (2006) and Rodriguez and Toews (2005) argued that most students enter graduate training programs with the goal of becoming practitioners and may not see the value in continuing to evaluate research to keep practice current and research-based in their postgraduate careers. In the research training environment, negative attitudes toward research are more prevalent among master's level students than among students at the doctoral level, as suggested by King and Otis (2004). Some students may have misconceptions about research courses, believing that the material will directly support their clinical skills (Sizemore & Lewandowski, 2009).

Typically, research courses do not focus on helping the client directly. Rodriguez and Toews (2005) argued that traditional research methods courses focus on how to

conduct research and that learning how to evaluate and understand research is a by-product students learn independently while writing research papers. Moreover, students find it difficult to see the relevance and application of outcome research, therefore producing a barrier to learning about research methodology. This single barrier could influence attitude and interest in research methodology as well as post graduate evaluation and understanding of current literature and its application to clinical practice.

Reisetter, Korcuska, Yexley, Bonds, Nikels, and McHenry (2004) asserted that master's and doctoral level students may not comprehend the connection between clinical application of outcome findings in mental health research and complex quantitative research designs. This may explain, in part, why students ". . . are disengaged from research" (Reisetter et al., p. 3). Further, students may not only view research as separate from their educational lives, they may view it separately from their professional lives and therefore choose not to read scholarly publications. Likewise for faculty, if more emphasis is put on achieving tenure than research activity, the potential to lose sight of the importance of instilling interest in research in students could be minimized.

Master's level programs are often students' first exposure to education that underscores the importance of research and its relevance to clinical practice. These programs are in a position to increase students' interest in research by "shaping attitudes" of students (Gelso, 2006, p. 4). Love, Bahner, Jones, and Nilsson (2007) argued that support and mentoring from faculty had the strongest influence on student satisfaction regarding individual research experiences and faculty's ability to manage and facilitate research teams with team experiences. Faculty's excitement toward and involvement in research portray a positive model which may, in turn, promote skills and motivation to consume and use research.

The American Counseling Association *Code of Ethics* (ACA; 2014) states, "Counselor educators promote the use of techniques / procedures / modalities that are grounded in theory and/or have an empirical or scientific foundation" (p. 14). Although the Code urges counselor educators to serve as role models, negative attitudes toward research among faculty could impede student interest. There have been few studies that examined faculty attitudes toward and interest in research, as well as faculty research self-efficacy. Bard, Bieschke, Herbert, and Eberz (2000) identified potential factors that could influence interest in research in rehabilitation counseling faculty and students. Factors included research training environment (RTE), personality traits, research self-efficacy, and outcome expectations. Faculty's perception of their graduate training environment and research self-efficacy has been closely linked to participation in research activity. Hence, faculty with low research self-efficacy are less likely to participate in research activity (Atieno-Okech, Astramovich, Johnson, Hoskins, & Rubel, 2006). Conversely, if they have higher levels of research self-efficacy, they may engage enthusiastically in research activity.

It is important to note faculty's influence on students' perception of the training environment. Hollingsworth and Fassinger (2002) examined the research training environment and mentoring experiences in counseling doctoral students' research productivity. The results revealed a strong correlation between the training environment and mentoring experiences, and ". . . the training environment predicted students' mentoring experiences and their research self-efficacy" (Hollingsworth & Fassinger, 2002, p. 324). Mentoring experiences, as explained by Gelso, Mallinckrodt, and Judge

(1996), include faculty behavior related to research mentoring as enthusiasm for research, reinforcement for research activity, acknowledges flaws in experimental design, exposes students to different research methods, and shows empathy and authenticity towards students. However, Hill (1997) and Mallinckrodt, Gelso, and Royalty (1990) described the mentoring relationship as that of the counselor-client alliance and "micro-environment" of the larger department or institution, respectively. Faculty mentoring is critical to research training, and negative research experiences for both students and faculty could increase anxiety and influence attitudes.

Attitudes Toward Research Methods

Attitudes can be defined as how people respond favorably or unfavorably to another person, event, object, or an idea (Bohner, & Dickel, 2011; Papanastasiou & Papanastasiou, 2004). Most master's level students begin their graduate training with negative attitudes toward research before they take the first research methods course (Bard et al., 2000; Papanastasiou, 2005; King & Otis, 2004). This could be a result of limited exposure to the research training environment in undergraduate training. Further, students may be more focused on attaining clinical skills and do not see the relevance of a research methods course (Sizemore & Lewandowski, 2009). Researchers have been studying students' attitudes toward research for years in counseling, education, and psychology literature (Bard et al., 2000; Ciaracco, Lewandowski, & Volkom, 2013; Lambie & Vaccaro, 2011; Lei, 2008; Manning, Zachar, Ray, & LoBello, 2006; Papanastasiou, 2005; Reisetter et al., 2004; Sizemore & Lewandowski, 2009; Zachar & Leong, 1992). From the earliest literature to the most current, there has been little change in students' attitudes toward research. Most graduate programs require students to take one research methods course in order to satisfy state licensure requirements as well as CACREP standards if they are accredited. However, quantitative experimental design is usually the focus of the course.

Incorporating both quantitative and qualitative comparison, Wang and Guo (2011) investigated differences in students' attitudes toward a required research methods course. Researchers examined attitudes of two groups of master's level students; one group was required to participate in a research project to complete the requirements of the degree, the other group did not have a research project requirement. In the quantitative inquiry, a research attitude survey created by the researchers was used; the survey consisted of 20 items and incorporated a 7-point Likert scale. Four of the 20 items were computed into a composite score that revealed ". . . participants' attitude toward inquiring research knowledge through research methods classes" (Wang & Guo, 2011, p. 4). A Levene's test and ANOVA revealed non-significant results. Interestingly, the qualitative comparison revealed that students who were required to participate in a research project had more positive attitudes toward the research methods course. The researchers reported that the two groups' written responses revealed a difference in attitudes towards research methods. Some example comments include: "I want to do research," "I think I would consider taking another research class on my own interests," and "I like to meet challenge without fear." Students who were not required to participate in a research project conveyed more negative attitudes such as, "I don't like research classes," "I didn't have the time to doing research for fun, and I have a family;" and "I will take only the required." Concerning future research participation, students who participated in a

research project commented, "Afraid of,"; "Do not research," and "No time." Conversely, students who participated in a research project stated: "It is a good opportunity to learn more," "Sure – my data input will surely make a difference," and "I will benefit from a group activity/effort." Further, the researchers point out that the differences in attitudes toward a research methods class will likely affect attitude toward participation in further research activities (Wang & Guo, 2011, pp. 5–6).

In a qualitative inquiry exploring doctoral students' experiences while enrolled in an introductory course in qualitative methods, Reisetter et al. (2004) posited five of the six students had positive experiences. Moreover, the researchers noted four emerging themes:

> (1) Perceived worldview congruence. The researchers posited that worldview congruence was the strongest theme to manifest from the data. The view incorporates a ". . . social construction view of knowledge, which led students to reject absolutes, to consider the power of social discourse and to celebrate differences."
>
> (2) Perceived counseling theory and skills congruence. The open-ended nature of qualitative research is similar to gathering information from a client. Students can understand the similarities between humanistic and/or social constructionist counseling theories and qualitative research design. Hence, similar skills such as observation, conversation, reasoning, conceptualization, and analyzing skills are needed for both paradigms.
>
> (3) Perceived research identity and professional viability. Students' perceptions of themselves as academic professionals were affirmed by their positive view of qualitative research. However, they did not dismiss the importance of quantitative research.
>
> (4) The holistic nature of their perceptions and experiences. Students' comments ". . . indicated that exposure to qualitative methods was a holistic experience rather than a compartmentalized one." Furthermore, students could see how qualitative methods helped them to view their roles as individuals, researchers, and clinicians. (Reisetter et al, 2004, pp. 10–12)

Perhaps the similarities mentioned in the second theme, counseling theory and skills congruence, would explain students' positive attitudes toward qualitative methods. The rejection of absolutes and acceptance of differences mentioned in theme one could also explain students' view of qualitative research. Finally, in some cases, students developed a research identity as a result of their exposure. Limitations of Reisetter et al. (2004) included low participant numbers (therefore, generalizability would be questionable); the influence of the instructor was not considered; only one course was examined; and longitudinal perspective was not considered. Despite the limitations, the study demonstrated that counseling students can learn to see the value of qualitative research in their personal, academic, and clinical roles.

Students who comprehend the value of research in their professional and personal lives have more positive attitudes toward and interest in research (Reisetter et al., 2004). Factors that change graduate students' attitudes toward a research methodology course was investigated by Lei (2008). Lei argued that the strongest factor that changed

students' attitudes toward a research methods course was a positive correlation between interest and usefulness. The literature relevant to graduate students' attitudes toward a research methods course is limited (Lei, 2008; Reisetter et al., 2004; Wang & Guo, 2011). However, studies investigating undergraduate students' attitudes toward research reveal interesting findings that could support further examination of graduate students' attitudes. Papanastasiou (2005) explored undergraduate students' attitudes toward research after completion of a methodology of educational research course. She argued that attitude is multidimensional and identified five factors of students' attitude: (1) usefulness of research, (2) anxiety, (3) affect indicating positive feelings about research, (4) life relevancy of research to the students' daily lives, and (5) difficulty of research (Papanastasiou, 2005, p. 23).

Ciaracco and colleagues (2013) further supported "usefulness of research" with their study investigating undergraduate students' attitudes after a multifaceted approach was used in teaching a research methods course. Although the study was investigating the relationship between students' attitude and teaching methods, the findings support the importance of students' perception of the utility of research and the effect on their attitudes. In a similar study investigating the relationship between practitioner and scientist interests and exposure to a research methods course, Manning et al. (2006) argued that exposure to a research methods course was related to the loss of interest in practitioner activities in psychology majors. The researchers hypothesize that psychology majors may have preconceptions of what a psychologist does, perhaps more clinician-type activities opposed to researchers. Furthermore, Manning et al. suggested perhaps the method in which research information is disseminated would have more influence on students' attitudes toward and interests in research. Graduate students who have positive experiences in the research training environment may be more inclined to implement evidence-based practice in their work with clients. Evidence-based practice (EBP) is the integration of the best research available and extensive knowledge of client characteristics (American Psychological Association [APA], 2005).

Educators in counseling are ethically obligated to produce students that can evaluate and understand outcome research and evidence-based practice (American Counseling Association, 2014; APA, 2005; Council for Accreditation of Counseling and Related Educational Programs [CACREP], 2009). Implementing EBP training in counselor education programs could have a positive influence on students' attitudes toward using EBP. Patel, Hagedorn, and Bai (2013) examined counselor educators' attitudes toward EBP and barriers to inclusion of EBP in counseling training curricula. Patel and colleagues argued that counselor educators with a clinical focus had more positive attitudes toward implementation of EBPs than those with a vocational focus.

Nelson and Steele (2007) argued that postgraduate master's and doctoral level clinicians' attitudes toward implementation of EBPs were a significant predictor of EBP use, and that clinicians who viewed treatment research as more relevant to their own practice were more likely to implement EBP. However, many entry-level counselors struggle to identify and implement effective treatment, and may lack the ability to understand research and the process of implementing EBP in postgraduate clinical practice (Mellin & Pertuit, 2009). Optimum care for clients is the main goal in treating mental health, and clinician evaluation and implementation of outcome research ultimately affects client care (Myers, Sweeney, & White, 2002). If entry-level counselors

struggle to understand outcome research, they may become aversive towards outcome research exhibiting little interest and being less likely to implement EBP.

Interest in Research

The construct of interest in research is based on the social cognitive theory (Bandura, 1986) and the social cognitive model of interest development (Lent, Brown, & Hackett, 1994) and is defined as a compilation of personal inputs such as age, gender, social interests, artistic interests, and investigative interests and environmental inputs such as the research training environment. Social cognitive theory is not the focus of this review; however, it is important to note its influence in the literature regarding students' interest in research. Lent et al. (1994) pulled from Bandura's (1986) social cognitive theory to develop a framework to study both career and academic behavior by attempting to provide stronger links from Bandura's theory to career behavior. Bandura's social cognitive theory is one of reciprocal causation; meaning when factors such as environmental influences, cognition, behavior, and other personal attributes interact they affect each other at different levels (e.g., strength).

Lent and colleagues (1994) argued that people ". . . form enduring interests. . ." (p. 89) in those activities which they do well and anticipate a positive outcome; thus, it is difficult for research interest to grow if a potential outcome is seen as negative. Moreover, the researchers suggested that Bandura's (1980) theory explained these processes ". . . assumed to play an important role in guiding psychosocial functioning". (p. 83). The framework of Lent et al. emphasized three mechanisms of social cognition: (1) "self-efficacy beliefs, (2) outcome expectations, and (3) goal representations." (p. 83). Based on both the Lent et al. model and Bandura's theory, students' interest may be influenced by outcomes of life decisions as well as perception of their abilities to perform certain tasks.

Counseling education programs, both master's and doctoral level, are designed to implement the scientist-practitioner model, which emphasizes clinical and research modalities (Reisetter et al., 2004). Most students enter a program with higher interest in learning clinical or counseling techniques than in understanding outcome research studies and the application of findings in clinical practice. Several researchers have explored graduate students' interest in research while enrolled in a research methods course (Deemer, Martens, Haase, & Jome, 2009; Deemer, Martens, & Podchaski, 2007; Kahn, 2001; Lambie & Vaccaro, 2011; Reisetter et al., 2004; Wang & Guo, 2011). Lambie and Vaccaro (2011) investigated research interest in doctoral counselor education students and its relationship with students' perception of the training environment, students' research self-efficacy, and students' year in the program. The researchers argued that a significant relationship existed between students' interest in research and their research self-efficacy, suggesting that students with higher interest in research had higher research self-efficacy than students with lower interest in research. Further, Lambie and Vaccaro posited that those students with higher interest in research and participation in writing scholarly articles may increase their research self-efficacy. Lambie and Vaccaro were the first to examine relationships of these constructs concurrently, which might explain the paucity of studies on this topic. As with any research study, there are limitations to consider when interpreting the results. First, the sample was selected purposefully from CACREP programs only. Second, sample size (N = 89) was small, limiting

generalizability. Third, the study used self-report of participants, which may have allowed students to self-select in participation as a result of being influenced by their interest in research. Although Wang and Guo (2011) investigated graduate students' attitudes toward research, they argued that students' responses to survey questions regarding required and additional research methods courses revealed ". . . lack of interest and motivation in learning research methods" (p. 5). Furthermore, students whose primary focus is on clinical training would not be interested in taking additional research methods courses or participating in research projects.

The type of research methods course students are enrolled in should be considered when evaluating students' interest. According to Reisetter et al. (2004), graduate students' attitudes were ". . . strongly positive" after taking a qualitative methods course (p. 7). Moreover, students perceived that skills needed to do qualitative research were consistent with skills they were learning to be effective counselors. Again, participant numbers were small (N=6); however, findings support Lei (2008), who posited a positive correlation between interest in research methods and its usefulness. Perhaps implying if students can see the relevance of research in their academic, professional, and personal lives, they may foster more interest in research during a research methods course and potentially more interest in research as it applies to EBP.

Some studies have explored students' interest in research using Lent and colleagues' (1994) social cognitive career model (Bieschke, Bishop, & Herbert, 1995; Bishop & Bieschke, 1998). Framework for the model was applied to the investigation of interest in research in counseling psychology doctoral students, rehabilitation counseling doctoral students, as well as faculty members in masters and doctoral programs in rehabilitation counseling. Bieschke et al. (1995) examined rehabilitation doctoral students' interest in research and the relationship to research training environment, research self-efficacy, and outcome expectations. Outcome expectation, as defined by the researchers, is a student's expected outcome after a specific behavior. The researchers suggested that students' outcome expectations were the only variable that correlated with interest in research. However, the authors noted that the study findings were not consistent with Lent et al.'s (1994) suggestions that both research self-efficacy and outcome expectations have an equal effect on students' research interests. On the contrary, with regard to Lent et al.'s model, Bishop and Bieschke (1998) argued that findings support the development of doctoral counseling psychology students' interest in research with application of Lent et al.'s social cognitive model. Students' outcome expectations and future interest in research was empirically supported. The data from these two studies was reanalyzed to compare findings related to interest and outcome expectations (Bard et al., 2000). Bard and colleagues posited, "The most noteworthy finding was the large amount of variation in research interest accounted for by outcome expectations. . . " in doctoral faculty and students (p. 53). Although findings support the studies that were compared, low response rate in the original studies, Bieschke et al. (1995) and Bishop and Bieschke (1998), 46% and 41% respectively, is a limitation to be noted as well as the increased risk of Type 1 error with the reanalysis of data. These studies laid the foundation for research exploring graduate students' interest in research and its relationship with potential predictors.

Achievement goal theory, specifically mastery approach goals, was investigated as a predictor of students' interest in research (Deemer et al., 2007). Deemer and

colleagues (2007) explained achievement goal theory as a focus on why students try so hard to achieve goals they set for themselves. Mastery approach goals encompass mechanisms like "hope for success" directed at learning and developing skills. The researchers examined the relationship between mastery approach goals and interest in research in counseling psychology doctoral students and argued that interest in research was positively associated with students' motivation to master skills in research-oriented tasks. Students' year in program was also examined as a covariate. Deemer et al. (2007) posited that students' interest declined during the course of training, suggesting burnout as a result of the frustrating and lengthy dissertation process. Study limitations to consider are self-selection bias in who responded, students with career goals that include academia may have been more interested in responding, self-selection bias in how questionnaires were distributed, those training directors interested in research may have been more encouraging to students to respond, and population was limited only to counseling psychology students. In a similar study, Deemer et al. (2009) predicted that mastery approach goals would mediate the relationship between research interest and perception of the research training environment. The researchers suggested that the relationship between research interest and perception of the research training environment can be explained by changes in students' motivation to become proficient at research-oriented tasks in addition to ". . . expectations of being rewarded for conducting research." Moreover, ". . . mastery approach goals were a significant mediator of the RTE-research interest relationship." (Deemer et al., 2009, p. 256). The researchers suggested that students may have perceived the training environment as having an influence on their goal-setting behavior, especially if they were exposed to faculty modeling research behavior.

Perception of the Research Training Environment

Graduate students' perception of the research training environment has been shown to have a positive correlation with students' interest in research (Bard et al., 2000; Bishop & Bieschke, 1998; Kahn & Miller, 2000; Lambie & Vaccaro, 2011). In their study examining the research training environment of counseling psychology doctoral students, Hollingsworth and Fassinger (2002) argued that research mentoring experiences and research self-efficacy were significant predictors of research productivity, suggesting that students' perceptions of the research training environment is a significant construct when considering scholarly production. An effective research training environment can foster students' excitement and commitment in research, as well as increased research self-efficacy (Kahn & Miller, 2000).

Conclusion

Many programs do not address students' research attitudes and interests as one of their main training goals (Gelso, 2006). Gelso (2006) suggested six theoretical propositions that could enhance the RTE for graduate students: "(1) Faculty model appropriate scientific behavior; (2) Scientific activity is positively reinforced in the environment, both formally and informally; (3) Students are involved in research early in their training and in a minimally threatening way; (4) It is emphasized during training that all research studies are limited and flawed one way or another; (5) Varied approaches

to research are taught and valued; and (6) Students are shown how science and practice can be wedded." (p. 6). If a training program implemented just one of these propositions, it could enhance the learning experiences of students in the research training environment. Perhaps changing the way research methods is taught in the classroom could enhance students' interest in research as well as influence attitudes. For example, Ciaracco et al. (2013) used a multifaceted approach to teach research methods to undergraduate students and posited the importance of students' perception of its usefulness and the association with their attitudes. Another example might include reviewing single case studies and qualitative research design from peer-reviewed journal articles to attract graduate students' interest. One such teaching and learning strategy does use peer-reviewed journal articles to teach research methods. The strategy is called C.R.E.A.T.E., ***C***onsider, ***R***ead, ***E***lucidate hypotheses, ***A***nalyze and interpret data, ***T***hink of the next ***E***xperiment, and was developed by biologist Sally Hoskins from City College New York (CCNY) to help undergraduate students understand research methodology and hopefully influence more interest in science (Hoskins, Stevens, & Nehm, 2007; Hoskins, 2008).

If instructors used more experiential teaching methods to show students how outcome research applies to clinical application, students may see the relevance. More importantly, if students can see the usefulness of research in their academic, clinical, and personal lives, then perhaps they will not be averse to reading and understanding research and potentially participating in evidence-based practice.

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