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In rehabilitation counselor education there is a large emphasis directed toward students becoming a scientist and reflective practitioners (Bellini & Rumrill, 1999; Heppner, Kivlighan & Wampold, 1999; Koch, Arhar, & Rumrill, 2004; Koch & Arhar, 2002; Koch, Arhar, & Wells, 2000). At the core of these constructs is the ability to analyze, synthesize, and evaluate research to improve performance and client outcomes. Those within the health care profession must use research as a foundation for client practices (Birks, 2011). Following trends in healthcare and education, indications are that practitioners will be increasingly accountable for demonstrating the benefit of services. Students who are unprepared to evaluate their practice will lack baseline rates of effectiveness. It is not possible to show improvement without knowing one's baseline.

More recently, the process of knowledge translation (KT) has been advocated for as a needed proficiency for effective rehabilitation counselors (Johnson, Brown, Harniss, & Schomer, 2010). KT can be defined as "a process through which research evidence is synthesized for, and communicated to researchers, clinicians, consumers, and policymakers so these constituent groups can make informed decisions about research agendas, providing and receiving interventions, and social and health policy" (Johnson, et al. 2010, p. 239). Inherent in KT are scientist and reflective practitioner skills plus the ability to communicate and collaborate with stakeholders regarding the effective use of evidence to guide practice.

If students are going to successfully transition to professionals they must be able to effectively perform these skills to evaluate their own practice for relevance and effectiveness. However, minimal research has been conducted on counseling pedagogy and how to educate students to become effective professionals

In rehabilitation counselor education there is a large emphasis directed toward students becoming reflective practitioners. However, minimal research is conducted in rehabilitation counseling on evidence-based pedagogy to ensure students become effective and reflective practitioners. This study investigated the experiences of students enrolled in a research methods course and examined how instruction influenced (or did not) research value and utility. The findings suggest students moved from being outsiders of research, to research apprentices. Pedagogical suggestions are made to increase the value and utility of research in everyday practice.

Keywords: Rehabilitation Counselor Education, Research Education, Reflective Practitioner Preparation, Qualitative Research

(Guiffrida, 2005; Kiener, 2007; Sexton, 1998). A study surveying rehabilitation professionals illustrated a lack of importance in research within the Commission on Rehabilitation Counselor Certification examination (Leahy, Muenzen, Saunders, & Strauser, 2009). Interestingly in this same study, rehabilitation professionals reported that 92% of their knowledge of "interpretation and application of research findings" and 71% of their "evaluation procedures for assessing the effectiveness of rehabilitation services, programs, and outcomes" were obtained during education (Leahy et al, 2009, p. 103). These findings may suggest that students perceive the importance of research but do not know how to effectively integrate research into their everyday practice. This discrepancy needs to be resolved because "if rehabilitation counselors… can understand the connection between data collection, using research methodologies, evidence-based

practice, and program evaluation, they will be at a distinct advantage in the development and justification of services offered by their agencies" (Schultz & O'Brien, 2008, p.291).

This knowledge should lead educators to actively question their practice and investigate their teaching of research (Bellini & Rumrill, 1999; Szymanski, Whitney-Thomas, Marshall, & Sayger, 1994). Adding to the difficulty in teaching and learning research, students often put off completing research course work and or experience anxiety overmastering course content (Chan, Miller, Lee, Pruett, & Chou, 2004). Moreover, Dellario (1977) suggested that the teaching of research in rehabilitation is often relegated to other departments and or taught with dispassion. Ebener (2007) also discovered "educators perceive the skill areas of Applying Research as having the least emphasis in Rehabilitation Counselor Education curricula" (p. 201). Rehabilitation counseling students must learn about research and program evaluation as rehabilitation agencies' funding and reimbursement are often tied to data collection and meeting reporting requirements of funding organizations (Schultz & O'Brien, 2008). A disconnect remains.

Knowledge in research is a necessity for effective practice yet lacks an extensive research base illustrating how to effectively translate its importance to students. Some studies suggest the best methods to teach research to students in the social sciences is through problem-based learning and service-learning approaches (Greenwald, 2006; Kapp, 2006; Wong & Vakharia, 2012). Wong and Vakharia (2012) required graduate students in social work to use "published research, quantitative measures, and single-system designs in a simulated practice evaluation project" (p.714), and discovered that the problem-based learning approach of using practice evaluation projects with actual clients was a valuable classroom exercise for teaching graduate students how to evaluate evidence-based practices used in the field.

Kapp (2006) also teaches within the social work field and conducted a study based on a research methods course with undergraduate students "to help students connect with the material in a manner that is understandable, relevant, and manageable" (p.56).

Kapp collaborated with a local agency to apply the service-learning approach to a two-semester research methods course. Using this method, the instructor took less of a leadership role in the course and allowed learning to occur through interactions between the agency and students as well as through small group activities (peer-to-peer learning). Students were able to take the material and apply it directly to a social service program, thereby creating a natural environment to demonstrate an understanding of research methods and program evaluation by completing the tasks required by the agency. This approach allowed for students to "link the research classroom experience to practice settings as prescribed by accreditation standards" (Kapp, 2006, p.56).

Similar to Kapp's approach with the instructor taking less of a leadership role, Greenwald (2006) suggested that the instructor "must adapt to a primarily supportive role" (p.175) if teaching research is to be effective. Greenwald teaches in communication disorders and used problem-based learning to train graduate-level speech-language pathology students how to conduct research using client case studies. Rehabilitation counselors can benefit from studies such as Greenwald's as research training becomes more integrated with clinical training and thus, students in graduate-level programs can start to understand the relationship between research and practice. Clinical practice is informed by research and research informs clinical practice. As these studies indicate the real-world implications of learning about research methods and program evaluation, we turn our attention to the pedagogical considerations to ensure the content is both understandable and immediately applicable to graduate students.

Based on the evidence to date, greater exploration is needed to change how research methods courses are taught. Currently, what is lacking in the literature are studies that focus on the process of developing research skills and pedagogy that can increase the utility of research.

In the mid and late 1990s, Szymanski and her colleagues conducted two studies which examined how instruction in research impacted research anxiety, perceived utility of research, confidence in re-

search ability, and research self-efficacy (Szymanski et al., 1994; Szymanski, Swett, Watson, Lin, & Chan; 1998). Both studies utilized classroom research and employed a quasi-experimental design. The studies found contextualized instruction decreased research anxiety and increased perceived utility of research, confidence in research ability, and research self-efficacy. Contextualized instruction involved "the realities of professional practice" (Szymanski et al., 1998, p. 353) and utilized professional journals and homework assignments to teach and apply concepts. For these studies, making a direct link between concepts, professional journals, and practice provided valuable experiences for the students.

Researchers have also examined student attitudes of research in other health professions and how methods of teaching may impact those attitudes (Delin, 1994; Marsh & Brown, 1992; Olade, 2003; Stark & Cohen, 2007). Past research has examined possible methods for increasing positive attitudes that included involving students in classroom research and field research, utilization of technology, and continuing education for practitioners about current research and practical implications. Perhaps the issue is not what content is taught but how pedagogy is implemented to increase student understanding and value of research.

Thus, the purpose of this study was to qualitatively examine student experiences taking a research methods course as a means to enhance learning and bridging of research and practice for students. Moreover, the study will provide an opportunity to examine pedagogy used to increase students' use of research. To that end, instructors can begin to design pedagogy to increase student engagement in research. The research questions of the current study were: (1) What are the experiences of students enrolled in a graduate research methods course designed to increase their value and utility of research?; and (2) Does course content and instruction influence value and utility of research applicability?

Methodology

A qualitative method was chosen because of its appropriateness to answer inductive research questions and allowed for the participants to describe their experience for a collective theme to emerge. Strauss and Corbin's (1998) principles of coding, constant comparison and theoretical comparisons were used to guide data analysis. Data collection and analysis was a concurrent process that involved continual reflection about the data and how well it did or did not answer the research question. Through the entire research process, the primary researcher kept a reflective research journal, discussed findings with the second author and provided an opportunity for student participants to review the data. Moreover, the principles of action research were employed as a lens to view the research process. Action research is common in teacher education as a method to study the teaching and learning process (Arhar, Holly, & Kasten, 2001). Action research provides a means for instructors to ask and answer questions based in the classroom with the goal of improved practice and increased student understanding.

Participants

All of the participants were enrolled in one graduate research methods course over one semester. The students were from a small private Mid-western university with approximately 4,000 students. There was a total of ten students enrolled and all signed consent forms to participate in the study. Of the ten students participating in the study, nine were in the rehabilitation counseling program and one student was completing a degree in music therapy. The students who participated were six females and four males. One student was African American, one student was Asian American, and eight were European Americans. The majority of the students were between 22-35 years of age. The first author was also the instructor of the course. It is common in educational action research for the researcher and instructor to be the same individual (Arhar et al., 2001). Special attention was given when describing the potential benefits and risks of the study to the students while asking for consent to participate. As part of the consent process, students were informed they could withdraw their consent at any time without penalty.

Data and Analysis

All of the data can be categorized as either generated by the instructor or students. The instructor data consisted of weekly course planning and process

notes and weekly research memos. The planning and process notes described the purpose and content of the class and instructor thoughts on the students' ability to meet class objectives. Research memos described the process of the study and any insights or questions that resulted from analysis. Memos "are meant to be analytical and conceptual rather than descriptive" (Strauss & Corbin, 1998, p. 217). The student-generated data consisted of all the assignments of the course (two exams, two paper outlines, two papers, and seven homework assignments). In addition to student assignments, the instructor asked weekly questions to the students to gauge understanding of the material; their responses were collected and used as additional data. Approximately 220 pieces of data were collected and analyzed to describe the emerging theme. Approximately 40 pieces of data were generated by the instructor and the remaining data were generated by the student participants.

A constant comparison method as described by Straus and Corbin (1998) was employed to analyze the data. In a constant comparison method, the researcher is continuously asking questions of the data to reveal nuanced detail. This process allows for the emergence of rich description and a deeper understanding of the phenomenon being studied. In the initial phases of data collection, data was reviewed and organized based on its ability to answer the research questions. Additional questions were asked of the students to obtain a better understanding of their experiences. In the later stages of data collection and analysis, specific or theoretical sampling was used to better illustrate the students' experience (Straus & Corbin, 1998). Theoretical sampling is a process of collecting data from places, people, and events that will amplify opportunities to develop the properties and dimensions of the emerging trends and themes (Straus & Corbin, 1998). As this process progressed, a theme emerged from student experience. In addition to the constant comparison method, two of the authors met weekly to discuss the data analysis and both authors came to a consensus regarding the theme. Member checking was used to increase the credibility of the study. Twice during the semester portions of the data analysis were shown to the participants as a method to gather feedback about the findings from the students.

Course Design

The course was designed to provide students with the ability to become research practitioners as professionals. An undergraduate statistics course is the only prerequisite. Major content areas included qualitative and quantitative methods, action research, validity, reliability, designing studies, evidence-based practice, ethical and multicultural concerns, basic statistics, and writing in APA style. Content and assignments were set up to be sequential and culminating with students writing two research papers (one qualitative methodology and the other quantitative). The class met once a week for 2 hours and 40 minutes over a 16 week semester. Each class was a mix of lecture, class discussion, and application of course content. An action research textbook (Stringer, 2007) and a research method textbook (Trochim, 2005) were the primary reading materials for the class.

Pedagogy in Teaching Research Methods

Equally if not more important to describing what was taught is an explanation of how the material was presented. All of the classes taught by the first author are taught by the principles of mutual engagement. Mutual engagement is a pedagogical theory that embraces the principles of group formation as means to increase student understanding (Kiener, 2007; Kiener, 2008a; Kiener, 2008b). In short, various pedagogical techniques are used to facilitate the class to form a group. The underlying assumption is once the class is in the working stage of group formation students and the instructor will be more collective and supportive in the learning process. As a result, students have the ability to give and receive feedback that is perceived as beneficial rather than purely evaluative. One specific pedagogical approach used was experiential learning. Experiential learning allows students to demonstrate their learning in class with immediate feedback that provides ample opportunity for students to see their learning and make connections to practice.

Findings

What emerged from the analysis was a continuum of student ability that illustrated progress in comprehension of research methods. The students moved from being outsiders of research knowledge to apprentices of research design. The

data also revealed where students had difficulty and misconceptions, as well as areas they understood at both ends of the continuum. The following narrative will describe how the class as a whole demonstrated being outsiders of research knowledge and how they transitioned to apprentices of research design. This section will conclude with an illustration of how student thinking progressed through the semester.

Outsiders of Research Knowledge

At this stage, students had familiarity with statistics. Some had taken an undergraduate research design course emphasizing quantitative methods, however most content in qualitative methods was new. Students who demonstrated being research outsiders generally knew research articles were important but often did not have enough knowledge or ability to understand and apply all sections of research articles or distinguish between different types of research (quantitative, qualitative, literature review, meta-analysis, etc). For example, students either got confused with the methodology and results sections, or did not read them (Class discussion). Two student comments demonstrate this point: "Research is valuable when you can understand it" and "Research is informational and confusing" (Student homework). Moreover, "doing research" was the process of finding articles for class assignments rather than conducting a study. A misconception for some students was the notion that research was equivalent to statistics (Class discussion).

Early in the semester students openly discussed their discomfort for computing and understanding statistics. These sentiments are parallel to the Szymanski, et al. (1994) findings and Chan, et al. (2004) comments regarding difficulty in learning and utilizing research. Throughout the semester students spoke about the importance of published research and being able to evaluate it. Some students had difficulty going beyond knowing research was valuable (because it was published) and being able to determine if a study was valid and pertinent to their particular needs and context.

Another illustration of students as research outsiders was their difficulty in applying research to their current or future practice. This was reinforced by students who initially had difficulty understanding external validity, sampling, and generalizing. It was challenging for students to conceptualize how a statistic could accurately represent a person. However, some students were able to grasp the descriptive nature of qualitative research and voiced their belief in its utility. Even though students understood how qualitative research could provide a detailed account of a phenomenon, they had difficulty understanding its non-generalizability. It would seem applicability and generalizability are concepts more fully understood with additional practice.

The following quotes illustrate how outsiders of research knowledge initially thought about research. "I am comfortable with research when someone has already summarized the main points for me and says whether or not it is applicable in the field" (Student homework). "Research is taking concepts or theories to the public/real world to identify whether the concept/theory is true in real life situations" (Student homework). "Research will help me as a practitioner to give my clients a variety of options in terms of what counseling methods could be successful" (Student homework). These quotes demonstrated the lack of comfort students had with research, an awareness of applicability to the profession, and alluded to evidence-based practice.

Although students exhibited misconceptions and lack of understanding as outsiders to research, they also were able to demonstrate competence. In general, students were capable of searching databases to find articles, had familiarity with aspects of APA writing style, knew statistics were a part of quantitative research, could develop a question to investigate and discuss weekly course content. Around week four of the semester, students appeared to move towards becoming apprentices. At this point, students were able to complete assignments requiring analysis. For example, students were required to bring in an article related to their topic and answer questions such as: what is the purpose of the investigation?; what is the main research question?; is the study qualitative or quantitative?; and how was the data analyzed?.

At the outsider level, students had a cursory understanding and limited practical experience with research design. Misconceptions centered on a limited idea of research, believing all published research was valid, and distinguishing between the reasons to conduct a qualitative, quantitative, or mix methods study. Although misconceptions were present, students worked to obtain a better understanding of research utility.

Apprentices of Research Design

As the semester progressed students demonstrated an increased ability to conceptualize and perform research. The category of apprentices of research design emerged based on the students' ability to complete assignments in a guided sequential fashion. In general, students were able to define types of research, apply validity to their projects, develop a preliminary literature review, and construct simple research designs for both qualitative and quantitative studies. In addition, at the apprentice level, students began to think about their efficacy in completing other projects. All but two students stated they had the ability to develop and complete a research project (Student homework). Student perception and belief in their ability may also indicate an increased value in research and indicate the first step in student willingness to use research more in their practice.

Perhaps the greatest strength of students at the apprentice level was their ability to conceptualize their project theoretically and also use the same information to create a research paper following APA guidelines. By mid-semester students began to think about ways their studies could benefit their current and future practice. All students actively attempted to apply their projects to their current work, practicum site, or future career goals (Student homework).

Although students demonstrated progress in understanding at the apprentice level, they would also benefit from continued practice in research. Some students had difficulty in describing and naming certain concepts. For example, these students either described a concept and did not name it or named the concept and did not describe it in their research papers. From the student work, it is unclear whether the students did understand the concepts and merely did not name and describe the concepts or lacked a solid understanding.

Students additionally had a hard time distinguishing what made a project action research. Due to the principles of action research closely fitting with qualitative research, students initially believed all action research was qualitative and all qualitative research was action research (Student homework). However, most students could discuss one aspect of action research in relation to their project. For example, students could state how they would take the results back to the community, ways to involve all stakeholders in all phases of research, describe action research as an ongoing systematic pattern of inquiry, or that action research was practitioner and community-based.

Apprentices of research design deepened their understanding of research through describing the major phases of a research project. Moreover, by the end of the semester students were better able to conceptualize concepts to be used as professionals; for example, finding assessments, defining a construct, and collecting and analyzing qualitative data. Investigating the misconceptions at the apprentice level, the researchers believed this was not a short coming of the students but a result of the amount of content taught. More time to teach and apply content may have provided a deeper understanding of all content. In addition to a dedicated class on research, infusing research content throughout the curriculum could lessen the amount needed to be taught in a single class while also provide reinforcement of the value of research. This point is also advocated by Bellini and Rumrill (1999) and Granello and Granello (1998) in describing means to increase the scientist-practitioner model and outcome research in rehabilitation and counselor education.

How Student Thinking Progressed Through the Semester

The course was designed is a sequential manner where content was constantly scaffolded to gain a deeper understanding of the research process. The following student evaluation illustrates this point:

I really appreciated the professor's approach to the course. I loved that most of his assignments led up to the two research papers. Those assignments really aided me to keep on task to ensure that I finished the research papers (Course evaluation).

The overarching theme of the class was for the students to become research practitioners. To accomplish this goal all content was related to credibility or validity of research design. To become an effective research practitioner knowing how to design, conduct, and evaluate research is essential. In the course evaluation, a student commented on his or her ability; "I have a better appreciation for research and have recognized my strengths and areas of weakness that I need to improve on" (Course evaluation). Whereas the first section of the findings described how the students demonstrated their progress, the following narrative will describe how students were thinking.

Throughout the entire semester, students expressed concern over successfully completing the course while at the same time maintaining a high-grade point average (Student homework, Class discussion). Due to these student concerns, great effort was placed on creating a supportive environment by regularly discussing the instructor's teaching philosophy and assessment opportunities. Two students discussed specifically how the class environment impacted learning. "I was not looking forward to this course going into it, but due to the dynamics of my classmates and instructor, I was able to take a lot away from it" and "This course has changed my career goals and before I walked into class I wasn't sure where this program was taking me, but as the instructor taught the course everything started clicking and coming together" (Course evaluation).

About two-thirds of the way through the course, the instructor asked the students to answer the following question: "How do you persist in your reading, writing, and discussions, even when you hit bumps in understanding or interest?" The intent of the question was to have the students focus on the control they have in their learning. In general, students discussed internal and external motivation and factors related to the class and profession.

Three students spoke of research and how it was important to them professionally and personally. "I have reached a time in my life where this information will not only help me understand but will allow me to serve those in similar situations," "It is important to understand research information for personal growth and understanding," and "The information you will learn is actually applicable for future classes and practice" (Student homework). While other students commented on class discussions and readings as a factor to help them proceed in the course when experiencing bumps in understanding. A final group of students discussed a desire to complete the course or graduate and a desire to be competent counselors as determining factors in their learning (Student homework).

The students' responses to this question were not surprising and perhaps predictable. Deci and Ryan's (1985) theory of causality orientation discusses how individuals have multiple motivations (internal, external, and feelings of no control) in every situation that impact actions. Conceivably the most relevant outcome of the students' responses is the ability of instructors to acknowledge this occurrence and utilize pedagogy to meet individual and course goals.

Discussion

The findings provide evidence that students did progress in their knowledge, value, and utility of research. The experience of students moving from outsiders of research to apprentices of research design suggests the negative stigma associated with research can be changed. Perhaps a useful way to further evaluate the findings of this study is to compare them to the Council on Rehabilitation Education (CORE) outcomes for research and program evaluation (CORE, 2013). CORE requires students to be able to demonstrate, articulate and analyze current research, apply research literature to practice, participate in research activities, conduct a review of the literature and use data to support the professional opinion, and apply ethical, legal, and cultural issues in research evaluation. It would seem the pedagogical and assessment procedures employed in conjunction with student ability did clearly demonstrate meeting CORE standards. It is also feasible to

believe the instruction in this study paralleled the contextualized instruction approach described by Szymanski et al., (1994). Perhaps specific pedagogy is needed to more effectively understand how students learn research methods. Moreover, classroom research meets the needs advocated for by Kiener and Koch (2009) as a means to improve curriculum and pre-service rehabilitation counseling students.

A further investigation of the findings provides secondary benefits. The developmental description of how students learn to value and apply research methods can only enhance how future instructors think about course development and instruction. For example, specific instruction and assessments can be created to dismantle misconceptions. In addition, the developmental description can be transformed into benchmarked criteria or a taxonomy that can be overtly discussed with students to be utilized as a self-assessment tool.

Moreover, it is a faulty assumption to believe that poor attitudes about research are solely a student issue. Classroom research is a valuable tool that instructors can use to improve their practice; just as research coursework is valuable to future rehabilitation counselors. Perhaps the first step in increasing research utility is the modeling of classroom research by instructors and documenting its influence on instruction. The ultimate potential for a more comprehensive use of classroom research is the increase in reflective practice and thus better service provision to people with disabilities.

Although there were multiple benefits to the study, it is important to indicate limitations. Conceivably the greatest limitation is the applicability of findings. However, given this awareness, one can argue that classroom research has applicability even with a relatively small number of participants. This is especially true for classroom research involving graduate course work. Due to admission criteria utilized by institutions, graduate students can be considered a homogeneous group. For example, graduate students from the researchers' institution parallel the demographic makeup of the research class studied. At the least, the conceptualization of students moving from outsiders of research to ap-

prentices of research design can be integrated into a pedagogical framework at the researchers' institution and other small universities. In addition, from a qualitative perspective applicability is a dual process between the research and reader to determine the credibility of the research. Researchers have the ethical responsibility to clearly describe the research process so that the reader can evaluate that information to determine how valuable it is to his or her situation.

Future research could also benefit from detailed descriptions of pedagogy utilized in teaching research methods and the creation of an integrated counseling pedagogy. It is the belief of the researchers' that the framework of students moving from outsiders to apprentices can be employed in other content areas as a means to assess teaching effectiveness and student understanding.

This topic could also benefit from a comparison between various rehabilitation counseling programs to determine the depth and breadth of research content dissemination. Miller and Rintelmann (2007) advocate for a research practicum at the master's level, however only one program in the country is currently implementing this pedagogical modality. Furthermore, some institutions require a research thesis for completion of degree requirements, while others require a comprehensive exam, oral exam, or otherwise. While it is understood that applied research projects can lead to growth in research skill development, the inconsistency within research methods course content and exit requirements across programs perhaps demonstrate a lack of commitment or prioritizing content by rehabilitation counselor educators.

Finally, with recent attention on the need and criticality of implementing evidence-based practices into rehabilitation counseling and services (Chan, Bezyak, Ramirez, Chiu, Sung & Fujikawa, 2010; Chan, Tarvydas, Blalock, Strauser, & Atkins, 2009), it is becoming increasingly important for students to have an awareness of sources for disability statistics, as well as ways to engage, conduct and interpret research findings. This knowledge can contribute to competency execution in service coor-

dination, consultation services and program evaluation (Bruyère & Houtenville, 2006). Equipped with this knowledge, students will enter the field of rehabilitation with the tools to provide ethical, effective, person-centered services, thus upholding the underlying values that govern our field (Commission on Rehabilitation Counselor Certification, 2017).

Disseminating the outsider to apprentice framework in publication and conference presentations can only enhance its value as a pedagogical technique aimed at increasing students' utility in research methods. In addition, dissemination may increase the use of classroom research as a valued means of scholarship. Continued research in this area will only enhance future rehabilitation practice.

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