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Mixed Methods Research Designs: A Recommended Paradigm for the Counseling Profession

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Mixed methods designs have been advocated by a number of researchers including those writing about and discussing research paradigms (Burke Johnson & Onwuegbuzie, 2004; Creswell & Clark, 2007). Despite calls for more mixed methods research designs, the field of counseling has been slow to adopt and publish studies using this paradigm. Recently qualitative research studies have gained momentum after heated debates between advocates of quantitative and qualitative designs. Today however, there is a general acceptance of the value of qualitative studies alongside quantitative research within the counseling profession. Yet we have not seen a widespread infusion of mixed methods research in counseling. Reasons for the lack of endorsement and subsequent number of publications using mixed methods research designs in counseling include: a lack of defining mixed methods research and specific design strategies; a lack of expertise required to design, implement, and analyze both quantitative and qualitative studies; length of time required to conduct mixed methods studies; and a personal preference or bias by researchers for either qualitative or quantitative paradigms. This article discusses the above issues concerning mixed methods paradigms, identifies the most common mixed methods strategies, and presents examples of mixed methods studies in counseling. The purpose of this article is to assist researchers to further understand mixed methods designs and to promote the use of mixed methods designs by those conducting research in counseling.

Obstacles to Conducting Mixed Methods Research

Although mixed methods studies have been published in a few of the counseling journals, including the *Journal of Counseling & Development (JCD)*, and *Counselor Education & Supervision (CES)*, their numbers are insignificant, (Hanson, Creswell, Clark, Petska, & Creswell, 2005). Leech and Onwuegbuzie (2011) reported that of the *JCD* articles reviewed from 2003-2010, only 2% used mixed methods designs,

representing just 5% of the research articles published during that period. Reasons for the lack of research and subsequent publications using mixed methods designs include a misunderstanding of this paradigm, often coinciding with resistance to embrace a new or unfamiliar paradigm. During the early years of training in psychology and counseling, researchers were taught to emphasize quantitative studies, particularly experimental investigations. These were considered the *crème de le crème* of available research designs. With more qualitative investigations surfacing, there evolved an acceptance, of this paradigm as uniquely adding to research in counseling and the behavioral sciences. While there currently exists an understanding of the value of quantitative and qualitative paradigms, the debates over the worthiness of these two designs seemed to strengthen the attachment researchers had toward either quantitative or qualitative studies.

Mixed methods research studies are the “third wave” or third research paradigm, suggesting that quantitative and qualitative designs can work together. However, it is believed that a number of obstacles first need to be addressed before we see greater acceptance, implementation, and a substantial number of publications using mixed methods research in counseling.

One obstacle to accepting mixed methods research involves clarity of definition of this paradigm. Only recently has the term “mixed methods” been defined. Two definitions of mixed methods research are most often cited.

Burke Johnson & Onwuegbuzie (2004) defined mixed methods research as the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts, or language into a single study

Creswell and Clark (2007) defined mixed methods research as:

A research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone. (p. 5)

The above definitions of mixed methods designs add greater clarity for those conducting research using this paradigm. However, questions of identifying possible mixed methods design strategies within one’s research needed to be addressed. Creswell (2009) addressed this concern by discussing ways of mixing quantitative and qualitative research paradigms, and identified six mixed methods strategies.

Sequential Explanatory Strategy—this model involves two phases. The first phase of the research study consists of the collection and analysis of quantitative data. The second phase of the study involves the collection and analysis of qualitative data.

Sequential Exploratory Strategy—this model also involves two phases. The first phase of the research study consists of the collection and analysis of qualitative data. The second phase of the study involves the collection and analysis of quantitative data.

Sequential Transformative Strategy—this model involves two phases with either a quantitative or qualitative phase implemented first, followed by either qualitative or quantitative data collection or analysis procedures. The distinguishing element of this strategy is the infusion of a theoretical perspective that guides the researcher.

Concurrent Triangulation Strategy—this model involves the researcher collecting quantitative and qualitative data concurrently. Each data set is analyzed in terms of interactions.

Concurrent Embedded Strategy—this model is similar to the concurrent triangulation strategy. However one data set is embedded or considered nested within the study. There is a primary research method that guides the study and a secondary method that is supportive.

Concurrent Transformative Strategy—this model is guided by a theoretical perspective. It collects data concurrently. This model may include an embedded strategy. (p. 62-78)

The above strategies (Creswell, 2009) provide several approaches one can use with mixed methods research. These strategies are meant to be informative, helping researchers further understand various design possibilities. Two of these strategies are illustrated in this paper.

Additional obstacles to the infusion of mixed methods research include the researcher's own competence in designing both quantitative and qualitative studies, the amount of time required to complete investigations of this nature, and the availability of resources that could assist researchers interested in pursuing studies combining these paradigms. Unfortunately, counselor education doctoral programs may not cover all of the skill sets needed to design, implement, and analyze both quantitative and qualitative research. A typical research sequence in Council for Accreditation of Counseling and Related Educational Programs (CACREP) accredited programs includes three to four courses in statistics emphasizing quantitative data collection and analysis, accompanied by a single qualitative course. If the obstacle of competence is to be removed, doctoral programs will need to balance their coverage of quantitative and qualitative research paradigms, offering a series of courses in each area that perhaps build upon each other. Furthermore, coursework emphasizing mixed methods research that includes; philosophy of research design, mixed methods design strategies, data collection procedures, data analysis, and information on how to report findings, needs to be added to doctoral programs in counselor education.

The obstacles of time and available resources are significant considerations when embarking on a mixed methods research study. Creswell and Clark (2007) view time and resources as major concerns when considering the use of mixed method designs, even if the researcher is competent in quantitative, qualitative, and mixed methods paradigms. Research projects using mixed methods paradigms, by their nature; include at least two sets of data collection, a dual set of research questions, a mixture of data analysis methods, and complex methods of reporting findings. Creswell and Clark (2007) suggest that researchers work in teams when using mixed methods designs and that universities provide the latest software for analyzing quantitative and qualitative data. The author

suggests that researchers weigh the benefits of mixed methods research findings against the amount of time required to adequately pursue research of this nature.

A Sequential Explanatory Mixed Methods Study

Sequential explanatory mixed methods studies involve the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. The sequence can involve the testing of hypotheses in an experiment as the first phase of the investigation. In order for the researcher to further understand and gain more in-depth information about findings from the experiment, a qualitative research phase is conducted.

Abel, Abel, and Smith (2012) reported findings from the first phase of a sequential explanatory mixed methods study. In this investigation, the researchers examined the effects of a stress management course offered to graduate students. A control group of students was matched by gender and ethnicity. Both experimental and control group participants completed pre-post testing, measuring several dependent variables. The main variable under investigation was the level of stress experienced by participants as related to their identified stressor. The experimental group members' level of stress following treatment was found to be significantly lower than control group members'. The effect size was high, indicating a practical significance. Conclusions of the study were that a stress management course was effective in reducing stress levels of participants.

Researchers, during the second phase of the study, sought to understand attributions provided by participants, or the salient features of a stress reduction program that seemed to help them personally reduce their level of stress. The qualitative phase involved interviewing experimental group members, conducting focus groups, and analyzing participants' logs. The second phase allowed the researchers to hear the voices of participants who were now able to reduce their stress. Following a rigorous coding of data, several themes emerged helping researchers understand factors within a stress management course that were instrumental, according to participants, in reducing their stress levels.

Researchers are encouraged to use this mixed method strategy where quantitative data are collected and analyzed to answer primary questions. In this investigation researchers wanted to first determine the effects of a stress management intervention program. The voices of participants were heard during the second phase of this study. The analysis of qualitative data answered secondary questions related to participants' attributions of factors that were most instrumental in reducing their stress.

A Sequential Exploratory Mixed Methods Study

A second example of a mixed methods study used a sequential exploratory strategy. Cueva (2006) first explored the possibility of teaching achievement thinking and behavior strategies to very young children. The qualitative phase was instrumental in determining and planning for a subsequent experimental investigation. Previous studies using achievement motivation training concepts had demonstrated success with adults and adolescents. However, research was unavailable that attempted to apply these

complex interventions with young children (grades 3, 4 and 5). It was determined by the researcher that a mixed method design would be appropriate, with the first phase considered as exploratory in nature.

Qualitative data were first collected and analyzed to determine if such a program as achievement motivation would be applicable with young children. An experimental investigation was planned in phase two, but needed pertinent exploratory data prior to its design and implementation. A pilot study with a small group of young children was conducted. During this phase, information was gathered through interviews, student journals, and focus groups. Data were analyzed to determine the level of readiness by children to understand complex concepts of achievement thinking and behaving.

Findings from phase one were used to modify a subsequent achievement motivation training program to be implemented in phase two of the investigation. The treatment program for the experimental group of children was revised to fit the developmental level of young children, using data from the qualitative exploratory investigation. Once the treatment was modified the researchers conducted a quasi experimental investigation. Experimental and control group participants were matched. Over a five month time the researchers collected and analyzed quantitative data from experimental and control group members. This was phase two of the investigation.

In this mixed method research, an exploratory strategy was selected. Qualitative data were first obtained to determine if treatment concepts could be understood by young children and to what degree the treatment program required modification. Qualitative findings were emphasized in this investigation as they sharpened the researcher's theoretical perspective and helped determine whether achievement motivation concepts could be presented to and understood by elementary age children.

Conclusions and Recommendations

Researchers in counseling and the behavioral sciences are faced with a number of challenges. When studying human behavior, the researcher is met with several inherent problems. First, relevant concepts such as motivation, decision making, and persistence are difficult to measure. In addition, investigations in the behavioral sciences tend to provide the reader with only a brief picture of a phenomenon under study. By using either quantitative or qualitative research data alone, studies often fall short of providing findings with applicability to real life situations. Instead, findings can be confusing, or at best, incomplete. Mixed methods research designs are proposed, since they have the potential to provide a more comprehensive picture of a phenomenon and can produce findings that answer a broader scope of questions, often with greater depth.

It has been noted that few studies in counseling use mixed methods paradigms. Reasons for the lack of mixed methods studies found within the counseling literature have included a lack of familiarity or understanding of mixed methods research, a philosophical belief or bias toward using either quantitative or qualitative research designs, a lack of competence in applying both quantitative and qualitative research paradigms, the amount of time required to conduct mixed methods research, and a lack of resources available to researchers. However, it is possible to overcome many of these obstacles. More pointedly, it is believed that these obstacles need to be overcome in order to enhance the quality and further understand the complex nature of research studies in

counseling. The following suggestions support and encourage mixed methods investigations.

- Provision of a balanced amount of coursework and training in both quantitative and qualitative research within counselor education programs.
- Provision of coursework and training in mixed methods research within counselor education programs.
- Encouraging faculty to use mixed methods designs when conducting their own research.
- Provision of workshops and seminars for faculty on how to design, conduct, and analyze mixed methods research.
- Providing faculty with allocated time and resources to design and conduct mixed methods investigations.
- Emphasizing mixed methods research with graduate students, particularly those involved in their dissertation, and provide resources and assistance in designing, conducting, and publishing research findings.
- Creating a culture of research, including collaboration teams of faculty and students in counselor education programs.
- Allocating sections in journals as JCD and CES for reporting mixed methods research.

The counseling profession is poised for the opportunity to enhance its research base. Researchers are encouraged to investigate, implement, and publish mixed methods investigations.

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