

MIXED METHODS RESEARCH IN SCHOOL PSYCHOLOGY: A MIXED METHODS INVESTIGATION OF TRENDS IN THE LITERATURE

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This article illustrates the utility of mixed methods research (i.e., combining quantitative and qualitative techniques) to the field of school psychology. First, the use of mixed methods approaches in school psychology practice is discussed. Second, the mixed methods research process is described in terms of school psychology research. Third, the current state of affairs with respect to mixed methods designs in school psychology research is illustrated through a mixed methods analysis of the types of empirical studies published in the four leading school psychology journals between 2001 and 2005. Only 13.7% of these studies were classified as representing mixed methods research. We conclude that this relatively small proportion likely reflects the fact that only 3.5% of graduate-level school psychology programs appear to require that students enroll in one or more qualitative and/or mixed methods research courses, and only 19.3% appear to offer one or more qualitative courses as an elective. Finally, the utility of mixed methods research is illustrated by critiquing select monomethod (i.e., qualitative *or* quantitative) and mixed methods studies conducted on the increasingly important topic of bullying. We demonstrate how using mixed methods techniques results in richer data being collected, leading to a greater understanding of underlying phenomena.
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HISTORICAL UNDERPINNINGS OF PSYCHOLOGICAL RESEARCH

The field of social and behavioral sciences has undergone three methodological waves. Johnson, Onwuegbuzie, and Turner (2005) labeled these waves as being characterized by the traditional science period, the crisis period, and the current synthesis period. As noted by Johnson et al. (2005), in the traditional science period, which prevailed during the 19th and early 20th centuries, many social and behavioral science researchers subscribed to traditional science (i.e., positivism). These researchers contended that “social research should adopt scientific method, that this method is exemplified in the work of modern physicists, and that it consists of the rigorous testing of hypotheses by means of data that take the form of quantitative measurements” (Atkinson & Hammersley, 1994, p. 251).

The second methodological wave, the crisis or antithesis period, marked the late 19th century until approximately 1990. During this era, some social science researchers (e.g., Dilthey, Weber) began to criticize strongly the use of the scientific method and its assumptions for the study of social and psychological phenomena (Smith & Heshusius, 1986). Many of those who rejected traditional science and positivism began to call for a more appropriate paradigm for understanding human subjectivity and intersubjectivity—thus, the qualitative research paradigm was born (Guba & Lincoln, 2005). This paradigm rapidly emerged from a field in which individual phenomena were studied

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using quantitative criteria (e.g., reliability, validity) into a field that was far removed from traditional science and positivism, embracing a core set of epistemological beliefs (e.g., subjectivist, knower and known are inseparable in human research), ontological beliefs (e.g., relativism, perspectivalism, multiplism), axiological beliefs (e.g., value-bound), methodological beliefs (e.g., dialectical, dialogical, hermeneutical), and rhetorical beliefs (e.g., stressing an informal writing style using personal voice and limited definitions) (Guba & Lincoln, 2005). Thus, by the end of the crisis or antithesis period, qualitative and quantitative research coexisted, but as separate and competing research paradigms (Johnson et al., 2005); however, quantitative research was still dominant.

During the third methodological wave, the current synthesis stage, which gained momentum during the 1960s, researchers from various fields in the social and behavioral sciences began to advocate the combining of quantitative and qualitative approaches. Campbell and Fiske's (1959) seminal article is credited for formalizing the idea of using multiple research methods. In this article, Campbell and Fiske introduced the idea of triangulation, which was extended further by Webb, Campbell, Schwartz, and Sechrest (1966). This third methodological movement has been most commonly known as mixed methods research (cf. Tashakkori & Teddlie, 2003). As noted by Johnson and Onwuegbuzie (2004), broadly speaking, mixed methods research is "the class of research where the researcher mixes or combines quantitative and qualitative research techniques into a single study" (p. 17). Mixed methods research should be used when the research question suggests that combining quantitative and qualitative approaches is likely to provide superior research findings and outcomes.

Research in the field of psychology has also undergone these three methodological waves. Yet, psychological research has been dominated by (a) (quantitative) experimental psychology, which has its roots in physiology, biology, and physics; and (b) quantitative psychology, arising from the advances in mathematics, statistics, and psychometrics (Todd, Nerlich, & McKeown, 2004). Notwithstanding, several subdisciplines within psychology (e.g., clinical psychology, cross-cultural psychology, comparative psychology) have embraced mixed methods approaches to a greater degree (Waszak & Sines, 2003). Yet, interestingly, an extensive review of the literature revealed no published article that has discussed the role of mixed methods research in school psychology (Collins, Onwuegbuzie, & Jiao, 2007). Although Hanson, Creswell, Plano Clark, Petska, and Creswell (2005) examined the prevalence of mixed methods research published in counseling journals, the field of school psychology is sufficiently different from the field of counseling to warrant its own separate study. Furthermore, Hanson et al. examined studies published in counseling journals prior to May 2002 that were conducted before the publication of Tashakkori and Teddlie's (2003) landmark *Handbook of Mixed Methods in Social and Behavioral Research*, which played a pivotal role in providing both visibility and credibility to the field of mixed methods. In any case, although the function of school counselors and school psychologists is to facilitate student success, the way in which each practices is quite different. For example, according to the American School Counselor Association (2006), school counselors are certified educators whose goal is to address a wide variety of student needs, including academic, personal, and career. Notably, school psychologists are not specifically trained in career counseling techniques. Although school psychologists address academic and personal issues for students, the role of a school psychologist also encompasses addressing emotional and behavioral issues that interfere with academic performance. Typically, this is facilitated by psychological testing, extensive consultation with teachers and parents, and direct and indirect intervention (cf. National Association of School Psychologists [NASP], 2000). These differences in the functions of school counselors and school psychologists justify examining the field of school psychology research separately from the field of school counseling research.

With this in mind, this article explains and illustrates the utility of mixed methods design to the field of school psychology. First, the use of mixed methods approaches in school psychology

practice is discussed and exemplified. Second, mixed methods designs are described in the context of applicability to school psychology research. Third, the current state of affairs with respect to mixed methods designs in school psychology research is illustrated through a mixed methods analysis of the types of empirical studies (i.e., quantitative vs. qualitative vs. mixed methods) published in leading school psychology journals in recent years. Finally, the utility of mixed methods research designs is illustrated by critiquing select monomethod (i.e., qualitative or quantitative) and mixed methods studies conducted on the topic of bullying—an issue in school psychology that has received increasing attention in recent years. In particular, we demonstrate how using mixed methods techniques results in richer data being collected, thereby leading to a greater understanding of underlying phenomena.

MIXED METHODS IN SCHOOL PSYCHOLOGY PRACTICE

For practitioners of school psychology, the integration of qualitative and quantitative methodologies is not a new or unique concept. In fact, by definition, assessment, whether for purposes of program planning or treatment, necessitates the consideration of multiple sources of data. These sources may involve the use of measurement tools such as standardized tests, rating scales, self-reports, symptom checklists, or personality inventories that typically entail the assignment of numbers in order to quantify certain attributes. Alternatively, they may take the form of direct observations, interviews, social and medical histories, analyses of permanent products, or various informal strategies, techniques that could be characterized as being primarily “qualitative” in nature. Indeed, only such a comprehensive approach permits the practical evaluation of the infinite array of biological, cognitive, social, and interpersonal factors affecting an individual’s behavior.

Moreover, professional organizations overseeing and regulating the applied fields of psychology have adopted standards for practice that require “school psychologists use multiple assessment methods such as observations, background information, and information from other professionals, to reach comprehensive conclusions” (NASP, 2000, p. 27). Inherent within these guidelines is the promotion of mixed methods utilization in practice.

MIXED METHODS IN SCHOOL PSYCHOLOGY RESEARCH

Collins, Onwuegbuzie, and Sutton (2006) conceptualized mixed methods research as comprising the following 13 distinct steps:

1. Determining the goal of the study
2. Formulating the research objective(s)
3. Determining the research/mixing rationale(s)
4. Determining the research/mixing purpose(s)
5. Determining the research question(s)
6. Selecting the sampling design¹
7. Selecting the mixed methods research design
8. Collecting the data set
9. Analyzing the data set
10. Validating/legitimizing the data set and data interpretations
11. Interpreting the data
12. Writing the final report
13. Reformulating the research question(s)

¹Selecting a mixed methods research design only is appropriate if the research question dictates it. We recognize that some research questions justify either a purely quantitative research design or a purely qualitative research design. Our thinking here is consistent with many pragmatists (see, e.g., Johnson et al., 2005).

These 13 steps comprise the following three major stages: research formulation stage (i.e., steps 1–5), research planning phase (i.e., steps 6 and 7), and research implementation stage (i.e., steps 8–13). What most differentiates the mixed methods research process from the monomethod research processes is the fact that the former compels researchers not only to make decisions about the individual quantitative and qualitative components, but also to make decisions about how these components relate to each other—as is illustrated in the next three sections.

Research Formulation Stage

In the research formulation stage, all five steps are linear. Determining the goal of the study (step 1) involves making a decision about the overall, long-term aim of the investigation. Here, we can use Newman, Ridenour, Newman, and DeMarco's (2003) framework. These authors have identified the following nine goals: (a) add to the knowledge base; (b) predict and (c) measure change; (d) have a personal, social, institutional, and/or organizational impact; (e) understand complex phenomena; (f) generate new ideas; (g) test new ideas; (h) inform constituencies; and (i) examine the past. The research goal leads directly to the research objective (step 2). In this step, the researcher should determine which of the following five major standard research objectives are pertinent for the quantitative and qualitative phases of the study: (a) exploration, (b) description, (c) explanation, (d) prediction, and/or (e) influence (Johnson & Christensen, 2004). Both the qualitative and quantitative phases of each mixed methods research study can be linked to one or more of these five research objectives.

Once the research goal and objective(s) have been identified, the next step in the mixed research process is to determine the research mixing/rationale (step 3). This not only involves determining the rationale of the study (i.e., why the study is needed), but also identifying the rationale for mixing quantitative and qualitative approaches. Collins et al. (2006) identified the following four major rationales for mixing quantitative and qualitative approaches: participant enrichment (i.e., mixing quantitative and qualitative techniques for the rationale of optimizing the sample—e.g., increasing the number of participants), instrument fidelity (i.e., maximizing the appropriateness and/or utility of the instruments used in the research, whether quantitative or qualitative—e.g., via a pilot study), treatment integrity (i.e., mixing quantitative and qualitative procedures in order to assess the fidelity of interventions, treatments, or programs), and significance enhancement (i.e., mixing quantitative and qualitative techniques in order to optimize data interpretations).

Alongside identifying the research/mixing rationale, the researcher should determine the research/mixing purpose (step 4). Collins et al. (2006) identified 65 purposes for mixing quantitative and qualitative approaches. Each purpose falls under one of the four major rationales (i.e., participant enrichment, instrument fidelity, treatment integrity, significance enhancement). Also, we recommend that researchers use Greene, Caracelli, and Graham's (1989) framework. These authors identified the following five general purposes of mixed methods studies: (a) triangulation (i.e., seeking convergence and corroboration of findings from different methods that examine the same phenomenon); (b) complementarity (i.e., seeking elaboration, illustration, enhancement, and clarification of the results from one method with findings from the other method); (c) initiation (i.e., discovering paradoxes and contradictions that lead to the research questions[s] being reframed); (d) development (i.e., using the results from one method to help inform the other method); and (e) expansion (i.e., seeking to expand the breadth and range of the study by using different methods for different research components). As documented by Greene et al., every mixed methods study can be classified as having one or more of these five purposes. Identifying the research purpose helps the researcher develop appropriate research questions (step 5). For example, if the purpose of the research is triangulation, then both the quantitative and qualitative set of research questions should most likely lead to an investigation of the same outcome or phenomenon. Conversely, if the purpose of the research

is initiation or development, then the quantitative research question should be conditional on the qualitative research question or vice versa (cf. Onwuegbuzie & Leech, 2006).

Research Planning Stage

The research planning stage involves selecting the sampling design (step 6) and the mixed methods design (step 7). Both steps are interactive because choice of sampling design affects the selection of mixed methods research design and vice versa. With regard to the sampling design, we suggest the use of Onwuegbuzie and Collins' (2007) model. This model provides a typology for classifying mixed methods sampling designs according to (a) the time orientation of the components (i.e., whether the qualitative and quantitative components occur concurrently or sequentially) and (b) the relationship of the qualitative and quantitative samples, namely, identical (i.e., same participants are involved in both qualitative and quantitative phases), parallel (i.e., samples for the qualitative and quantitative components of the research are different but are drawn from the same population of interest), nested (i.e., participants selected for one phase of the study represent a subset of those sample members selected for the phase), or multilevel (i.e., use of two or more sets of samples that are extracted from different levels of the population of interest—e.g., students vs. school psychologists). The two criteria, time orientation and sample relationship, yield eight different types of major sampling designs that mixed methods researchers have at their disposal.

For the research design step (i.e., step 7), we recommend Leech and Onwuegbuzie's (in press) three-dimensional typology, in which mixed methods designs can be represented as a function of the following three dimensions: (a) level of mixing (i.e., fully mixed [mixing of quantitative and qualitative approaches occurring within or across the data collection, analysis, and interpretation stages] vs. partially mixed [mixing occurring only at the data interpretation stage]), (b) time orientation (i.e., concurrent [quantitative and qualitative phases occur at approximately the same point in time] vs. sequential [phases occur one after the other]), and (c) emphasis of approaches (i.e., equal status [quantitative and qualitative components have approximately equal emphasis] vs. dominant status [one component has higher priority than does the other]). Leech and Onwuegbuzie's (in press) typology thus can be characterized by a 2 (fully mixed vs. partially mixed) \times 2 (concurrent vs. sequential) \times 3 (equal status vs. dominant status-quantitative vs. dominant status-qualitative) matrix, which yields 12 types of mixed methods research designs that school psychology researchers can use. Because of its flexibility, this typology has been found to be useful for classifying mixed methods research designs in other fields (cf. Leech & Onwuegbuzie, in press), so it was assumed that it would be also pertinent to the field of school psychology. These designs appear in Table 1.

Research Implementation Stage

The research implementation stage involves four steps—data collection, data analysis, data validation, and data interpretation—that are cyclical and interactive. For the data collection stage (step 8), we recommend the use of Johnson and Turner's (2003) typology. These authors identified six specific data collection strategies in mixed methods research (e.g., mixture of open- and closed-ended items on one or more questionnaires, mixture of depth and breadth interviewing, mixture of "a priori" and "emergent/flowing" focus group strategies, mixture of standardized open- and closed-ended predesigned tests, mixture of standardized/confirmatory and less structured/exploratory observations, mixture of nonnumeric and numeric archival-based documents).

The data collection step is followed by the data analysis step (step 9). Onwuegbuzie and Teddlie (2003) identified the following seven stages of the mixed methods data analysis process: (a) data reduction (i.e., reducing the dimensionality of the qualitative data [e.g., via exploratory thematic analysis, memoing] and quantitative data [e.g., via descriptive statistics, exploratory factor analysis,

Table 1
Typology of Mixed Methods Sampling Designs

Mixed Methods Research Design	Description
Partially mixed concurrent equal status designs	Quantitative and qualitative phases occur at approximately the same point in time, with both phases being given approximately equal weight and mixing occurring at the data interpretation stage
Partially mixed concurrent dominant status-qualitative designs	Quantitative and qualitative phases occur at approximately the same point in time, with the qualitative phase being given higher priority and mixing occurring at the data interpretation stage
Partially mixed concurrent dominant status-quantitative designs	Quantitative and qualitative phases occur at approximately the same point in time, with the quantitative phase being given higher priority and mixing occurring at the data interpretation stage
Partially mixed sequential equal status designs	Quantitative and qualitative phases occur one after the other, with both phases being given approximately equal weight and mixing occurring at the data interpretation stage
Partially mixed sequential dominant status-qualitative designs	Quantitative and qualitative phases occur one after the other, with the qualitative phase being given higher priority and mixing occurring at the data interpretation stage
Partially mixed sequential dominant status-quantitative designs	Quantitative and qualitative phases occur one after the other, with the quantitative phase being given higher priority and mixing occurring at the data interpretation stage
Fully mixed concurrent equal status designs	Quantitative and qualitative phases occur at approximately the same point in time, with both phases being given approximately equal weight and mixing occurring within or across the data collection, analysis, and interpretation stages
Fully mixed concurrent dominant status-qualitative designs	Quantitative and qualitative phases occur at approximately the same point in time, with the qualitative phase being given higher priority and mixing occurring within or across the data collection, analysis, and interpretation stages
Fully mixed concurrent dominant status-quantitative designs	Quantitative and qualitative phases occur at approximately the same point in time, with the quantitative phase being given higher priority and mixing occurring within or across the data collection, analysis, and interpretation stages
Fully mixed sequential equal status designs	Quantitative and qualitative phases occur one after the other, with both phases being given approximately equal weight and mixing occurring within or across the data collection, analysis, and interpretation stages
Fully mixed sequential dominant status-qualitative designs	Quantitative and qualitative phases occur one after the other, with the qualitative phase being given higher priority and mixing occurring within or across the data collection, analysis, and interpretation stages
Fully mixed sequential dominant status-quantitative designs	Quantitative and qualitative phases occur one after the other, with the quantitative phase being given higher priority and mixing occurring within or across the data collection, analysis, and interpretation stages

Data from Leech & Onwuegbuzie, in press.

cluster analysis)), (b) data display (i.e., describing pictorially the qualitative data [e.g., graphs, charts, matrices, networks, checklists, rubrics, Venn diagrams] and quantitative data [e.g., tables, graphs]), (c) data transformation (i.e., quantizing data by converting qualitative data into numerical codes that can be analyzed statistically and/or qualitzing data by converting quantitative data into narrative representations that can be analyzed qualitatively; Tashakkori & Teddlie, 1998), (d) data correlation (i.e., correlating qualitative data with quantitized data or quantitative data being correlated

with qualitized data), (e) data consolidation (i.e., combining qualitative and quantitative data to create new or consolidated variables, codes, or data sets), (f) data comparison (i.e., comparing data extracted from the qualitative and quantitative components), and (g) data integration (i.e., integrating qualitative and quantitative data into either a coherent whole or separate qualitative and quantitative sets of coherent wholes).

The data analysis step is followed by data legitimation (step 10). Here, we recommend Onwuegbuzie and Johnson's (2006) new typology of legitimation types pertaining to the overall mixed methods research process, which contains nine legitimation types. One such type is sample integration legitimation, representing the extent to which the relationship between the quantitative and qualitative sampling designs yields combined inferences that are meaningful and valid. School psychology researchers can also use frameworks for examining validity pertaining to the individual quantitative (e.g., Campbell & Stanley, 1963; Onwuegbuzie, 2003b) and qualitative (e.g., Kvale, 1995; Maxwell, 1992; Onwuegbuzie & Leech, 2007) components of their research.

Once validated, the data then are interpreted (step 11). In making inferences, we refer the reader to Tashakkori and Teddlie's (2006) integrative model of quality that comprises design quality (i.e., standards used for the evaluation of the methodological rigor of the mixed research study) and interpretive rigor (i.e., standards for evaluating the validity of conclusions). Writing the research report (step 12), as is the case in quantitative and qualitative research, is the last step in the research process of a *single* study. Creswell and Plano Clark (2007) and Onwuegbuzie and Johnson (2004) have provided guidelines for writing mixed methods research reports.

TRENDS IN MIXED METHODS RESEARCH IN SCHOOL PSYCHOLOGY JOURNALS

To determine the frequency with which mixed methods designs are currently used in research pertinent to school psychology, a mixed methods study of recent articles published in leading journals in the field was conducted. This mixed methods investigation used a fully mixed sequential dominant status-quantitative design (cf. Table 1), wherein the qualitative and quantitative approaches were mixed within the data analysis and data interpretation stages, with the qualitative and quantitative phases occurring sequentially, and the quantitative phase given more weight. The following four journals were examined: *Journal of School Psychology* (JSP), *Psychology in the Schools* (PITS), *School Psychology Quarterly* (SPQ), and *School Psychology Review* (SPR). These journals were selected because, at the time the study took place, they had the four highest impact factors among journals representing the field of school psychology. All articles published in these journals from 2001 through 2005 were examined for type, specifically empirical study, review paper, or review paper with case study (i.e., articles that were largely review or conceptual pieces, but included a "case example" component to illustrate points). The year 2001 was selected because it marked an era during which there has been a proliferation of mixed methods research articles in the social and behavioral science field and beyond. Indeed, in a comprehensive review across 15 major electronic bibliographic databases (e.g., PsycINFO, CINAHL, ERIC) that represented nine fields (i.e., business, education, social work, sociology, nursing, public health, psychology, library science, medicine), using the search phrase "mixed methods" or its variant, Collins et al. (2007) determined that the vast majority of mixed methods articles extracted was published in 2001 or later.

A sequential mixed methods analysis (SMMA; Onwuegbuzie & Teddlie, 2003; Tashakkori & Teddlie, 1998) was undertaken to analyze the empirical qualitative research articles. The SMMA consisted of two phases. In the first phase, the qualitative stage, a within-case analysis was used for each empirical article for the purpose of determining whether the study represented a quantitative, qualitative, or mixed methods study. This involved using all information presented in the abstract and the body of the article (e.g., introduction/literature review, methods, results, discussion, tables, figures). In particular, an effects matrix (Miles & Huberman, 1994) was used to examine whether the

information provided in the abstract was consistent with a quantitative, qualitative, or mixed methods design. Effects matrices are appropriate when there are “ultimate” outcomes (Miles & Huberman, 1994, p. 137). In this study, the ultimate outcomes were the information in the article—particularly the research question(s), hypotheses, procedures, and results. We were also interested in identifying the “effects” (Miles & Huberman, 1994, p. 137). In our analysis, the effects were represented by the research design that was either stated or implied by the researcher(s) (i.e., quantitative, qualitative, mixed methods). Such a matrix allowed us, for each study, to compare directly these effects to the ultimate outcomes.

Excel spreadsheets were used to construct the effects matrix. The cell entries in these effect matrices contained either statements made by the author(s) of the article under examination or our own brief field notes. As such, the effects matrices allowed us to leave an audit trail, which is recommended by researchers as a method of evaluating legitimation or increasing legitimation, or both (Halpern, 1983). In addition to the empirical studies being coded as representing quantitative, qualitative, or mixed methods, research approaches, they were coded according to the three aforementioned dimensions: partially or fully mixed, concurrent or sequential, and equal or dominant status. In the second phase, the quantitative phase, the information provided in the effects matrix was quantitized. That is, the frequency rate pertaining to each type of research approach and research design was computed.

Of note, the category of review papers encompassed articles that did not report original data, and included (a) literature reviews: conceptual pieces and reviews of assessment tool(s), program(s), or best practice procedures (e.g., threat assessment); (b) content or meta-analyses; (c) book reviews; and (d) articles clearly marked “commentary” or “response.” Also, with respect to the studies that were coded as mixed methods, while definitions of the research designs were provided in Table 1, attempts to classify actual published studies into distinct categories necessitated the addition of eight categorization rules (see the Appendix). These coding rules and procedures were created collaboratively with all members of the research team who were involved in coding articles. The research team read and coded articles together, creating the additional decision rules during the coding process, until 100% agreement between coders was achieved. Then, the remaining articles were read and coded by one author only. To ensure and maintain integrity of the coding procedure (i.e., high interrater agreement, postcoding), a sample of articles from each journal was identified to be recoded by another member of the research team. The sample of recoded articles was nonrandom. Articles were chosen to recode based on each coders’ perception of the degree of ambiguity in the design presented by each reviewed article. For example, if a coder had difficulty determining whether an article was partially or fully mixed, the coder would make a notation of the article so it could be reviewed again during the final stages of analysis. A total of 40 articles were recoded in this manner. Interrater agreement, based on the initial coding, was 95% accuracy. Assuming that there was a disagreement regarding how to code the articles, the coders would delineate their rationale for coding and have a discussion about the article. If an agreement was not made, the article was sent to a third coder, and a subsequent decision was made.

Table 2 presents a summary of the types of articles published in the four major school psychology journals from 2001 through 2005. Articles describing empirical studies constituted 57.32%, 47.95%, 41.38%, and 54.85% of the articles published in JSP, PITS, SPQ, and SPR, respectively. Of these empirical studies, between 80.00% and 89.14% were monomethod. The vast majority of monomethod studies involved quantitative designs. Interestingly, only six studies published in the 5-year period (i.e., 1.37% of the total number of empirical articles) represented purely qualitative research. Proportionate to the total number of empirical studies published, the journal containing the most studies employing a mixed methods design was SPQ (20% of all empirical studies), followed by JSP (16.67%), SPR (12.39%), and PITS (10.86%).

Table 2
 Type and Design of Article Published in School Psychology Journals from 2001 to 2005, Data Presented by Journal

Journal	Empirical Study			Review Paper				Review Paper with Case Example	Total Articles
	Quant	Qual	Mixed	LR	MA	C or R	BR		
JSP	46.50% (73)	1.27% (2)	9.55% (15)	12.74% (20)	1.91% (3)	24.84% (39)	0.64% (1)	2.55% (4)	157
PITS	41.92% (153)	0.82% (3)	5.21% (19)	28.22% (103)	0.55% (2)	8.22% (30)	13.70% (50)	1.37% (5)	365
SPQ	32.41% (47)	0.69% (1)	8.28% (12)	15.86% (23)	5.52% (8)	26.90% (39)	8.97% (13)	1.38% (2)	145
SPR	48.06% (99)	0% (0)	6.80% (14)	12.62% (26)	4.37% (9)	24.28% (50)	0 (0)	3.88% (8)	206
Total	42.61% (372)	0.69% (6)	6.87% (60)	19.70% (172)	2.52% (22)	18.10% (158)	7.33% (64)	2.18% (19)	873

Quant = quantitative; Qual = qualitative; JSP = *Journal of School Psychology*; PITS = *Psychology in the Schools*; SPR = *School Psychology Review*; SPQ = *School Psychology Quarterly*; LR = literature review; MA = meta-analysis; C = commentary; R = response; BR = book review.

Table 3
 Type and Design of Article Published in School Psychology Journals from 2001 to 2005, Data Presented by Year

Year	Empirical Study			Review Paper				Review Paper with Case Example	Total Articles
	Quant	Qual	Mixed	LR	MA	C or R	BR		
2001	53.59% (82)	0.65% (1)	5.88% (9)	23.53% (36)	2.61% (4)	9.15% (14)	3.27% (5)	1.31% (2)	153
2002	53.94% (89)	1.21% (2)	4.24% (7)	11.52% (19)	3.03% (5)	18.79% (31)	6.06% (10)	1.21% (2)	165
2003	31.46% (56)	0% (0)	7.30% (13)	23.60% (42)	1.12% (2)	27.53% (49)	6.18% (11)	2.81% (5)	178
2004	39.39% (78)	0% (0)	6.57% (13)	21.72% (43)	0.51% (1)	20.20% (40)	9.09% (18)	2.53% (5)	198
2005	37.43% (67)	1.68% (3)	10.06% (18)	17.88% (32)	5.59% (10)	13.41% (24)	11.17% (20)	2.79% (5)	179
Total	42.61% (372)	0.69% (6)	6.87% (60)	19.70% (172)	2.52% (22)	18.10% (158)	7.33% (64)	2.18% (19)	873

Quant = quantitative; Qual = qualitative; LR = literature review; MA = meta-analysis; C = commentary; R = response; BR = book review.

To detect temporal trends in the frequency of mixed methods research in the school psychology literature, articles were collapsed across journal source and examined by publication year. Table 3 presents the frequency of article type and empirical design for each of the 5 years. In 2001, 9 of the 92 published empirical studies (9.78%) employed a mixed methods design. In 2002, 7.14% of all empirical studies were mixed methods. In 2003, a substantially higher percentage (18.84%) of published studies included both qualitative and quantitative components. In 2004, the same number of mixed methods studies were published ($n = 13$); however, when examined in proportion to the total number of empirical studies ($n = 91$), the proportion decreased slightly (14.29%). In 2005, both the frequency of mixed methods studies ($n = 18$) and percentage of empirical investigations

that used mixed methods designs (20.45%) increased. Taken together, these data suggest a slight trend toward increased use of mixed methods research in recent years.

Of the 438 total empirical articles published in these journals across the 5 years, 60 (i.e., 13.7%) were classified as representing some form of mixed methods research. Table 4 provides results from a further analysis of these articles. Of studies using mixed methods, 56.67% were partially mixed, and 43.33% were fully mixed. More studies used a sequential design (61.67%) than a concurrent design (38.33%). Finally, 76.67% of mixed methods designs were dominant toward a specific method; 44 of these 46 studies (95.65%) placed emphasis on the quantitative component, whereas only 2 studies were primarily qualitative in nature.

CRITIQUE OF MONOMETHOD AND MIXED METHODS STUDIES

To illustrate how mixed methods may enhance research in school psychology, we reviewed two monomethod articles (one qualitative and one quantitative), as well as one mixed methods study as a prototype for best practices in mixed methods research. Articles pertinent to the topic of *bullying* were selected as the focus of this review for multiple reasons. First, bullying is considered to be an important issue to address in both practice and research. Second, bullying is a topic that has been widely researched and would likely afford various research designs to critique. Although there are certainly other important topics in school psychology that also are receiving increased attention in research and practice (e.g., response to intervention, Ysseldyke, 2005; evidence-based interventions, Kratochwill & Stoiber, 2002), the authors intentionally focused on the bullying literature primarily due to the availability of empirical examples of all three research paradigms.

Qualitative Study on Bullying

Quantitative studies have dominated the literature base for bullying. Indeed, using the keyword “bullying,” these authors’ review of the PsycINFO database for the years 2000-2004 yielded 116 articles, of which 75 represented empirical studies, which were subjected to a mixed methods analysis, as described earlier. An effects matrix, using Excel, revealed that of these 75 studies, only 7 (i.e., 9%) represented qualitative studies and only 12 (i.e., 16%) represented studies with mixed methods designs. In fact, qualitative inquiries published in the area of bullying have been limited primarily to dissertations (e.g., Crothers, 2001; Hazel, 2004). However, we identified a peer-reviewed study (i.e., Teräsahjo & Salmivalli, 2003) that focuses solely on the use of qualitative methods. In this study, the researchers contend that bullying is a significant problem for youth today, and the general intent of this study is to highlight roles, expectations, and perceptions held by students regarding the bullying paradigm.

Teräsahjo and Salmivalli’s (2003) study, entitled “‘She is not Actually Bullied.’ The Discourse of Harassment in Student Groups,” was undertaken to make known children’s views of bullying. The concept of “interpretive repertoire” was used in this study as a means to identify recurring terms for characterizing and explaining bullying. This investigation involved 74 (39 girls, 35 boys) children in elementary school who were placed into discussion groups based on similar peer networks. This design moved beyond evaluating isolated individuals’ perceptions of bullying and instead encompassed and “focus[ed] on the role of socially shared linguistic resources drawn upon to construct bullying” (Salmivalli, 2001, p. 135). This represents a novel approach to addressing cultural norms and similarities in thought systems among students. Research on bullying typically identifies conflicting information between attitudes and actual observed behavior of victims and bullies (Salmivalli, 2001). Therefore, this study used questionnaires and interviews to elicit student feedback. Findings from the study led the researchers to conclude that there are four categorizations of bullying behaviors: “bullying as intentional harm doing,” “bullying as harmless,” “bullying as

Table 4
Mixed Methods Designs Published in School Psychology Journals from 2001 to 2005

Journal	PCE	PCD Qual	PCD Quan	PSE	PSD Qual	PSD Quan	FCE	FCD Qual	FCD Quan	FSE	FSD Qual	FSD Quan	Total Mixed
JSP	0% (0)	0% (0)	0% (0)	6.67% (1)	6.67% (1)	53.33% (8)	0% (0)	0% (0)	6.67% (1)	6.67% (1)	6.67% (1)	13.33% (2)	15
PITS	0% (0)	0% (0)	36.84% (7)	0% (0)	0% (0)	31.58% (6)	21.05% (4)	0% (0)	0% (0)	0% (0)	0% (0)	10.53% (2)	19
SPQ	0% (0)	0% (0)	25.00% (3)	0% (0)	0% (0)	25.00% (3)	8.33% (1)	0% (0)	8.33% (1)	8.33% (1)	0% (0)	25.00% (3)	12
SPR	0% (0)	0% (0)	21.43% (3)	0% (0)	0% (0)	14.29% (2)	21.43% (3)	0% (0)	0% (0)	21.43% (3)	0% (0)	21.43% (3)	14
Total	0% (0)	0% (0)	21.67% (13)	1.67% (1)	1.67% (1)	31.67% (19)	13.33% (8)	0% (0)	3.33% (2)	8.33% (5)	1.67% (1)	16.67% (10)	60

JSP = Journal of School Psychology; PITS = Psychology in the Schools; SPR = School Psychology Review; SPQ = School Psychology Quarterly; P = partially mixed; F = fully mixed; C = concurrent; S = sequential; E = equal; D = dominant; Qual = qualitative; Quan = quantitative.

justified,” and “girls’ talk” (Salmivalli, 2001, p. 141). The authors concluded that bullies tend to justify their behaviors based on oddities of victims. This study, however, addressed “female aggression,” making it relevant to a broader group of aggressive children, consistent with current research that indicates females may use different forms of aggression and/or exhibit higher rates (i.e., relational and social) (Osterman et al., 1998).

Although this is a very well-designed qualitative study based on its rigor and sampling procedures, we believe that if a mixed methods research design had been used—rather than a monomethod design—additional information might have been gleaned with the potential to enhance understanding of underlying phenomena. That is, by also collecting quantitative data, the researchers likely would have been able to address their research question to a greater extent. For example, the researchers could have disaggregated the data into various groups: across classes, ages, roles, and gender. Moreover, due to the relatively large sample size in this study, inferential statistical methods (e.g., chi-square analyses, Fisher’s exact test) could have been used to compare statistically the proportion of students/peer groups falling into each of the four categories. Including a quantitative component likely would have helped substantiate the findings, as well as provide descriptive information of the participants and their perceptions of bullying. Even in cases where researchers use a sample size that does not justify making statistical generalizations (i.e., making generalizations or inferences on data extracted from a representative statistical sample to the population from which the sample was drawn), the inclusion of quantitative data within a planned mixed methods framework could enhance two other forms of generalizations, namely, analytical generalizations (i.e., “applied to wider theory on the basis of how selected cases ‘fit’ with general constructs”; Curtis, Gesler, Smith, & Washburn, 2000, p. 1002) and case-to-case transfer (i.e., making generalizations from one case to another similar case; Firestone, 1993).

Quantitative Study on Bullying

Another important investigation of bullying is found in Beran and Tutty’s (2002) analysis of the frequency of bullying behaviors among elementary school children. Students were categorized into Division I (Grades 1–3; $n = 224$) or Division II (Grades 4–6; $n = 248$), and completed the Bully/Victim Questionnaire, which was modified for the Division I students to accommodate for the reading ability of younger students. This questionnaire comprised a 5-point Likert-format scale that measures how often children experience specific bullying behaviors as either a victim or a perpetrator, as well as their feelings of safety and the accessibility of adult support while in school. Results contradicted the previous research in several areas, including the frequency of being bullied in Grades 4 to 6 (54% vs. 24% in previous studies with Canadian populations) and frequency of bullying others in Grades 4 to 6 (33% vs. 10%–15%). Regarding feelings of safety at school, nearly 90% of both younger and older students felt safe at school, with the playground identified as the least safe area. Across age groups, the majority of children reported asking at least one person for help and also receiving that help.

Several aspects of this study were commendable, particularly the authors’ investigation of both physical and verbal aggression. Too often, aggression is treated as a physical act only, although recent research is now differentiating between physical and social aggression (Galen & Underwood, 1997). These investigators also used a well-established questionnaire, enabling their results to be compared to previous studies. As an exploratory study reporting descriptive data, this inquiry displays sound methodology and is a good example of the value of collecting and analyzing quantitative data. Also, the design allows for a significant amount of data to be collected from a large sample in a relatively small amount of time. However, the research design likely could have been strengthened if qualitative data had also been collected and analyzed. In particular, information collected via the

questionnaire could have been validated/explored further via (qualitative) interviews with a subset of the sample (i.e., sequential mixed methods design). For example, follow-up interviews could have been conducted with the participants with the most extreme responses in terms of feelings of safety and the accessibility of adult support while in school for the purpose of triangulation, complementarity, initiation, development, or expansion, as defined previously (cf. Greene et al., 1989). Such information might have helped the researchers make stronger inferences.

Mixed Methods Study

Cowie and Olafsson's (2000) research provides a compelling example of the ability of mixed methods approaches to obtain rich findings. These researchers conducted a program evaluation and included both a quantitative (survey) and qualitative (interviews) component to examine the impact of a peer support service in a school with high rates of bullying. The program consisted of peer training and ongoing support and was implemented in an all-boys high school. The program involved training peers in support skills (e.g., listening skills, empathy, responsiveness to feelings of others, a problem-solving approach) through 16 hours of training over 2.5 days. These "peer helpers" were authorized to meet with students during lunch and were also instructed to look out for bullying behaviors and to intervene/mediate when appropriate. Also, they were provided with weekly supervision that included monitoring and feedback, as well as resolution tips. The peer support service was advertised through posters and a school assembly to announce its existence. The researchers administered an established questionnaire (Olweus Questionnaire; Olweus, 1991) at two time points (November and June) to collect pretest and posttest data. Results indicated that the incidence of bullying was high across the study, and that students perceived trained peers, teachers, and other young people as intervening *less* in June than in November. Other negative results were reported by the researchers; in particular, although there was a 9% increase in students who had informed someone about their being bullied, a full 50% of bullies had not been approached regarding their bullying by any of these three groups (i.e., trained peer helpers, teachers, other young people) in November, a figure that remained unchanged in June. The results from the quantitative portion of the study indicated that the peer support program was ineffective at reducing the rate of bullying, and in fact, the rate of bullying had increased while the rate of intervention in the bullying had decreased over the course of the study.

The researchers also conducted interviews with trained peer supporters, a sample of users of the service (i.e., victims), a sample of potential users, and two teachers responsible for implementing the peer support service. Results from the interviews with peer helpers indicated that they viewed the program positively, due in large part to the impact of taking responsibility for the issue of bullying in their school and being trusted by staff to do so. In their opinion, the peer support program had made a strong positive impact on the problem of bullying. The users of the service (i.e., victims) reported that the peer helpers were useful and stated that they would recommend it to peers. Interestingly, they did not feel any safer in school. Of the quasirandom sample of 15 potential users, two-fifths of them had not heard of the service, indicating a possible lapse in communication during advertising. This information is particularly important in light of the fact that 9 students stated that they would use the service if necessary, and 12 would recommend it to a peer. Staff opinions were more mixed, with one teacher expressing a lack of perceived control over students, and the other expressing an optimistic view of the peer support intervention.

Clearly, the strength of this study lies in its utilization of mixed methods; the qualitative data from the interviews complemented the survey results and allowed the researchers to make richer interpretations. For instance, the survey data alone paint a dismal picture of the peer support program and would imply that the program is not only ineffective, but also potentially harmful.

However, the qualitative data provided by the interviews are particularly rich in this instance, as they highlight the strengths of the program (e.g., the positive effects on peer helpers), and thus provide a rationale for modifying the program to address weaknesses rather than discarding it entirely. The study design provides readers with a clearer account of the program as well as the data collected, and allows for a wider range of interpretations of the problem of bullying in this high school.

CONCLUSIONS AND FUTURE DIRECTIONS

Although several subdisciplines within psychology (e.g., clinical psychology, cross-cultural psychology, comparative psychology) have embraced mixed methods approaches to a greater degree (Waszak & Sines, 2003), until now, no information has been provided as to the extent to which school psychology researchers have been using mixed methods designs. That is, prior to this article, the role of mixed methods in school psychology research has not been the subject of formal examination. Thus, this article has provided useful information in this area in several ways.

First, by being able to classify all 438 empirical studies published in the four school psychology journals between 2001 and 2005, we have demonstrated how a typology of mixed methods designs, such as that provided by Leech and Onwuegbuzie (in press), can be used by school psychology researchers. More specifically, we have shown that the following three criteria are useful for identifying and distinguishing most mixed methods studies in school psychological research: level of mixing, time orientation, and emphasis of quantitative and qualitative approaches. Moreover, as asserted by Leech and Onwuegbuzie (in press), such typologies are useful because (a) they assist in providing the school psychology field with a flexible organizational structure, (b) they help provide more credibility to the field of school psychology by providing examples of research designs that are substantively different than monomethod designs, (c) they help advance a common language for researchers using mixed methods techniques, and (d) they provide guidance and direction for school psychology researchers to design their mixed methods studies.

Second, this article has documented the overall prevalence of mixed methods studies in school psychological research. Specifically, among studies published in four leading school psychology journals in recent years, we found that 13.7% of the studies can be classified as involving mixed methods research. Of these, the majority (61.67%) was sequential in nature, and the overwhelming majority placed emphasis on the quantitative component (95.65%). Also, these mixed methods studies were approximately evenly distributed between fully mixed methods research designs (43.33%) and partially mixed methods research designs (56.67%).

Third, although not the main focus of the study, surprisingly, only six qualitative studies have been published in these journals during the selected years. This represents less than 2% of the 438 empirical articles appearing in these journals. This paucity of qualitative studies exists despite the fact that "since the 1960s some psychologists. . . have become dissatisfied and disillusioned with the products of. . . [the] quantitative approach to human nature, and have opted for a more *naturalistic, contextual and holistic understanding* of human beings in society" (Todd et al., 2004, p. 4; emphasis in original). Plausible explanations for this finding include the possibilities that the overwhelming majority of qualitative research conducted in the area of school psychology is being submitted to nonschool psychology journals (e.g., journals that more routinely publish qualitative studies) and/or a high proportion of qualitative research studies that are being submitted to school psychology journals is being rejected. However, the fact that only 9% of articles published in the area of bullying throughout the psychological literature are qualitative in nature suggests a simpler explanation, specifically that the overwhelming majority of school psychology research is quantitative.

To investigate this issue further, we decided to conduct a follow-up study of the curriculum of graduate-level school psychology programs across the United States.² Specifically, we examined the Web site of every NASP-approved graduate-level school psychology program ($n = 57$), using the list provided in the November 2006 issue of *Communiqué* (NASP, 2006, p. 44). Of the 57 approved graduate-level school psychology programs, only 1 (1.75%) appeared to require that students enroll in one or more qualitative courses, 1 (1.75%) appeared to require that students enroll in one or more courses that integrate quantitative and qualitative research approaches to some degree, and 11 (19.3%) appeared to offer one or more qualitative courses as an elective. This suggests that a likely explanation for the dearth of qualitative research articles and the relatively small proportion of mixed methods articles published in the four flagship school psychology journals likely reflects the fact that the majority of school psychologists do not receive formal training in qualitative or mixed methods approaches.

Fourth, by comparing and contrasting quantitative, qualitative, and mixed methods studies published in the area of bullying, we have demonstrated that both quantitative and qualitative studies could have been enhanced by using a mixed methods approach. Quantitative research is useful for identifying prevalence rates (i.e., descriptive research), relationships (i.e., correlational research, causal-comparative, quasiexperimental research), and cause-and-effect relationships (i.e., experimental research), which, under certain conditions (e.g., large and random samples), can be generalized from the sample to the population. Unfortunately, quantitative research studies typically yield data that do not explain the prevalence rates, differences, or relationships that have been identified by the researcher. Alternatively stated, quantitative research is not optimal for answering why and how questions. Quantitative research is more apt for “answering questions of who, where, how many, how much, and what is the relationship between specific variables” (Adler, 1996, p. 5).

Qualitative research is useful for obtaining insights into the routine and problematic experiences and meaning attached to these experiences of individuals (e.g., biography, autobiography, life history, oral history, autoethnography, case study) and groups (e.g., phenomenology, ethnography, grounded theory), which, under certain conditions (e.g., data saturation, theoretical saturation, informational redundancy), can achieve *Verstehen* or understanding. However, as noted by Onwuegbuzie and Johnson (2004), “Qualitative research is typically based on small, nonrandom samples. . . which means that qualitative research findings are often not very generalizable beyond the local research participants” (p. 410). In contrast, as was the case for Cowie and Olafsson’s (2000) investigation, mixed methods techniques can greatly improve the quality of inferences made in school psychological research, compared to monomethod studies.

Implications of the Findings

Our mixed methods analysis of recently published school psychology journals has led us to conclude that researchers may be using mixed methods designs more frequently than is reported in the literature (i.e., 13.7%). This underreporting of mixed methods studies stems from the fact that school psychology researchers do not always make it clear that they are conducting mixed methods research. In fact, of the 60 studies that we classified as being mixed, in no case did the researcher(s) explicitly label their study as representing mixed methods research, although a few correctly identified separate sections for quantitative and qualitative analysis. An important implication of this is that by not framing their studies in this way, researchers are not likely maximizing the extent to which they are using mixed methodologies. For instance, many authors mentioned conducting interviews with

²Our decision here was prompted by one of the anonymous reviewers. Thus, we graciously thank this anonymous reviewer for providing such an important recommendation.

teachers and parents to collect information about a child's problematic behavior prior to the collection of quantitative data about the specific behaviors. However, data from the interviews were rarely reported, and the method by which the information from the interviews informed subsequent data collection procedures was rarely described. One notable example was found in Doggett, Edwards, Moore, Tingstrom, and Wilczynski (2001). In this study, the authors provided great detail about how information gleaned from teacher interviews contributed to the researchers' hypotheses regarding functions of behavior. Thus, we recommend that future studies include even more information from the qualitative component (e.g., teacher interview), such as verbatim teacher statements, summary of content themes, method by which themes were identified (e.g., themes were identified after interviews with multiple teachers, after one interview with one teacher about problem behavior across multiple settings, after multiple interviews with one teacher about problem behavior in one setting), and triangulation of information with interview informants (e.g., following hypothesis development, the researcher shares hypotheses with the informant and seeks validation).

As noted by Onwuegbuzie and Leech (2004, 2005), combining quantitative and qualitative research enables school psychology researchers to be more flexible, integrative, and holistic in their investigative techniques, as they strive to address a range of complex research questions that arise. Also, mixed methods research helps school psychology investigators develop a conceptual framework, validate quantitative results by linking the information obtained from the qualitative phase of the study, and construct indices from qualitative data that can be used to analyze quantitative data (Madey, 1982). Furthermore, by conducting mixed methods studies, researchers are in a better position to combine empirical precision with descriptive precision (Onwuegbuzie, 2003a). In addition, by employing a pragmatist lens (i.e., using both quantitative and qualitative techniques), rather than a single lens (i.e., conducting monomethod studies), school psychology researchers are able to *zoom in* to microscopic detail or to *zoom out* to indefinite scope (Willems & Raush, 1969). As such, mixed methods research investigations afford school psychology investigators with the opportunity to combine macro and micro levels of a study (Onwuegbuzie & Leech, 2005).

Although it might be argued that the prevalence rate of mixed methods studies published in school psychology journals (i.e., 13.7%) is notable, we believe that this proportion is scant, bearing in mind the conceptual and methodological appeal of mixed methods research. Thus, we recommend that more mixed methods studies be conducted in school psychology research when the research question warrants such investigations. Furthermore, we recommend that when mixed methods studies are designed, a greater proportion of them emphasize the *qualitative* component. Our recommendations here are consistent with those of Kratochwill and Stoiber (2000), who advocate for the "interweaving of quantitative and qualitative research methodologies so that the most accurate and authentic picture of the knowledge bases and skills associated with change processes is available" (p. 600). Indeed, mixed methods techniques are a natural extension of the mixed methods procedures that school psychology practitioners use in their day-to-day activities.

APPENDIX

Decision Rules for Classifying Articles Published in Selected School Psychology Journals

Rule 1. Although the addition of qualitative information to a largely quantitative study would typically lead to a designation of "partially mixed, dominant-status quantitative," studies were not coded as mixed if the addition of the qualitative information was not systematic and/or planned. For instance, reporting spontaneous, anecdotal comments from study participants in the introduction or discussion section of a quantitative study did not result in a mixed methods designation.

Rule 2. Mere use of interview methods during data collection did not automatically result in a mixed methods designation. Furthermore, structured or semistructured interviews that generated

quantitative data, such as frequency counts or a list of target behaviors, were not considered representative of qualitative research.

Rule 3. In studies that used small sample sizes to evaluate quantitatively intervention effectiveness, detailed background information about participant(s) was not coded as representing a qualitative component.

Rule 4. Reporting planned collection of qualitative data for the purpose of assessing or verifying the validity of an intervention resulted in a mixed methods designation (assuming that quantitative data were collected solely for the purpose of evaluating treatment outcomes). Even intervention studies that reported only quantitative analyses in the results section were still coded as mixed if the brief discussion of treatment integrity included qualitative data.

Rule 5. Mixed methods studies in which the sole qualitative component involved an assessment of treatment integrity were coded as partially mixed (vs. fully mixed) because the information about treatment integrity was considered an “add-on” to the study, not an essential step in the completion of the study. One could still answer the primary research questions without the qualitative component.

Rule 6. Mixed methods studies in which the qualitative component was essential in order for the remainder of the study to be carried out, and those studies that reported and analyzed both qualitative and quantitative data were coded as fully mixed. For instance, studies employing qualitative methods (e.g., focus groups, open-ended questionnaires) in order to develop the measurement tool that was used in the remainder of the study were designated as “fully mixed” because the completion of the study was contingent on the creation of the instrument.

Rule 7. Content analyses were coded as quantitative if the results of the content analysis were reported numerically (e.g., this study). If the content analysis yielded themes that were not quantified in any way, the study was coded as representing qualitative research.

Rule 8. Highlighting case examples from a larger quantitative study did not result in a mixed methods designation unless the case example section was augmented by new qualitative data (as opposed to simply an in-depth examination of the quantitative data yielded from the case examples who were participants in the larger quantitative study).

REFERENCES

- Adler, L. (1996). Qualitative research of legal issues. In D. Schimmel (Ed.), *Research that makes a difference: Complementary methods for examining legal issues in education*, NOLPE Monograph Series (No. 56) (pp. 3–31). Topeka, KS: NOLPE.
- American School Counselor Association. (2006). *Role of the school counselor*. Alexandria, VA: Author. Retrieved November 21, 2007, from <http://www.schoolcounselor.org/content.asp?pl=327&sl=341&contentid=341>
- Atkinson, P., & Hammersley, M. (1994). Ethnography and participant observation. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 248–261). Thousand Oaks, CA: Sage.
- Beran, T. N., & Tutty, L. (2002). Children's reports of bullying and safety at school. *Canadian Journal of School Psychology*, 17(2), 1–14.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, 81–105.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.
- Collins, K. M. T., Onwuegbuzie, A. J., & Jiao, Q. G. (2007). A mixed methods investigation of mixed methods sampling designs in social and health science research. *Journal of Mixed Methods Research*, 1(4), 267–294.
- Collins, K. M. T., Onwuegbuzie, A. J., & Sutton, I. L. (2006). A model incorporating the rationale and purpose for conducting mixed methods research in special education and beyond. *Learning Disabilities: A Contemporary Journal*, 4, 67–100.
- Cowie, H., & Olafsson, R. (2000). The role of peer support in helping the victims of bullying in a school with high levels of aggression. *School Psychology International*, 21(1), 79–95.
- Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- Crothers, L. M. (2001). *Childhood bullying: Middle school students' perceptions of the problem and preferences for teacher intervention*. Dissertation Abstracts International: Section A: Humanities & Social Sciences, 62(1-A), 76.
- Curtis, S., Gesler, W., Smith, G., & Washburn, S. (2000). Approaches to sampling and case selection in qualitative research: Examples in the geography of health. *Social Science and Medicine*, 50, 1001–1014.

- Doggett, R. A., Edwards, R. P., Moore, J. W., Tingstrom, D. H., & Wilczynski, S. M. (2001). An approach to functional assessment in general education classroom settings. *School Psychology Review, 30*, 313–328.
- Firestone, W. A. (1993). Alternative arguments for generalizing from data, as applied to qualitative research. *Educational Researcher, 22*(4), 16–23.
- Galen, B. R., & Underwood, M. K. (1997). A developmental investigation of social aggression among children. *Developmental Psychology, 33*, 589–600.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*, 255–274.
- Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (3rd ed., pp. 191–215). Thousand Oaks, CA: Sage.
- Halpern, E. S. (1983). Auditing naturalistic inquiries: The development and application of a model. Unpublished doctoral dissertation, Indiana University, Bloomington.
- Hanson, W. E., Creswell, J. W., Plano Clark, V. L., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology, 52*, 224–235.
- Hazel, C. E. (2004). School safety sacrificed to standardized assessment of achievement: The story of one neighborhood elementary school community. *Dissertation Abstracts International: Section B: The Sciences & Engineering, 64*(8-B), 4109.
- Johnson, R. B., & Christensen, L. B. (2004). *Educational research: Quantitative, qualitative, and mixed approaches*. Boston: Allyn & Bacon.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14–26.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2005, April). Mixed methods research: Is there a criterion of demarcation?. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.
- Johnson, R. B., & Turner, L. A. (2003). Data collection strategies in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 297–319). Thousand Oaks, CA: Sage.
- Kratochwill, T. R., & Stoiber, K. C. (2000). Uncovering critical research agendas for school psychology. *School Psychology Review, 29*, 591–603.
- Kratochwill, T. R., & Stoiber, K. C. (2002). Evidence-based interventions in school psychology: Conceptual foundations of the Procedural and Coding Manual of Division 16 and the Society for the Study of School Psychology Task Force. *School Psychology Quarterly, 17*(4), 341–389.
- Kvale, S. (1995). The social construction of validity. *Qualitative Inquiry, 1*, 19–40.
- Leech, N. L., & Onwuegbuzie, A. J. (in press). A typology of mixed methods research designs. *Quality & Quantity: International Journal of Methodology*.
- Madey, D. L. (1982). Some benefits of integrating qualitative and quantitative methods in program evaluation, with some illustrations. *Educational Evaluation and Policy Analysis, 4*, 223–236.
- Maxwell, J. A. (1992). Understanding and validity in qualitative research. *Harvard Educational Review, 62*, 279–299.
- Miles, M., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.
- National Association of School Psychologists (NASP). (2000). *Professional conduct manual: Principles for professional ethics, Guidelines for the provision of school psychological services*. Bethesda, MD: Author.
- National Association of School Psychologists (NASP). (2006). *NASP-approved graduate programs in school psychology*. *Communiqué, 35*(3), 44.
- Newman, I., Ridenour, C. S., Newman, C., & DeMarco, G. M. P. (2003). A typology of research purposes and its relationship to mixed methods. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 189–208). Thousand Oaks, CA: Sage.
- Olweus, D. (1991). Bully/victim problems among school children: Basic facts and effects of a school-based intervention program. In D. Pepler & K. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 411–448). Hillsdale, NJ: Erlbaum.
- Onwuegbuzie, A. J. (2003a). Effect sizes in qualitative research: A prolegomenon. *Quality & Quantity: International Journal of Methodology, 37*, 393–409.
- Onwuegbuzie, A. J. (2003b). Expanding the framework of internal and external validity in quantitative research. *Research in the Schools, 10*(1), 71–90.
- Onwuegbuzie, A. J., & Collins, K. M. T. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report, 12*, 281–316. Retrieved September 5, 2007, from <http://www.nova.edu/ssss/QR/QR12-2/onwuegbuzie2.pdf>

- Onwuegbuzie, A. J., & Johnson, R. B. (2004). Mixed method and mixed model research. In R. B. Johnson & L. B. Christensen (Eds.), *Educational research: Quantitative, qualitative, and mixed approaches* (pp. 408–431). Needham Heights, MA: Allyn & Bacon.
- Onwuegbuzie, A. J., & Johnson, R. B. (2006). The validity issue in mixed research. *Research in the Schools*, 13(1), 48–63.
- Onwuegbuzie, A. J., & Leech, N. L. (2004). Enhancing the interpretation of “significant” findings: The role of mixed methods research. *The Qualitative Report*, 9(4), 770–792. Retrieved February 20, 2008, from <http://www.nova.edu/ssss/QR/QR9-4/onwuegbuzie.pdf>
- Onwuegbuzie, A. J., & Leech, N. L. (2005). On becoming a pragmatist researcher: The importance of combining quantitative and qualitative research methodologies. *International Journal of Social Research Methodology: Theory & Practice*, 8, 375–387.
- Onwuegbuzie, A. J., & Leech, N. L. (2006). Linking research questions to mixed methods data analysis procedures. *The Qualitative Report*, 11, 474–498. Retrieved February 20, 2008, from <http://www.nova.edu/ssss/QR/QR11=3/onwuegbuzie.pdf>
- Onwuegbuzie, A. J., & Leech, N. L. (2007). Validity and qualitative research: An oxymoron? *Quality & Quantity: International Journal of Methodology*, 41, 233–249.
- Onwuegbuzie, A. J., & Teddlie, C. (2003). A framework for analyzing data in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 351–383). Thousand Oaks, CA: Sage.
- Osterman, K., Bjorkqvist, K., Lagerspetz, K., Kaukiainen, A., Landau, S. F., Fraczek, A., et al. (1998). Cross-cultural evidence of female indirect aggression. *Aggression Behavior*, 24, 1–8.
- Salmivalli, C. (2001). Group view on victimization—Empirical findings and their implications. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 398–419). New York: Guilford Press.
- Smith, J. K., & Heshusius, L. (1986). Closing down the conversation: The end of the quantitative-qualitative debate among educational inquirers. *Educational Researcher*, 15(1), 4–12.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Applied Social Research Methods Series (Vol. 46). Thousand Oaks, CA: Sage.
- Tashakkori, A., & Teddlie, C. (Eds.). (2003). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage.
- Tashakkori, A., & Teddlie, C. (2006, April). Validity issues in mixed methods research: Calling for an integrative framework. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Teräsahjo, T., & Salmivalli, C. (2003). “She is not actually bullied.” The discourse of harassment in student groups. *Aggressive Behavior*, 29, 134–154.
- Todd, Z., Nerlich, B., & McKeown, S. (2004). Introduction. In Z. Todd, B. Nerlich, S. McKeown, & D. D. Clarke (Eds.), *Mixing methods in psychology: The integration of qualitative and quantitative methods in theory and practice* (pp. 3–16). Hove, East Sussex, England: Psychology Press.
- Waszak, C., & Sines, M. C. (2003). Mixed methods in psychological research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 557–576). Thousand Oaks, CA: Sage.
- Webb, E. J., Campbell, D. T., Schwartz, R. D., & Sechrest, L. (1966). *Unobtrusive measures*. Chicago: Rand McNally.
- Willems, E. P., & Raush, H. L. (1969). *Naturalistic viewpoints in psychological research*. New York: Holt, Rinehart, & Winston.
- Ysseldyke, J. (2005). Assessment and decision making for students with learning disabilities: What if this is as good as it gets? *Learning Disability Quarterly*, 28(2), 125–128.

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