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Writing with Discipline: A Call for Avoiding APA Style Guide Errors in Manuscript Preparation

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The education community in the United States—as in many countries—is extremely large and diverse. Indeed, as documented by Mosteller, Nave, and Miech (2004),

The United States has more than 3.6 million teachers in elementary and secondary education, more than 100,000 principals, and about 15,000 school districts, each with its own set of district administrators, school board members, and concerned citizens. The parents and family members of the 60 million students in elementary and secondary education represent another constituency, as do the policymakers and legislators in the 50 states (along with the District of Columbia) and at the federal level. Postsecondary education represents another 1 million faculty members, along with an enrollment of 15 million undergraduates and 1.8 million graduate students. (p. 29)

Indeed, with the number of individuals involved in the educational system, educational research has the potential to play a pivotal role in improving the quality of education—from Kindergarten through primary, through secondary, through tertiary education. Yet, for educational research to play such a role, its findings must be disseminated to individuals (e.g., educators, administrators, stakeholders, policymakers) and groups (e.g., teacher associations) who can most effectively use them (Mosteller et al., 2004; Onwuegbuzie, Leech, & Whitmore, 2008). Unfortunately, research findings do not disseminate themselves, regardless of how statistically, practically, clinically, or economically significant they are for the field of education. Rather, it is educational researchers in general and practitioner-researchers in particular who must convey these findings.

One of the most effective ways of disseminating educational research findings is by publishing articles in education journals—of which there are more than 1,100 journals that collectively contain more than 20,000 education research articles each year (Mosteller et al., 2004)—especially those journals that are considered to have the highest visibility for stakeholders and policymakers. Highly visible journals tend to be those that have the most influence for policy and practice. These journals, in turn, tend to be those that have the lowest acceptance rates and highest impact factors (Saha, Saint, & Christakis, 2003). One such influential educational journal is *Educational Researcher*. Indeed, *Educational Researcher* is one of the six flagship journals of the American Educational Research Association (AERA).

According to the website of AERA:

Educational Researcher (ER, begun in 1971; 432 pp./yr.) is published nine times per year and is received by all members of AERA. It contains scholarly articles that come from a wide range of disciplines and are of general significance to the education research community. (AERA, 2008, ¶ 1)

Because we serve as editors of *Educational Researcher*, and one of us serves as a co-editor of another journal—*Research in the Schools*, and because we serve on eight editorial boards and have reviewed manuscripts for 26 journals between us, we have had the opportunity to review and make decisions on hundreds of manuscripts over the last several years. Unfortunately, although many authors who write about school leadership topics or other areas that have implications for school leadership have important findings and/or ideas to impart, they are unable to convey the information in their manuscripts effectively, and thus their manuscripts end up receiving negative evaluations from the reviewers and subsequently get rejected by editors,

including us. A major reason why these authors are unable to submit a publishable manuscript is that they are unable to produce manuscripts that exhibit what we call *writing with discipline*. *Writing With Discipline*

By *writing with discipline* we mean writing research-based manuscripts in a way that demonstrates clarity, focus, and reader-friendliness. In addition, as described in the document "Standards for Reporting on Empirical Social Science Research in AERA Publications" (AERA, 2006), developed by the Task Force on Reporting of Research Methods in AERA Publications and adopted by the AERA Council in 2006,

First, reports of empirical research should be *warranted;* that is, adequate evidence should be provided to justify the results and conclusions. Second, reports of empirical research should be *transparent;* that is, reporting should make explicit the logic of inquiry and activities that led from the development of the initial interest, topic, problem, or research question; through the definition, collection, and analysis of data or empirical evidence; to the articulated outcomes of the study. (AERA, 2006, p. 33)

According to the standards, "Reporting that takes these principles into account permits scholars to understand one another's work, prepares that work for public scrutiny, and enables others to use that work" (AERA, 2006, p. 33) (see also, Elmore, Camilli, Onwuegbuzie, & Mallette, 2007).

Writing With Style

118

However, most importantly, writing with discipline in the field of education means that the manuscript must adopt the language, format, conventions, and standards of the educational community if it is to reach the intended audience. Simply put, it must follow the *style* belonging to that educational community. According to the 10th edition of Merriam-Webster's Collegiate Dictionary (2001), style is "a convention with respect to spelling, punctuation, capitalization, and typographic arrangement and display followed in writing or printing" (p. 1169). Notwithstanding, in the formal writing process, the individual components that characterize a style can vary from one field to the next, from one discipline to next, and even from one publication outlet to the next. However, in the world of academia in general and the field of social and behavioral sciences in particular, fortunately, there are a limited number of formal style guides in the United States, with three of the most common styles in the United States being the Chicago Manual of Style (Chicago Manual, 2003), the Modern Language Association (MLA) Handbook for Writers of Research Papers (Gibaldi, 2003), and the Publication Manual of the American Psychological Association (APA, 2001). In the field of Education, the Publication Manual of the American Psychological Association (APA, 2001) is the style that is most required by journal editors. In fact, Henson (2007), who administered a survey to editors of 50 prominent journals in education, documented that 60% of education journals use APA style. Further, each year, more than 200,000 copies of the Publication Manual are sold throughout the world (Gelfand, Walker, & APA, 2002). Thus, in order to have articles published in education journals, it is difficult for authors from the field of education to avoid having to be familiar with the APA Publication Manual.

History of APA

In 1928, Madison Bentley chaired a meeting of editors and business managers of journals of psychology and anthropology that was sponsored by the National Research Council, which provided the impetus for the first edition of the APA *Publication Manual* (APA, 2001). The goal of this meeting was to discuss the format of journal manuscripts and to reach consensus as to

how to write instructions for authors submitting manuscripts to their journals. This historic meeting led to a report that was published as a seven-page article in *Psychological Bulletin*. This article contained a set of recommendations for authors regarding writing style.

In 1952, a 60-page supplement within *Psychological Bulletin* was published using the title of *Publication Manual* (APA Council of Editors, 1952)—and subsequently published as a stand-alone volume (APA Council of Editors, 1957). Thus, the first edition of the *Publication Manual of the American Psychological Association* was born! The 1957 manual was published in a revised edition 10 years later (APA, 1967), and four additional updated editions of the manual subsequently have been published (APA, 1974, 1983, 1994, 2001) at 7-year intervals—one for every decade that has elapsed since the first edition of the manual. As noted by Daniel and Onwuegbuzie (2007),

Initially, the target audience for the *Publication Manual* was psychologists and researchers and authors from the field of psychology; however, over the years, its audience has broadened substantially–now being utilized throughout the social sciences, including the field of education. The *Publication Manual* has gradually increased both in girth–from 65 pages in the first (1967) edition to 208 in the third to 467 in the fifth–and in scope–from strict attention to formatting and referencing in earlier editions to a focus on "specificity and sensitivity" (APA, 2001b, p. xxiv) and socially correct language in the fourth edition and to firmer details about methodological considerations in the fifth edition. (p. ii)

What is APA Style?

The *Publication Manual* is a reference book that contains rules, conventions, and guidelines commonly referred to as APA style. More specifically, APA style is a standardized

way of writing professional documents. The purpose of APA style is to facilitate clear, standardized, consistent, and informative communications and referencing so that readers of the article from various social and behavioral science fields and beyond can extract similar meaning from the text. As noted by Gelfand et al. (2002), "APA style has also been widely acknowledged as a practical means to organize and communicate technical information" (p. 4). Although it is natural for authors—even prolific authors—to submit manuscripts to journal editors (who require APA style) that contain a few violations to APA style (i.e., APA errors), when authors' manuscripts grossly deviate from APA style in multiple areas, it is likely that their manuscripts will be considered by the reviewers and editors as appearing to be unprofessional and underprepared. Also, by not following the APA rules, conventions, and guidelines, authors' manuscripts are more likely to be difficult to understand, inaccurate, inconsistent, and/or disorganized.

Writing With APA Style

Virtually every field and discipline has conventions for communicating information. For example, mathematicians in the Western world are expected to utilize universal mathematical symbols (e.g., "+" to represent addition, "≥" to represent greater than or equal to). If a mathematician decided to ignore these conventions (e.g., used "+" to represent multiplication), then readers of her/his manuscript would have extreme difficulty understanding the symbols. Thus, it is imperative that mathematicians use the same symbols and conventions. Similarly, if school and district administrators used their own set of created budget codes to organize their budgets and expenditures, chaos would ensue. Therefore, it is essential that school administrators adhere to a predetermined structure to facilitate planning and purchasing.

In much the same way, authors from the field of education submitting manuscripts should communicate their ideas, findings, and interpretations in a consistent manner. More specifically, authors from the field of education submitting manuscripts to editors that require the use of APA style must learn to be competent in its use. Unfortunately, for many—if not most—authors, mastering the appropriate editorial and writing guidelines specified in the *Publication Manual* is extremely difficult (Austin & Calderon, 1996; Hummel, Kaeck, Whatley, & Monetti, 2004). At the same time, instructors find it extremely challenging to teach APA style effectively (Madigan, Johnson, & Linton, 1995; Smith & Eggleston, 2001). One reason might be because the fifth edition of the *Publication Manual* contains a great amount of information to understand and learn.

The problem with attempting to learn APA style is that both students and instructors of the *Publication Manual* do not know where to begin. As such, students of the *Publication Manual* are unable to learn APA style in an optimal manner and instructors are unable to teach in an efficient way. Over the years, several authors have developed techniques that might assist students in learning APA writing style. For example, Stahl (1987) demonstrated that using checklists and consistent requirements across courses facilitated instruction in APA style. Rosenthal, Soper, Coon, and Von Bergen (1999) developed a procedure in which the instructor anonymously displayed the first page of each student's paper via an overhead projector and coedited each introduction with the class. Ault (1991) designed an assignment in which students learned the appropriate organization of empirical reports by placing scrambled paragraphs of an article in the appropriate sections. Ware, Badura, and Davis (2002) also created a set of strategies for learning APA. Dunn et al. (2001) designed a checklist to help students be cognizant of some of the most common APA formatting errors. Gelfand and Walker (1990) developed a training

manual that provides students with opportunities to test their knowledge of APA guidelines via multiple-choice quizzes and to utilize these guidelines in various exercises. Smith and Eggleston (2001) used Gelfand and Walker's (1990) training manual in a study they conducted, wherein 18 students read a poorly written paper and identified as many style errors as possible. Smith and Eggleston (2001) found that students reported positive perceptions of the activity. Further, these students' knowledge of APA (1994) style improved significantly from preactivity to postactivity quizzes. Also, performance on the activity was statistically significantly related to the application of APA (1994) style in an empirical report, with a moderate effect size ($n^2 = 0.59$). More recently, Gelfand et al. (2002) developed a training manual based on the APA (2001) style guide.

Although many of these techniques, guides, and checklists are useful for students and instructors of the *Publication Manual*, with the exception of Dunn et al. (2001), they are not evidence-based. That is, they were developed based on what the authors *think* are the most common APA errors and not based on what *are* the most common APA errors. Thus, through these sets of materials, students likely will be introduced to some APA rules that yield low-incidence errors. Because APA style typically is a small part of any graduate course, instructors do not have the luxury of teaching every or even most aspects of the *Publication Manual*. Also, authors who have graduated from their degree programs and have a need to learn APA style do not have the time to wade through the entire *Publication Manual*. Thus, it is likely that these published tools are not adequately efficient for teaching and learning APA style.

Sources of Evidence

One way of increasing the efficiency with which the *Publication Manual* is learned and taught is by determining the most frequent APA errors (i.e., violations to APA style) and then using this information to provide direction for teaching and learning and to guide the areas of

APA on which to focus—or at least to focus on first. Juve, Weiser, Kennedy, Davis, and Rewey (2000) conducted a study in which they identified the most common APA (1994) formatting errors among 69 manuscripts that were submitted to the Psi Chi Journal of Undergraduate Research. Juve et al. (2000) reported 780 total errors, yielding an average of 11.3 formatting errors per manuscript. However, formatting errors are just one class of errors of the many classes of errors documented in the Publication Manual. Fortunately, Combs and Onwuegbuzie (2009) recently conducted a mixed research study in which they examined 110 manuscripts submitted to *Research in the Schools* over a 6-year period. This number of manuscripts represented more than 50% of all manuscripts submitted to this journal over this period, thereby justifying generalizations being made to the population of manuscripts submitted to Research in the Schools—at least over this period of time. Combs and Onwuegbuzie meticulously documented every single APA error committed by these 110 sets of authors over a 6-year period. As such, Combs and Onwuegbuzie's data set likely is the only one of its type anywhere. Indeed, only journal editors have the opportunity to collect such data and because of the rigor needed in collecting these data, it is extremely unlikely that any other editor documents such information in such a detailed and systematic manner as do these editors. Thus, it is not surprising that findings of this type have never been delineated prior to their study.

Most Frequent APA Errors

Across the 110 manuscripts submitted to *Research in the Schools* that were selected for the study, Combs and Onwuegbuzie (2009) identified a total of 1,163 APA errors that were committed at least one time by the sets of authors, yielding a mean APA error rate of 10.57 per manuscript submitted to *Research in the Schools*. Using classical content analysis techniques (Leech & Onwuegbuzie, 2007, 2008), Combs and Onwuegbuzie identified a total of 60 unique

APA errors that were committed across these 110 manuscripts. These authors then analyzed these 60 APA errors using the method of constant comparison (Glaser & Strauss, 1967). This analyses led to the extraction of the following 14 themes: grammar, format, hyphenation, citing multiple authors, in-text citations, numbers, capitalization, formality and clarity, statistical copy, punctuation, tables and figures, abbreviations, quotations, and bias in language—as shown in Table 1.

Table 1

Themes Emerging from APA Errors Identified by Editor for Manuscripts Submitted to Research in the Schools

Themes	Rank	Frequency (%)
Grammar	1	72
Format	2	67
Hyphenation	3	65
Citing multiple authors	4	61
In-text citations	5	60
Numbers	6	57
Capitalization	7	57
Formality and Clarity	8	56
Statistical copy	9	54
Punctuation	10	48
Tables and Figures	11	45
Abbreviations	12	42
Quotations	13	36

Bias in Language	14	32
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Relationship of Emergent Themes to Manuscript Disposition

Once the themes had been identified, Combs and Onwuegbuzie (2009) used a mixed analysis technique called quantitizing (Tashakkori & Teddlie, 1998), wherein the themes were converted to numeric data by assigning a "1" if the manuscript contained one or more APA errors that was classified under that theme and a "0" if the manuscript did not contain any APA errors that were classified under that theme. This dichotomization led to the formation of what Onwuegbuzie (2003) referred to as an "inter-respondent matrix" (i.e., *manuscript x theme matrix*) that contains a combination of 0s and 1s (p. 396), that indicates which manuscripts contribute to each emergent theme. This inter-respondent matrix allowed Combs and Onwuegbuzie to undertake an array of quantitative analyses. In particular, they undertook two sets of canonical discriminant analyses to determine which of the 14 themes best predicted the disposition of manuscript—that is the decision that the editor made on the manuscript (i.e., reject, revise and resubmit, or accept).

For the first canonical discriminant analysis, Combs and Onwuegbuzie sought to determine which of the 14 themes predicted whether the editor's decision for a manuscript was reject, revise and resubmit, or accept. This analysis revealed two statistically significant canonical functions. The first canonical function ($R_c = 0.48$; X²[28] = 47.47, p < .05) indicated that the following six variables played an important role in predicting the editor's decision: *tables and figures* (standardized canonical discriminant coefficient = .70, structure coefficient = .69), *grammar* (standardized canonical discriminant coefficient = .34, structure coefficient = .35), *citing multiple authors* (standardized canonical discriminant coefficient = .30, structure coefficient = .33), *formatting* (standardized canonical discriminant coefficient = .21, structure

coefficient = .47), and *statistical copy* (standardized canonical discriminant coefficient = .17, structure coefficient = .30). The second canonical function ($R_c = 0.45$; $X^2[13] = 22.08$, p < .05) indicated that the following six variables played an important role in predicting the editor's decision: *formatting* (standardized canonical discriminant coefficient = .60, structure coefficient = .40), *capitalization* (standardized canonical discriminant coefficient = -.57, structure coefficient = -.21), *citing multiple authors* (standardized canonical discriminant coefficient = -.49, structure coefficient = -.40), *abbreviations* (standardized canonical discriminant coefficient = .41, structure coefficient = -.33), *grammar* (standardized canonical discriminant coefficient = .33, structure coefficient = .11), and *formality and clarity* (standardized canonical discriminant coefficient = .30, structure coefficient = .25).

For the second canonical discriminant analysis, Combs and Onwuegbuzie sought to determine which of the 14 themes predicted whether the editor's decision for a manuscript was reject versus non-reject (i.e., revise and resubmit or accept). This analysis revealed a statistically significant canonical function ($R_c = 0.48$; $X^2[14] = 24.84$, p < .05), which indicated that the following four variables played an important role in predicting the editor's decision: *tables and figures* (standardized canonical discriminant coefficient = .69, structure coefficient = .74), *grammar* (standardized canonical discriminant coefficient = .45, structure coefficient = .59), and *statistical copy* (standardized canonical discriminant coefficient = .45, structure coefficient = .59), and *statistical copy* (standardized canonical discriminant coefficient = .24, structure coefficient = .32).

In summary, across the two canonical discriminant analyses, the following eight variables played a role in predicting the manuscript's disposition: tables and figures, grammar, abbreviations, citing multiple authors, formatting, statistical copy, capitalization, and formality and clarity. The following six variables did not appear to play an important role in this prediction: numbers, hyphenation, in-text citations, bias in language, quotations, and punctuation.

Relationship of Total Number of APA Errors to Manuscript Disposition

A one-way analysis of variance revealed a statistically significant difference in the total number of codes among the accept (M = 7.69, SD = 4.50), revise and resubmit (M = 9.62, SD = 4.85), and reject (M = 11.78, SD = 5.22) editor decisions (F[2, 103] = 4.45, p = .014; $n^2 = .08$). A follow-up Scheffé test revealed that manuscripts that were rejected by the editor contained statistically significantly more APA errors than did manuscripts that were accepted by the editor. Moreover, a statistically significant linear trend was found (F[1, 103] = 8.90, p = .004; $n^2 = 0.09$), with the number of errors increasing monotonically as the editor decision went from accept to reject.

Further, when the revise and resubmit and accept decisions were combined to form a non-reject decision, an independent samples *t* test revealed that manuscripts that were rejected by the editor contained statistically significantly (t[93.18] = 2.80, p = .007; Cohen's [1988] d = 0.55) more APA errors than did manuscripts that were not rejected (M = 12.09, SD = 5.41). Even more compellingly, manuscripts that contained nine or more different APA errors were 3.00 times (95% confidence interval [CI] = 1.31, 6.87) more likely to be rejected. These findings suggest strongly that a manuscript that contains many different APA errors—in particular, at least nine different APA errors—is associated with an increased probability of getting a reject decision.

Relationship of Total Number of Emergent Themes to Manuscript Disposition

A one-way analysis of variance revealed a statistically significant difference in the total number of themes among the accept (M = 5.58, SD = 3.45), revise and resubmit (M = 6.79, SD = 3.02), and reject (M = 8.31, SD = 2.83) editor decisions (F[2, 103] = 5.74, p = .004; $n^2 = 0.10$). A follow-up Scheffé test revealed that manuscripts that were rejected by the editor contained statistically significantly more APA errors that were classified as one of the 14 themes than did manuscripts that were accepted by the editor. Moreover, a statistically significant linear trend was found (F[1, 103] = 11.43, p = .001; $n^2 = 0.10$), with the number of themes increasing monotonically as the editor decision went from accept to reject.

Further, when the revise and resubmit and accept decisions were combined to form a non-reject decision, an independent samples *t* test revealed that manuscripts that were rejected (M = 8.31, SD = 2.83) by the editor contained statistically significantly (*t*[78.38] = 3.09, *p* = .003; Cohen's *d* = 0.63) more APA errors that were classified as one of the 14 themes than did manuscripts that were not rejected (*M* = 6.44, *SD* = 3.16). Even more compellingly, manuscripts that contained APA errors that can be classified as falling into eight or more different themes were 3.68 times (95% CI = 1.61, 8.43) more likely to be rejected. These findings suggest strongly that a manuscript that contains many classes (i.e., themes) of APA errors—in particular, at least eight different classes of APA errors—is associated with an increased probability of getting a reject decision.

Description of Themes Emerging from APA Errors Identified by Editor

Based on the findings of Combs and Onwuegbuzie (2009), we will now describe the 14 themes that represent the errors made by authors submitting manuscripts to *Research in the*

Schools. In the following sections, APA violations are presented in rank order of their error rates as shown in Table 1. Moreover, the errors contained in each theme are described.

Grammar. Errors in grammar were found in 71.82% of the manuscripts. Based on the canonical discriminant analysis presented earlier, this theme also was a significant predictor of whether a manuscript was rejected. When defining grammar, the authors of the *Publication* Manual did not include all components of grammar but rather grammar and usage errors "that occur frequently in manuscripts submitted to APA journals" (APA, 2001, p. 41). Combs and Onwuegbuzie (2009) coded grammatical errors in manuscripts in the following areas: disagreement between the subject and verb (e.g., "data is" instead of "data are"), pronoun disagreement (e.g., pronouns disagree in number and gender), incorrect use of relative pronouns (e.g., who, whom, that, which), and incorrect use of subordinate conjunctions (e.g., while, since, although). These errors then were combined and assigned to the theme of grammar. The most frequent error within this theme was the use of *since* when the word *because* would be more specific (see APA, 2001, p. 57); this error was located in 41.82% of the manuscripts. The next most frequent error found in 29.09% of the manuscripts was the use of while instead of although or whereas (see APA, 2001, p. 56). A significant number of authors also had difficulty deciding when to use which versus that; this APA violation was present in 28.18% of the manuscripts. Although there were errors noted in subject/verb disagreement, the use of data paired with a singular verb (e.g., *data is*) was located in 24.55% of the manuscripts. Thus, attention to the correct use of *although, because, which*, and *that*, along with an understanding that *data* are plural, could help authors avoid some of the most common violations reported by Combs and Onwuegbuzie (2009).

Format. Errors involving formatting were located in 67.27% of the manuscripts. Based on the canonical discriminant analysis presented earlier, this theme also was a significant predictor of whether a manuscript was rejected. The theme of format included categories that can be found in chapter 1 of the Publication Manual concerning the manuscript's organization and chapter 5 regarding the preparation of the manuscript. The most frequently occurring error within this theme and found in 30.00% of the manuscripts involved the use of incorrect spacing between words, sentences, and lines. Specifically, the authors of the Publication Manual specify that double-spacing is to occur between all lines in the manuscript, including the title, headings, quotations, references, and tables. Regarding the spacing between characters, only one space should occur after all punctuation—including periods, comma, colons, and semicolons. Moreover, the lines of text should not be justified; instead, authors are instructed to leave "the right margin uneven, or *ragged*" [italics in original] (APA, 2001, p. 287). Other errors noted in the theme of format were missing indentations for paragraphs, incorrect use of underlining, incorrect use of bold typeface, incorrect presentation of lists, and incorrect ordering of the various components of the manuscript (e.g., title page, abstract, references). Another problematic component for authors was the abstract; fortunately, the *Publication Manual* emphasizes the importance of the abstract and provides specific guidelines for writing a concise abstract. Attention to this theme of format might assist authors in preparing manuscripts that appear to comply with the *Publication Manual*. Further, having a polished appearance might increase the chances that the editors will send the manuscript to reviewers. In addition, authors who attend to the details of formatting might be perceived as being those who also attend to other details in their manuscripts.

Hyphenation. Even though the hyphen represents a small character, its use appears to cause much confusion for authors; errors in hyphenation were found in 65.45% of the manuscripts reviewed by Combs and Onwuegbuzie (2009). Instructions regarding hyphenation are contained in the Spelling section of the Publication Manual. Admittedly, the authors of the Publication Manual noted that "choosing the proper form [hyphenated or not hyphenated] is sometimes frustrating" (APA, 2001, p. 89). Authors of manuscripts are instructed first to consult a dictionary; if the word cannot be located, instructions are provided in Table 3.1 of the Publication Manual (see APA, p. 91). The most common hyphenation errors reported by Combs and Onwuegbuzie (2009) were as follows: (a) not hyphenating "a compound with a participle when it precedes the term it modifies" (APA, p. 91) (e.g., role-playing technique), (b) not hyphenating "an adjective-and-noun compound when it precedes the term it modifies" (APA, p. 91) (e.g., middle-class families), (c) omitting a hyphen with "a compound including an adverb ending in -ly" (APA, p. 91) (e.g., widely used practice), and (d) not hyphenating "a compound with a number as the first element when the compound precedes the term it modifies" (APA, p. 91) (e.g., 12th-grade students). Another common error involves the incorrect placement of a hyphen in "common fractions used as nouns" (APA, p. 91). For example, one third in the phrase

one third of the principals would not be hyphenated, although spell check functions in word processing software might indicate that a hyphen is needed.

Citing multiple authors. The next most frequent error found in the manuscripts reviewed by Combs and Onwuegbuzie (2009) involved citations of more than one author used in the text of the paper. Such errors were located in 60.91% of the manuscripts. Based on the canonical discriminant analysis presented earlier, this theme also was a significant predictor of whether a

manuscript was rejected. Within the theme of citing multiple authors, the most problematic convention was the use of *et al.* Specifically, the authors of the *Publication Manual* state that when a work has three, four, or five authors, cite all authors the first time the reference occurs; in subsequent citations, include only the surname of the first

author followed by et al. (not italicized and with a period after "al"). (APA, 2001,

p. 208)

However, it is possible that the *Publication Manual* contributes to the problems that authors experience when citing multiple authors because, as noted by Daniel and Onwuegbuzie (2007), it contains a glaring inconsistency:

APA contains a gross contradiction that, to date, no one seems to have noticed. Specifically, on page 209, the *Publication Manual* states that "When a work has six or more authors, cite only the surname of the first author followed by *et al.* (not italicized and with a period after 'al') and the year for the first and subsequent citations" [italics in original]. Yet, several pages later, on page 241, it is stated that "After the sixth author's name and initial, use *et al.* to indicate the remaining authors of the article" [italics in original]. Clearly, "six or more" (p. 209) is not the same as "After the sixth." Thus, this inconsistency needs to be resolved in future editions of the *Publication Manual.* (p. viii)

In their analysis, Combs and Onwuegbuzie (2009) noted that some authors included all authors' names each time the work was cited and that other authors abbreviated all works using *et al.* after the first author's name. Several errors were noted in the formatting of et al. such as commas and periods being misplaced. Further, in listing a work with three or more authors, a

comma should separate the last two authors. Learning the conventions of citing multiple authors within a manuscript appears to be time well spent for the academic writer.

In-text citations. Similar to the previous theme, the theme of in-text citations emerged as a common error reported in 60.00% of the manuscripts. Although both of the themes, citing multiple authors and in-text citations, comprise errors made when citing sources in the text of a document, each theme is independent such that the coding of errors in each of these themes did not overlap. The most common error coded in this theme was the incorrect use of and and & when citing authors in the text of a document; this error was found in approximately one third (33.64%) of the manuscripts. Another common error located in 26.36% of the manuscripts involved the incorrect ordering of multiple works within a parenthetical citation. When multiple citations are used to provide evidence to an assertion, the multiple references should be placed in alphabetical order. However, inexperienced academic writers may confuse the placement of multiple citations with the placement of individual authors' names within a single citation. Thus, this distinction about order of authors within a single citation and alphabetical arrangement of multiple citations listed in parentheses should be highlighted. Other errors coded in this theme included the incorrect placement of the year and the incorrect use of authors' initials in citations appearing in the text. Academic writers would be wise to master the conventions for citations.

Numbers. Errors made using numbers was the sixth most frequently occurring APA violation; such errors were found in 57.27% of the manuscripts. Interestingly, nine pages in the *Publication Manual* are devoted to the use of numbers; however, more pages are used to explain exceptions rather than the few rules. The first two rules specify that authors should "use figures to express all numbers 10 and above" and should use figures with "all numbers below 10 that are grouped for comparison with numbers 10 and above" (APA, 2001, p. 123). Exceptions are then

20

listed in the five pages following these two rules. Some exceptions are to use numbers when representing percentages, ratios, time, ages, the number of participants, and scores on a scale. Another error in using numbers and common to those writing about education is the notation of grade levels. Some examples of correct APA format of grade levels using numbers are as follows: Grade 8, eighth grade, Grade 12, 12th grade, and 12th-grade students (note that the ordinal number is not a superscript font and the hyphen is used in the last example because *12th grade* describes the noun *students*). Because numbers are found in almost all manuscripts, it would be worthwhile for academic writers to learn conventions for using numbers.

Capitalization. Similar to number errors, capitalization errors were located in 57.27% of the manuscripts. Based on the canonical discriminant analysis presented earlier, this theme also was a significant predictor of whether a manuscript was rejected. The presentation of titles and headers accounted for capitalization errors in 50.00% of the manuscripts. Specifically, the *Publication Manual* states that "major words in titles" and all words with four letters or more should be capitalized (APA, 2001, p. 95). If conjunctions, articles, or short prepositions contain less than four letters, then these words would not be capitalized. In addition, words following a hyphen or a colon within a title are capitalized. Rules for capitalizing words in the various levels of headings and subheadings are explained on pages 113-114 and 289-290. In Levels 1, 2, and 3 headings, the same rules for capitalizing titles apply to these headings. Authors will find few occasions when all five levels of headings are used; rather, many articles require only three levels of headings: Level 1, Level 3, and Level 4 (APA, 2001). Therefore, authors who learn how to capitalize these three levels of headings will be less likely to have capitalization errors in their manuscripts.

Formality and clarity. Of the manuscripts reviewed, 56.36% of them contained errors related to the theme of formality and clarity. Based on the canonical discriminant analysis presented earlier, this theme also was a significant predictor of whether a manuscript was rejected. This theme was created to encompass errors contained in chapter 2 of the Publication *Manual* such as errors related to smoothness of expression, economy of expression, word choice, colloquial expressions, and attributions. The errors coded with highest frequency in this theme related to use of verb tense and attributions. In 32.27% of the manuscripts, authors misused verb tenses. These errors included (a) abrupt shifts in tense within the same paragraph, (b) not using past tense verbs to describe the results of the study or to report previous findings, and (c) not using present tense verbs in the discussions and conclusions. In addition to verb tense, three specific errors of attribution are outlined in the Publication Manual-"use of the third person, anthropomorphism, and use of the editorial we" (APA, 2001, p. 37). Anthropomorphisms, which represent the attributions of human characteristics to inanimate sources, were identified in 27.27% of the manuscripts. Some examples of anthropomorphisms are schools learned their lessons or programs created new roles. Therefore, authors who attend to verb tenses and anthropomorphisms might be able to express ideas in a more concise and clear manner.

Statistical copy. Several errors were noted in 53.64% of the manuscripts that were categorized as statistical copy errors. Based on the canonical discriminant analysis presented earlier, this theme also was a significant predictor of whether a manuscript was rejected. The authors of the *Publication Manual* devote 10 pages to this topic. The most common error described in this theme and found in 30.90% of the manuscripts involved the incorrect formatting of statistical symbols. Statistical symbols are to be presented using an italic typeface; for example, "a lowercase italicized *n* is used to designate the number of members in a limited

22

portion of the total sample (e.g., n = 30)" (APA, 2001, p. 139). Moreover, a space is inserted between the *n*, the equal sign, and the numeral. The number of decimals used, in general, should be rounded to "two decimal places" (APA, p. 129), and a comma is used between groups of three digits of 1,000 or higher, with a few exceptions (see APA, p. 129). Another common error made by authors is the exclusion of the percent (%) symbol when reporting percentages. Indeed, authors should "use the symbol for percent only when it is preceded by a numeral" (APA, p. 140). Because many empirical reports contain descriptions using numbers (e.g., participants, demographics, frequencies), authors should note the conventions adopted in the *Publication Manual* for the preparation of research reports.

Punctuation. Almost one half of the manuscripts (48.18%) contained punctuation errors. Punctuation included commas, semicolons, colons, and dashes. The placement of commas represented the majority of errors found in this theme; 40.00% of the manuscripts had errors of comma placement in a series of three or more items. In many cases, the comma was not included between the *and* or *or* and the last element in a series. Another common error in this theme was coded as a dash error. A dash—specifically, an em dash—is used to set off an element in a sentence or to show a "sudden interruption in the continuity of a sentence" (APA, 2001, p. 81). In some cases, authors used a single hyphen (i.e., en dash) instead of a dash, which is typed as two hyphens or an em dash (see APA, p. 291 for a description). Although there are numerous punctuation guidelines, authors could eliminate a common punctuation error by understanding the APA guidelines for using a comma in a series.

Tables and figures. Although the use of tables and figures can assist authors in presenting results in a clear and concise manner, 45.45% of the manuscripts contained errors that were related to the preparation of tables and figures. Interestingly, based on the canonical discriminant

analysis presented earlier, this theme was by far the most (practically) significant predictor of whether a manuscript was rejected. The authors of the *Publication Manual* stipulate that tables should be used to "supplement the text" (APA, 2001, p. 21). If the author discusses "every item of the table in text, the table in unnecessary" (APA, p. 154). Many errors in this category were related to the formatting used. Tables should be double-spaced and adhere to other formatting guidelines. Unfortunately, the default settings for creating a table in Microsoft Word include both vertical and horizontal lines, which ultimately must be reformatted. In addition, common errors were noted in the presentation of titles prepared for tables and figures (cf. Daniel & Onwuegbuzie, 2007). Finally, tables and figures should be placed after the reference list instead of within the text of the document and each table and figure should appear on a separate page.

Abbreviations. Errors related to abbreviations were noted in 41.82% of the manuscripts. Based on the canonical discriminant analysis presented earlier, this theme also was a significant predictor of whether a manuscript was rejected. Authors should limit the use of abbreviations in their writings because an overuse could impede clear communication (APA, 2001). In fact, if an abbreviation is used fewer than four times in a long paper, writers of the *Publication Manual* suggest that abbreviations be spelled out each time. If abbreviations are used, authors should spell out abbreviations the first time used and include the abbreviations in parentheses. Typically, abbreviations that are acronyms do not require the use of periods. Moreover, abbreviations should not be used to begin a sentence. One common abbreviation error is made by writers who refer to the *United States*. When used as a noun, *United States* should be spelled out. When used as an adjective, an abbreviation, such as *U.S. schools*, can be used. When deciding whether to use abbreviations, authors should consider their audiences and "use only those abbreviations that will help you communicate with your readers" (APA, 2001, p. 104).

Quotations. Academic authors sometimes use other writers' and researchers' exact words. To avoid plagiarism, quotation marks should be used to indicate the exact words of others. In addition, the *Publication Manual* specifies that a source and location of the material is required (e.g., page number, paragraph number). Combs and Onwuegbuzie (2009) noted that 36.36% of the manuscripts in their sample contained errors related to direct quotations. The most frequent error occurred when authors failed to provide an exact location of the quoted materials; that is, a page number was not included. Although not stated directly in the *Publication Manual*, in keeping with the principle of economy of expression, the use of direct quotations should be limited to those instances when another's exact words are more precise and clearer than could be expressed in a paraphrase. When using direct quotations, authors should note several specific formatting rules provided in the *Publication Manual*.

Bias in language. In keeping with its principle of fairness, APA specifies that writers should "avoid perpetuating demeaning attitudes and biased assumptions" (APA, 2001, p. 61). Combs and Onwuegbuzie (2009) noted that 31.82% of the submissions contained errors related to labels used by authors to describe people. For example, the term *participants* should be used instead of *subjects* when describing individuals in a study. When identifying the racial or ethnic groups of individuals, the *Publication Manual* notes that these terms "change often" (APA, p. 67) and writers "are encouraged to ask their participants about preferred designations and are expected to avoid terms perceived as negative" (APA, p. 68). Moreover, authors should remember that racial and ethnic groups are proper nouns and thus should be capitalized (e.g., Black, White, Hispanic). In reference to gender, authors should strive to minimize the use of pronouns such as *he* and *she*, and avoid the substitution of *he/she*, which is "awkward and distracting" (APA, p. 67). When describing people and their age groups, *boys* and *girls* are used

to reference individuals who are younger than 18. For adults, the terms *men* and *women* should be used instead of *males* and *females*. Finally, authors should note the guidelines for referring to individuals with disabilities, adhering to the principle of putting "people first, not their disability" (APA, p. 75).

Discussion

The major purpose of this article was to provide evidence-based guidelines to help authors from the field of education in general and authors who write about school leadership topics in particular to write with discipline. Using Combs and Onwuegbuzie's (2009) groundbreaking findings, we were able to provide guidelines for adhering to APA style based on the 60 most common APA errors and 14 classes (i.e., themes) of APA errors identified by these editor-researchers. We believe that an efficient way for authors—including graduate students to learn APA style would be to focus initially on these 60 most common APA errors and 14 classes of APA errors. By the same token, we believe that these errors would serve as useful starting points for those who teach APA style. It is not possible—nor is it even advisable—for an instructor to cover the whole *Publication Manual* within a course—even if a significant portion of whole course is devoted to teaching APA style. Thus, focusing on these most common errors provides a much more manageable amount of material for an instructor to cover.

A stark reminder of the importance of authors adhering to APA style can be gleaned from Combs and Onwuegbuzie's (2009) findings that authors who submit manuscripts to *Research in the Schools* that contain (a) nine or more different APA errors are exactly three times more likely—and based on the 95% confidence interval can be as much as nearly seven times more likely—to receive a rejection decision by the editor; and (b) eight or more different APA error themes are more than three-and-a-half times more likely—and based on the 95% confidence

interval can be more than eight times more likely—to receive a rejection decision by the editor. The canonical correlation analyses also helped to identify specific APA errors and error themes that place authors at risk for getting their manuscripts rejected. Although one cannot assume causality from these correlational findings (i.e., it cannot be assumed that an abundance of APA errors *causes* a manuscript to be rejected), it is likely that at the very least, a large number of APA errors is indicative of a general lack of attention to detail that prevails at one or more stages of the research process—an overall lack of research/writing discipline!

The frequency of the 14 APA error themes range from approximately one third (i.e., 32%; bias in language) to nearly three fourths (i.e., 72%; grammar). Thus, the frequencies of all 14 APA error themes are significant. The error themes of grammar and format are the most frequent in manuscripts submitted to *Research in the Schools*. Further, these error themes are the second and third best predictors of whether a manuscript ends up being rejected, respectively. Specifically, authors whose manuscripts contain the error theme of grammar are 2.43 times more likely (95% CI = 1.03, 5.71) to a receive a rejection than are those authors who avoid this class of errors. Also, authors whose manuscripts contain the error theme of format are 3.57 times more likely (95% CI = 1.51, 8.42) to a receive a rejection than are those authors who avoid this class of errors. The theme of grammar appears to encompass elements of clear communication, that of being understood. Conversely, formatting might attend to the audiences' need for order, familiarity, and ease when reading scholarly articles. Attention to formatting might assist authors in writing manuscripts that have appropriate structure, which, in turn, might provide the reviewer or editor with a good first impression, thereby increasing the likelihood of a favorable recommendation/decision, not only because the manuscript is easier to read, but because it might give the reviewer and/or editor the impression that the author is meticulous and trustworthy.

The theme of tables and figures is the 11th most common error theme. Yet, this theme is the best predictor of whether a manuscript was rejected. Indeed, authors whose manuscripts contain the error theme of tables and figures are 4.68 times more likely (95% CI = 1.96, 11.14) to a receive a rejection than are those authors who avoid this class of errors. If the inclusion of tables and/or figures is justified in a manuscript, then they must contain important information. Thus, failure to construct tables and/or figures in a clear, coherent, and consistent manner can affect readability and even accuracy of the manuscript, which, in turn, might make a manuscript less appealing for a reviewer and/or editor. On the flip side, authors who have learned how to construct tables and figures in an optimal manner likely might reflect writers with more experience using APA.

Learning to give credit to appropriate sources is another important discipline for writers to master. Indeed, the error theme of citing multiple authors is one of the five best predictors of whether a manuscript is rejected. When citations are unclear, they prevent readers from locating the sources to conduct further research or to verify the findings that were reported—facets that are needed for a manuscript to be both warranted and transparent. Further, committing error themes pertaining to citing multiple authors and in-text citations can affect not only research integrity, but also the credibility of the researcher (Faunce & Job, 2001; Hernon & Metoyer-Duran, 1992; Jiao, Onwuegbuzie, & Waytowich, 2008; Onwuegbuzie, Waytowich, & Jiao, 2006; Pandit, 1993; Spivey & Wilks, 2004; Sweetland, 1989; Waytowich, Onwuegbuzie, & Jiao, 2006).

Currently, we are replicating the study of Combs and Onwuegbuzie (2009) on manuscripts submitted to the Tier 1 journal for which we serve as editors, namely, *Educational Researcher*. Our initial findings indicate a replication of the 14 error themes. These emerging

results not only provide incremental validity for the findings of Combs and Onwuegbuzie (2009) but suggest that APA errors also are rampant in manuscripts submitted to the most prestigious educational journals such as *Educational Researcher*.

Conclusions

The present article has both highlighted the most frequent APA errors committed by authors and has provided guidelines for good practice. Authors might wish to use Table 1 as a guide when preparing their manuscripts in an effort to avoid making the most prevalent citation errors. If academic writers only have limited time and can only master a few guidelines at a time, the information we have presented might help to focus writers' efforts. Another strategy that we suggest is that authors identify their most frequent errors and then develop a personalized checklist to use when editing their works. In any case, we hope that instructors will find our article useful for breaking the cycle of APA errors that appear to permeate many manuscripts that are submitted to journals.

The numerous findings of Combs and Onwuegbuzie (2009) have important implications for authors from the field of education in general and authors who write about school leadership topics in particular. By paying more attention to APA style, authors will exemplify writing with discipline and serve as models of disciplined communicators. Indeed, it is only by writing with discipline that authors likely will increase their chances not only of getting their manuscripts published in a timely manner, but also getting them published in journals that are considered to have the highest visibility for stakeholders and policymakers and that have the most impact for policy and practice.

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