

A Step-by-Step Guide to Publishing Journal Articles and Strategies for Securing Impactful Publications

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In the last few years, I have been presenting workshops on publishing (among other topics) in many countries across 6 continents. And presenting these workshops in various countries has allowed me to learn the policies and practices of editors of journals representing numerous countries, thereby helping me to broaden the framework for writing publishable research manuscripts that I had developed to accommodate these policies and practices. My current framework for publishing contains 30 steps that are continuous, iterative, interactive, holistic, dynamic, and synergistic. It should be noted that authors can be involved in several steps simultaneously across two or more research projects. Thus, the purpose of this article, which I am dedicating to my late, best friend, Dr. Christine E. Daley, is twofold. First, I will summarize these 30 steps to publishing. Second, I will outline strategies for helping authors secure impactful publications—which are publications that help to advance the field.

Dedication

I dedicate the following article to my best friend, Dr. Christine E. Daley, who unexpectedly died just a few days before I started writing it. Christine was an exceptional writer! I have had the pleasure and fortune of co-writing works with several strong writers during my academic career; however, Christine was by far the best writer that I have ever known. Indeed, even though I have a reputation among colleagues for being a meticulous proof-reader, with absolutely no exaggeration at all, I can honestly declare that during the 30 published works that we co-wrote together over the years, I did not identify a single grammatical error that she ever made! Thus, Christine had an incredible influence on my writing and helped me to improve it considerably. And so it is only fitting that I dedicate an article devoted to publishing to this unique person, whom I loved so dearly.

Setting the Scene

By the fifth year of being an assistant professor, I had been extremely fortunate to have had published numerous journal articles. However, in securing these published works, I had to experience numerous manuscript rejections from editors of various journals.

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As painful as these rejections were, once I began to make cross-reviewer comparisons, I started to see some commonalities in the reasons that my manuscripts were receiving unfavorable appraisals from reviewers and were being rejected by editors. These revelations sparked my interest in the art of publishing scholarly works, and in 2000, I developed a meta-framework—which involved a series of broad steps—for writing publishable research manuscripts that I presented via a workshop to faculty and students at Valdosta State University, where I worked at the time. Because my workshop was very well received, over the years that ensued, I continued to study the art of publishing further and to expand my meta-framework, presenting it whenever I was offered the opportunity. In 2005, with the collaboration of Dr. Kathleen M. T. Collins (University of Arkansas at Fayetteville), while a faculty member at the University of South Florida, I co-expanded this meta-framework as part of an initiative that we developed that we called Project CAREER (Creating an Action Research Enterprise for Educational Research). Before long, Dr. Collins and I were invited to present a professional development and training workshop to doctoral students and faculty from various institutions.

As I began increasingly to author/co-author works on the topic of mixed methods research, I began to receive invitations to present workshops on publishing mixed methods research articles, such as the workshop that I delivered in 2007 to faculty and students at the Texas A&M Summer Institute, College Station, Texas. After joining the faculty at Sam Houston State University (SHSU) in the Fall of 2007, I teamed up with Dr. John R. Slate (SHSU) (one of the contributors of this *Centurion Special*

Issue), and, almost immediately, we began presenting workshops on publishing at various conferences (e.g., American Association of Colleges of Teacher Education, National Council of Professors of Educational Administration, Mid-South Educational Research Association).

In the last few years, I have been presenting workshops on publishing (among other topics) in many countries across six continents. And presenting these workshops in various countries has allowed me to learn the policies and practices of editors of journals representing numerous countries, thereby helping me to broaden my meta-framework to accommodate these policies and practices. My current meta-framework for publishing contains 30 steps that are continuous, iterative, interactive, holistic, dynamic, and synergistic. It should be noted that authors can be involved in several steps simultaneously across two or more research projects. Thus, the purpose of the remainder of this article is twofold. First, I will summarize these 30 steps to publishing. Unfortunately, because of space requirements, I will be unable to go into as much detail as I would have liked. However, I am hoping that I will provide sufficient detail at each step for readers to find it useful. Second, I will outline strategies for helping authors secure impactful publications—which are publications that help to advance the field.

30-Step Guide to Publishing

Step 1: Find and Develop a Topic Area of Interest

The first step is to identify the topic of interest. Over the years, I have always admonished my doctoral students from hastily selecting topics for their dissertations or for selecting topics because it will help them complete it as soon as possible under the mantra, “I just want to get done.” Although doctoral students can derive several benefits (e.g., professional, social, familial) from completing their dissertations in a timely manner, I think it is ill-advised for them to rush through the dissertation process. Indeed, rushing through the dissertation process can unduly affect the quality of a dissertation. And as editor of *Educational Researcher* for 4 years, Co-Editor of *Research in the Schools (RITS)* for the last 13 years, and Guest Editor of several special issues (e.g., *International Journal of Multiple Research Approaches*, *International Journal of Qualitative Methods*), I have rejected numerous manuscripts that clearly originated from low-quality dissertations. Even more importantly, rushing through the dissertation process often means that the student would not have thought sufficiently about her/his dissertation topic, leading to a non-optimal dissertation topic being selected. By an *optimal dissertation topic*, I am referring to a topic that represents the student’s field/discipline, and that is relevant, current, and

potentially has a long shelf life (e.g., at least 6 years or until the person attains tenure as a faculty member). Over the years, I have observed too many brand new faculty members who were not in position either to get works stemming directly from their dissertations published because they had rushed through the dissertation process, which led to them (a) writing a low-quality or even an unpublishable dissertation (i.e., that contained one or more fatal flaws such as a sample size that was too small to justify an inferential statistical test or to reach some form of data saturation), or (b) not maximizing their research and/or writing skills because they were able to enlist the assistance of others to provide substantive help (e.g., analyze their data, write sections of their dissertation). Or, because they did not adequately plan their dissertation research, they were able to secure only one publication from their dissertation, even though, potentially, all dissertations should yield at least four publications (e.g., literature review chapter, methodology chapter, findings for researchers, executive findings for practitioners, a conceptual article, debriefing processes; cf. Frels & Onwuegbuzie, 2016a, 2016b). Additionally, doctoral students should feel passionate about their topic, not only because it will provide them with the necessary motivation to negotiate any obstacles that they meet during the dissertation research process, but also because it would make it easier for them to use their dissertations as a springboard for their ensuing scholarship/research agenda as faculty members or other professionals. Further, it is usually very easy to identify those who conducted quality dissertations from those who did not during the academic job interview process (e.g., during the *job talk*), as well as to distinguish between interview candidates who conducted their dissertations themselves from those who did not (e.g., did not analyze their own data) (cf. Onwuegbuzie & Hwang, 2014).

Thus, it is essential that doctoral students think very carefully before selecting topics for their dissertations. In order to facilitate this selection, I suggest that they engage in conversations with their instructors, dissertation advisors/supervisors, mentors, and other experienced people in the field/discipline to recognize the collective, academic needs (Onwuegbuzie & Frels, 2016). And even if a student intends to continue as a practitioner (e.g., teacher, administrator, counselor, psychologist, program evaluator), I would argue that selection of a topic is still extremely important, not only because a career-relevant dissertation could help propel these students in their respective professions (e.g., become regarded as experts in their topic areas among their professional colleagues), but also because it is not unusual for practitioners to join the academy (e.g., adjunct professor) at a later stage of their careers—

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and securing publications would set their applications apart from other applications.

Not only should students select their topics carefully, but they should also choose their dissertation advisors/supervisors very carefully whenever they are empowered to do so. Consistent with my suggestion here, early career research productivity has been linked to dissertation advisor/supervisor research productivity (Williamson & Cable, 2003).

Selection of a topic is equally as important for beginning faculty members because this topic should propel their careers. If these beginning faculty members had selected their dissertation topics carefully, they should not have to select a new topic—but, rather, they would be able to build on their dissertation topics. However, if this is not the case, and they have to start anew, I encourage them to consult their more experienced colleagues for advice and direction.

Once the author has selected a topic, the next task within this step is to determine whether the selected topic is publishable. Here, I suggest that the authors continue communicating with colleagues, peers, mentors, and the like—especially those whose scholarship are in the same or a similar area. Further, authors should identify and familiarize themselves with articles written on the same topic or a similar topic. Also, they should contact authors who have written on the same topic or a related topic. In addition, authors should contact editors—especially editors of journals where articles on this topic have been published—to gauge the continued importance of their selected topic. If all these indicators suggest that the topic is still relevant for their field/discipline and publishable, then the author could pursue this topic. If not, then he/she should select another topic.

Step 2: Determine the Genre of the Work to be Written

Hopefully, by now, the author has selected a topic that is relevant and publishable. Therefore, the next step is to decide whether the work would be empirically based or non-empirically based. Empirically based works involve works in which authors present original findings from their own empirical research studies. As Dr. Rebecca Frels (former editorial assistant and production editor of *RITS*) and I note elsewhere:

Broadly speaking, empirical research studies represent research wherein data are generated via direct observation or experiment in order to address one or more research questions (i.e., interrogative statements that the researcher attempts to answer using research techniques) and/or to test one or more hypotheses (i.e., proposed explanations of observable phenomenon that can be tested via research). As such, findings from empirical research studies are based on actual evidence, as

opposed to theory, assumptions, or speculations. (Onwuegbuzie & Frels, 2016, p. 4)

In contrast, non-empirical works include conceptual, theoretical, and methodological works.

Step 3: Identify and Articulate the Rationale of the Work to be Written

Whatever genre is selected, authors should develop a strong rationale for their choice. Indeed, I contend that any well-written manuscript can be published if a strong rationale for it is provided! As an example, for fun, I tested my claim that any well-written study with a strong rationale can be published by conducting a series of research studies (i.e., Onwuegbuzie, 1999, 2000b, 2000c) investigating predictors of success among professional sport teams. In particular, in my first study (i.e., Onwuegbuzie, 1999), I examined whether the defense or offense of a team is the better predictor of success among professional football teams, namely, National Football League [NFL] teams. My rationale for conducting this study was as follows:

...However, despite the fact that football generates a multitude of statistical facts, analysts and coaches appear predominantly to utilize descriptive statistics, e.g., averages, totals, percentages, *surprisingly, few inferential statistical analyses are undertaken on football data*. Yet, such analyses provide consumers with information regarding the relationships among variables. As such, inferential statistics can yield very detailed and important information to football analysts and coaches. With respect to football, inferential statistics can be used to identify factors that predict the performance levels of teams.

To date, only a few studies have been conducted on predictors of performance among professional football teams. Specifically, Kornspan et al.(1995) investigated...

Devising algorithms which predict teams' winning percentages based on the point spread (Stern, 1991), home-field advantage (Harvde, 1980; Kornspai, et al., 1995), the differences in scores from previous games (Harvrille, 1980), preseason records (Craig & Hall, 1994), the number of veterans (Craig & Hall, 1994), whether the team reached the playoffs in the previous season (Craig & Hall, 1994), or whether the team experienced a coaching change (Craig & Hall, 1994), are informative. *However, these algorithms have limited utility for football coaches, in particular, because they do not provide information on why or how a team wins a football game. In other words, previous research has not established what factors*

directly associated with skill level, e.g., total number of yards conceded by the defense, best predict a team's winning percentage.

Interestingly, many football coaches, analysts, and supporters have argued constantly that "defense wins championships" (Kornspan et al., 1995, p. 801). *Yet, to date, no formal empirical test of this claim appears to have been undertaken.* Thus, the purpose of the present study was to identify which offensive and defensive factors better predict a team's winning percentage, using data from the 1997 regular football season. It was expected that a knowledge of these factors could help coaches to decide where to focus their attention as well as assist analysts and fans by predicting a team's performance. (pp. 151-154) [emphasis added]

It can be seen from the italicized text that this article contained several statements of the rationale. And, by the way, findings from this study revealed that

the total number of points conceded by the defense in the regular season explained more variance in success (73.5%) than did the number of points scored by the offense (14.7%). When turnover differential (i.e., the difference between the number of Fumbles and interceptions gained by a team's defense and the number of fumbles and interceptions given away by same team's offenses, was included in the model, it explained 43.4% of the variance in success. These and other findings suggest that, outside the 20-yd. zone, the attainments of the defense are more important than are the offensive attainments in predicting the success of NFL teams. (p. 151)

Because the article contained a very strong rationale for the study, although it involved a fun topic, it was published in a reputable scholarly journal, namely, *Perceptual and Motor Skills*.

In my follow-up study (Onwuegbuzie, 2000c), my statement of the rationale was as follows: "To ascertain the consistency of this finding, however, it is imperative that external replications be conducted" (p. 640). And, in case you are interested, a multiple regression model containing five variables combined to explain 93.3% of the total variance in winning percentage for the 1998-1999 NFL season. Interestingly, the first two variables, which explained more than 75% of the variance, were characteristics of the defense, thereby supporting my previous conclusion (i.e., Onwuegbuzie, 1999) that "defensive gains are better predictors of success than are offensive gains" (p. 640).

In the third of the trilogy of sports articles, I analyzed 20 variables pertaining to the 1997-1998 National Basketball Association (NBA) regular season to determine factors that best predicted

success, as measured by winning percentage. The two rationale statements that I used were as follows: (a) "To date, only a few studies have investigated correlates of basketball-related performance" (§ 5); and (b) "Surprisingly, no other study has investigated predictors of success among NBA teams. Even more surprising is the fact that no research appears to have examined what factors directly associated with skill level (e.g., field goal conversion percentage) best predict a team's winning percentage" (§ 9). And for you NBA fans, I documented that field goal conversion percentage was the best predictor of success, explaining 61.4% of the variance in winning percentage—followed by the average three-point conversion percentage of the opposing teams, explaining a further 18.9% of the variance. Amazingly, these two variables combined explained 80.3% of the variance in winning percentage. I concluded that "The finding pertaining to field goal conversion percentage suggest that the attainments of the offense are more important than are the defensive attainments in predicting the success levels of NBA teams" (Abstract, § 1)—a conclusion that was the opposite of the conclusion in my two NFL articles.

Interestingly, although I analyzed these data and wrote the articles for fun, they provoked interest among sporting athletes, professional coaches, and the like. In fact, these articles were cited in a book written by Professor Gordon W. Russell (2001), who contacted me beforehand to ask me for permission to discuss my work in his book.

Prevalence of a clear statement of the rationale in manuscripts.

In a 2005 editorial, Dr. Larry Daniel (former Co-Editor of *RITS*) and I reported that, with respect to empirical research manuscripts, a high proportion of authors (40%) do not make clear the rationale of their studies (Onwuegbuzie & Daniel, 2005). With respect to empirical research studies, we stated the following:

The rationale is the most important aspect of a study because it identifies the gap in the literature. The most common rationale is that few or no researchers have undertaken the study (with a citation if possible). The second most common rationale is that although several/many researchers have conducted the study, few or no researchers have studied the topic using the proposed population/instrument/setting/site/etc. The third most common rationale is that although several/many researchers have undertaken the study, the findings have been mixed. Whatever the rationale of the study, it needs to be presented clearly. (Onwuegbuzie & Daniel, 2005, p. 2)

Most recently, Dr. Cheryl Poth and I, who analyzed the reviews of 45 reviewers of a special issue on mixed methods research, documented that 13.3% of the reviewers criticized the authors for not providing a rationale either for their studies or for their conceptual/theoretical/methodological essays (Onwuegbuzie & Poth, 2015). Thus, in order to make their works publishable, authors need not only to identify the rationale for their chosen genre but also to articulate their rationales clearly.

Step 4: Determine the Outlet

Once the genre of work has been decided upon and the rationale for the choice identified, the next step is to determine the outlet for getting this work published. Authors have an array of outlets from which to choose, including the following: books, monographs, encyclopedias, Internet websites, government documents, popular magazines, trade catalogues, company reports, congressional/parliamentary bills, commentaries/responses, conference proceedings, essays, poems, photographs, software, and advertisements. Of these, in the world of academe, journal articles typically hold the most weight for decisions regarding tenure, promotion, merit pay, and the like. Thus, for the remainder of this section, I will discuss the publishing of journal articles.

Step 5: Determine the Goal of the Article

Whether the manuscript to be written is empirically based or non-empirically based, once the outlet has been selected, a next step is to ascertain the goal of the article. Newman, Ridenour, Newman, and DeMarco (2003) conceptualized a comprehensive set of goals that provide important food for thought. These methodologists identified the following nine types of goals: (a) predict; (b) add to the knowledge base; (c) have a personal, social, institutional, and/or organizational impact; (d) measure change; (e) understand complex phenomena; (f) test new ideas; (g) generate new ideas; (h) inform constituencies; and (g) examine the past. It is important for authors to identify the goal of their works because it helps them to make appropriate methodological, conceptual, and/or theoretical decisions. With respect to empirical research manuscripts, identifying the goal(s) helps authors to determine the research questions, sample size, and sampling scheme of quantitative, qualitative, and mixed research studies. For example, if the author's goal is to have a social, institutional, and/or organizational impact, then, optimally, it suggests utilizing a large and random sample, such that the findings can be generalized from the sample to the population from which the sample was drawn. As another example, if the author's goal is to understand complex phenomena, then this goal lends itself for the author to use methods that are very useful for obtaining insights into the routine and problematic experiences and psychological processes that exist within a specific

setting, location, context, time, event, incident, or activity, and the meaning attached to these experiences and processes of individuals, which, under certain conditions (e.g., data saturation, theoretical saturation, informational redundancy), can achieve *Verstehen* or understanding.

Step 6: Determine the Audience for the Article

Alongside determining the goal of the article, authors should decide on who their audience will be. For instance, is the primary audience students? Teachers? Administrators? Policymakers? Why is it important for authors to determine who their audience will be? Well, it helps authors to determine how to frame their manuscripts, the language that they should use, how much explanation of terminology that they need to include, and so forth.

Step 7: Determine the Type of Generalization Needed

Building on the work of Onwuegbuzie, Slate, Leech, and Collins (2009), Onwuegbuzie and Collins (2014) identified the following six major types of generalizations that authors can make: (a) *external (statistical) generalizations* (i.e., making generalizations, predictions, judgments, or inferences on data yielded from a representative statistical [i.e., optimally large and random] sample to the population from which the sample was selected [i.e., universalistic generalizability]); (b) *internal (statistical) generalizations* (i.e., making generalizations, predictions, judgments, or inferences on data obtained from one or more representative or elite study participants [e.g., key informants, elite members, sub-sample members] to the sample from which the participant[s] was selected [i.e., particularistic generalizability]); (c) *analytic generalizations* (i.e., "the investigator is striving to generalize a particular set of [case study] results to some broader theory"; Yin, 2009, p. 43) and are "applied to wider theory on the basis of how selected cases 'fit' with general constructs"; Curtis, Gesler, Smith, & Washburn, 2000, p. 1002); (d) *case-to-case transfer* (i.e., making generalizations, judgments, or inferences from one case to another [similar] case; Miles & Huberman, 1994); (e) *naturalistic generalization* (i.e., each reader makes generalizations entirely, or at least in part, from her/his personal or vicarious experiences; Stake & Trumbull, 1982); and (f) *moderatum generalization* (i.e., "generalizations that resemble the modest, pragmatic generalizations drawn from personal experience which, by bringing a semblance of order and consistency to social interaction, make everyday life possible"; Payne & Williams, 2005, p. 296).

It is important for authors to determine the type of generalizations that they intend to make because it helps to determine the sample size, sampling scheme, and sampling design. For instance, if the goal is to make an external statistical generalization, then, optimally, it suggests a large and random sample. In contrast, if the goal is to

make analytic generalizations or case-to-case transfer, then information-rich cases are needed.

Step 8: Decide Whether Collaboration is Needed/Feasible

Whether or not to collaborate with colleagues is a very important decision. Interestingly, based on every article published over a 8-year period (i.e., 2007-2014) in two leading qualitative research journals (i.e., *The Qualitative Report* [TQR], *International Journal of Qualitative Methods*[IJQM]), two leading quantitative research journals (i.e., *Journal of Applied Quantitative Methods* [JAQM], *Journal of Educational and Behavioral Statistics* [JEBS]), and the only two mixed methods research journals in existence (*Journal of Mixed Methods Research* [JMMR], *International Journal of Multiple Research Approaches* [IJMRA]), my doctoral students and I (Onwuegbuzie et al., 2015) documented that the collaboration rate (i.e., percentage of articles involving two or more authors) for the qualitative research journals were 56.5% (TQR) and 60.1% (IJQM), for the quantitative research journals were 66.1% (JAQM) and 71.2% (JEBS), and for the two mixed methods research journals were 66.7% (IJMRA) and 71.2% (JMMR). Consistent with these percentages, in another study, I determined that 65.8% of all manuscripts submitted over a 3-year period to *RITS*—a journal that publishes quantitative, qualitative, and mixed methods research articles—involved collaboration (Onwuegbuzie, 2016a). Thus, across all methodology genres, the majority of articles involve the collaboration of two or more authors. Importantly, I observed that manuscripts submitted to *RITS* for review that contain multiple authors are statistically significantly more likely to be accepted for publication than are manuscripts that contain single authors. Moreover, these multiple-authored manuscripts are 1.41 times (95% confidence interval = 1.05, 1.90) less likely to be rejected than are single-authored manuscripts (Onwuegbuzie, 2016a). The findings from this study, coupled with the findings from the qualitative phase of the previous study (i.e., Onwuegbuzie et al., 2015)—wherein the prolific scholars interviewed overwhelmingly tended to privilege multiple-authored articles—lead me to recommend that beginning faculty members seriously consider collaborating with one or more colleagues at least initially. I recognize that at some institutions, multiple-authored articles with multiple authors are given (much) less weight—or even no weight—than are single-authored articles. Even when this situation occurs, I still suggest that, unless the beginning faculty member has obtained publishing experience as a graduate student, he/she initially collaborates with colleagues—especially with those who have publishing experience—at least until such

time as the beginning faculty member gains experience and confidence in publishing. Even if these ensuing articles do not count much or even at all at their institutions, I am confident that any time towards institutional recognition (e.g., tenure, promotion) lost during this initial collaboration process will be more than made up for by the authors becoming totally self-reliant much earlier in their careers as a result of the mentorship received during this collaboration process.

If an author decides to collaborate with one or more co-authors, he/she should meet as soon as possible either face-to-face or virtually, synchronously or asynchronously, to discuss the work. A vital part of this meeting is to determine or to confirm the authorship order. According to the author(s) of APA (2010):

Authors are responsible for determining authorship and for specifying the order in which two or more authors' names appear in the byline. The general rule is that the name of the principal contributor should appear first, with subsequent names in order of decreasing contribution, but this convention can vary from field to field. If authors played equal roles in the research and publication of their study, they may wish to note this in the author note (see section 2.03 for more information on author notes).

Principal authorship and the order of authorship credit should accurately reflect the relative contributions of persons involved (APA Ethics Code Standard 8.12b, Publication Credit). Relative status (i.e., department chair, junior faculty member, student) should not determine the order of authorship. Because doctoral work is expected to represent an independent and original contribution devised by students, except under rare circumstances, students should be listed as the principal author of any multiauthored papers substantially based on their dissertation (APA Ethics Code Standard 8.12c, Publication Credit). Unusual exceptions to doctoral student first authorship might occur when the doctoral dissertation is published as part of a collection of studies involving other researchers (Fisher, 2003). Whether students merit principal authorship on master's-level or other pre doctoral research will depend on their specific contributions to the research. When master's-level students make the primary contributions to a study, they should be listed as the first author. When students are just beginning to acquire skills necessary to make a primary scientific contribution, they may conduct master's theses that involve the opportunity to learn these skills through collaboration on a

faculty-originated project. In such cases, authorship should be determined by the relative contributions of student and faculty member to the project (Fisher, 2003). (p. 19)

It is vital to discuss authorship at the onset to avoid any false expectations being held by one or more of the co-authors, which could lead to undue tensions among the authors. Also, I suggest that once the authorship has been agreed, this agreement should be committed in writing via a contract that details both the authorship and agreed upon division of labor.

Step 9: Explore Belief Systems

As contended elsewhere, it is essential for authors to be aware of their worldviews. In particular, the world views that are most pertinent to scholarship are *research philosophical beliefs* (i.e., notions that include three axiomatic components [i.e., ontological, epistemological, and methodological foundations], and seven issues [i.e., nature of knowledge, knowledge accumulation, goodness or quality criteria, values, ethics, inquirer posture, and training]), *discipline-specific beliefs* (i.e., ideas that drive how the author thinks about the discipline or field, what the author considers to be most important in the discipline/field, and how the author arrived at this knowledge), and *topic-specific beliefs* (i.e., ideas that are focused in one aspect within the discipline/field and that are based on how the author thinks, what the author thinks, and how the author acquired this understanding) (cf. Onwuegbuzie & Frels, 2016). It is important for authors to be aware of their research philosophical beliefs because it helps them at all stages of the research process, namely, the research conceptualization, research planning, research implementation, and research utilization stages. In particular, awareness of research philosophical beliefs helps authors to be aware of all assumptions underlying their research studies (e.g., analytical assumptions). Also, it provides them with a lens for their data analyses—for example, a constructivist in any of its forms (e.g., radical constructivist, social constructivist, social constructionist) is less likely to utilize inferential statistical techniques than is a postpositivist.

Interestingly, Collins, Onwuegbuzie, and R. B. Johnson (2012) introduced the concept of philosophical clarity, which they defined as a quality criterion that represents the degree to which “the researcher is aware of and articulates her/his philosophical proclivities in terms of philosophical assumptions and stances in relation to all components, claims, actions, and uses in a mixed research study” (p. 855). According to Collins et al. (2012), philosophical clarity motivates researchers’ choice of paradigm, which, in turn, influences the decisions and actions that they make. When a researcher lacks philosophical clarity, then the quality of the study likely will be adversely affected

(Collins et al., 2012). Similarly, it is important for authors to be aware of their discipline-specific beliefs because it helps them at all stages of the research process to be aware of their own biases associated with their discipline/field, as well as helping them frame interpretations of their findings. Finally, it is important for authors to be aware of their topic-specific beliefs because it helps them to be aware of their own biases associated with their chosen topic. For example, my own dominant research philosophy that I co-developed with Dr. Rebecca Frels is what we call critical dialectical pluralism (Onwuegbuzie & Frels, 2013), which operates under the assumption that, at the macro level, social injustices are rooted in every community. According to our research philosophy, rather than the researcher presenting the findings (e.g., conferences, journal articles, books, technical reports), the researcher assumes a research-facilitator role that empowers the participant(s) to adopt the role of participant-researcher(s), who, in turn, either present/perform the findings themselves or co/present/co-perform the findings with the research-facilitator(s). Thus, our research philosophy drives every decision that I make during research studies.

Step 10: Determine the Objective of the Study

The next step is for authors to determine their research objective(s). According to R. B. Johnson and Christensen (2013), the objective(s) of qualitative, quantitative, and mixed research studies include the following: (a) *exploration* (i.e., using inductive methods to understand better an idea, issue, and the like, which then leads to hunches, hypotheses, inferences, or generalizations); (b) *description* (i.e., identifying and describing the antecedents, correlates, and/or the nature of the phenomena); (c) *explanation* (i.e., developing or expanding a theory in order to understand better the phenomena); (d) *prediction* (i.e., helping the researcher forecast future events through the use of prior knowledge); and (e) *influence* (i.e., manipulation of a variable or construct for the purpose of producing an outcome). It should be noted that any research study might involve two or more objectives, and this is often the case in mixed research studies wherein the quantitative and qualitative research phases address different objectives. It is important for researchers to ascertain their research objective(s) because this realization helps to determine research question(s), research approach (i.e., qualitative, quantitative, mixed research), sampling design (e.g., sample size, sampling scheme), research design, data collection techniques, and data analysis techniques. For example, if a researcher’s goal is to explore, then it is likely that this researcher would use a qualitative research approach (e.g., some form of grounded theory, some form of phenomenological research) and/or a quantitative research approach that involves

the use of exploratory analytical techniques such as exploratory factor analysis, cluster analysis, or multidimensional scaling. In mixed research studies, knowledge of research objective(s) helps the researcher to decide on the emphasis between the qualitative phase(s) and the quantitative phase(s).

Step 11: Determine the Research Purpose(s)/Research Question(s)

Every manuscript should have some type of purpose statement, regardless of whether it is empirical, methodological, theoretical, or conceptual in nature. For empirical research articles, the purpose statement—which, typically, should appear immediately after the statement of the rationale—should specify the problem that the researcher investigated. For other types of articles (i.e., non-empirical research articles), the purpose statement should serve as an advanced organizer or signpost for the reader that previews the scope of the article and the sections that follow.

Although purpose statements are essential for all genres of works, research questions are only a consideration in empirical research articles. Research questions are interrogative statements that represent an extension of the purpose statement in as much as they specify exactly the question(s) that the researcher(s) attempted to address (R. B. Johnson & Christensen, 2013). I contend that manuscripts usually are clearer when the research question(s) is specified because research questions illuminate the specific details of the study. Moreover, as concluded by Dr. Isadore Newman (one of the contributors of this Centurion Special Issue) and his co-author Dr. John Hitchcock, “readers [should] let their research questions dictate methodological approach, in the context of the purpose, rather than building questions around techniques that tend to align with different subparadigms” (Newman & Hitchcock, 2011, p. 381).

Step 12: Determine the Genre of the Work

Research questions play a central place in all empirical research studies because once the research question(s) has been developed, then the research approach (i.e., qualitative research, quantitative research, mixed research) can be determined. Unfortunately, for a variety of reasons (e.g., research philosophy, lack of training in alternative research approaches), too many researchers force their research questions to fit their selected research approach instead of vice versa, thereby leading to the addressing of non-optimal research questions. Disturbingly, virtually all research methodology textbook authors give the impression that the researchers are the experts in developing research questions. I would strongly disagree with this assertion. Rather, unless that researcher has an emic viewpoint, typically, it is the population/community from whom the participants are drawn that is in the best position to ensure that the most appropriate

research questions are posed—consistent with the tenets of critical dialectical pluralism.

In mixed research studies, in addition to providing the purpose of study and research question(s), authors should delineate the rationale and purpose for mixing quantitative and qualitative approaches. To this end, Collins, Onwuegbuzie, and Sutton (2006) identified four rationale types for mixing quantitative and qualitative data and 65 purposes for mixing quantitative and qualitative data. In particular, the four rationales for mixing are participant enrichment (i.e., mixing of quantitative and qualitative techniques for the rationale of optimizing the sample), instrument fidelity (i.e., maximizing the appropriateness and/or utility of the quantitative and qualitative instruments used in the study), treatment integrity (i.e., assessing the fidelity of interventions, treatments, or programs), and significance enhancement (i.e., mixing quantitative and qualitative techniques for the rationale of enhancing researchers’ interpretations of data). The most common purposes were the five conceptualized by Greene, Caracelli, and Graham (1989), as follows: *triangulation* (i.e., comparing findings from the qualitative data with the quantitative results), *complementarity* (i.e., seeking elaboration, illustration, enhancement, and clarification of the findings from one analytical strand [e.g., qualitative] with results from the other analytical strand [e.g., quantitative]), *development* (i.e., using the results from one analytical strand to help inform the other analytical strand), *initiation* (i.e., discovering paradoxes and contradictions that emerge when findings from the two analytical strands are compared that might lead to a re-framing of the research question), and *expansion* (i.e., expanding breadth and range of a study by using multiple analytical strands for different study phases).

It is important to determine the rationale and purpose for mixing qualitative and quantitative research approaches because it helps researchers to determine the type of mixed research design that should be used. For instance, if the purpose is to triangulate the qualitative and quantitative findings, then some form of concurrent mixed research design should be used wherein the qualitative and quantitative phases are independent of each other. Supporting my contention that mixed researchers should specify the rationale and purpose for mixing, Onwuegbuzie and Poth (2015) documented that omission of these two elements is a relatively common criticism made by reviewers of mixed research manuscripts.

Step 13: Select the Underlying Sampling Scheme

Step 12 marks the end of the research conceptualization phase. After the research conceptualization stage comes the research planning phase. Specifically, once the researcher has (co-

)constructed the research questions and determined the research approach, an important next step is to make decisions about the sampling design. By sampling design, I mean type of sampling schemes (i.e., purposive vs. random), the specific sampling scheme (e.g., stratified random sampling, cluster sampling, convenience sampling, criterion sampling; cf. Onwuegbuzie & Collins, 2007; Teddlie & Yu, 2007), sample size, subsample size(s), group size(s) per approach, and number of observational units per participant. However, before making decisions about the sampling design, researchers should ascertain the type of generalization(s) of interest. Contrary to the views of some methodologists—especially some qualitative research methodologists—all qualitative, quantitative, and mixed research studies involve some type of generalization. Even in biographical research, the final report represents a *sample* of the person's (whole or part) life obtained via some (qualitative) data collection technique (e.g., interview[s], journals). Thus, the assumption of the biographical researcher is that the information documented *generalizes* to the person's (whole or part) life space. In support of my contention, surely it matters whether the biographical researcher's interview of a participant lasts for 1 minute versus 1 hour? This is a generalization issue!

In fact, as noted under Step 7, there are six types of generalization, namely, external statistical generalization, internal statistical generalization, analytic generalization, case-to-case transfer, naturalistic generalization, and moderatum generalization. Therefore, before making sampling decisions, researchers should decide the type(s) of generalization of interest. If not, they run the risk of preventing from occurring what Dr. Collins and her colleagues (e.g., Collins, 2010; Collins & Onwuegbuzie, 2013; Collins, Onwuegbuzie, & Jiao, 2006, 2007; Collins et al., 2012) referred to as *interpretive consistency*, which denotes the degree of consistency between the sampling design and the inferences made from the findings. Alternatively stated, interpretive consistency means that the type of generalization made is justifiable, given the sampling design.

In order to help researchers make interpretive consistent generalizations, I recommend that researchers consider using Onwuegbuzie, Collins, and Frels's (2013) re-conceptualization of Bronfenbrenner's (1979) ecological systems theory. Here, my co-authors and I mapped Bronfenbrenner's (1979) ecological systems model onto the qualitative, quantitative, and mixed research process under our assumption that virtually all research studies representing the social, behavioral, and health fields involve research conducted at one or more of Bronfenbrenner's (1979) four levels. We coined these four re-conceptualized levels as *micro-research studies*

(i.e., Level 1: research wherein one or more persons or groups are studied within his/her/their immediate environment[s]), *meso-research studies* (i.e., Level 2: research wherein one or more persons or groups are studied within other systems in which the he/she/they spends time), *exo-research studies* (i.e., Level 3: research wherein one or more persons or groups are studied within systems by which the he/she/they might be influenced but of which he/she/they is not directly a member), and *macro-research studies* (i.e., Level 4: research wherein one or more persons or groups are studied within the larger cultural world or society surrounding him/her/them). Thus, for example, if a researcher conducted a micro-research study (i.e., Level 1), then generalizations should not be made to people, groups, or other entities that represent any of the three higher levels. Unfortunately, such overgeneralizing is commonplace in research. As evidence of my claim here, I refer you to Onwuegbuzie and Leech (2010), who conducted a mixed research study to examine the generalization practices in all empirical qualitative research articles published in *The Qualitative Report (TQR)*, a reputable qualitative journal, between its inception in 1990 and 2006. Onwuegbuzie and Leech observed that of the 125 empirical research studies that were published in *TQR* during this period, 29.6% of them evidenced interpretive inconsistency made by the author(s) by containing generalizations beyond the underlying sample that were selected. And making overgeneralizations represents an important determinant of reviewer rejection (Gilliland & Cortina, 1997).

Step 14: Select the Underlying Research Design

Alongside making decisions regarding every element of the sampling design, researchers should select an appropriate research design for monomethod research studies (i.e., qualitative research studies and quantitative research studies) and mixed methods research studies. By now, the researcher would have selected the research approach, optimally based on the underlying research question(s). At this step, the corresponding research design is selected. Excitingly, quantitative, qualitative, and mixed researchers have at their disposal numerous research designs from which to choose. Although not exhaustive, in an appendix in my literature review book with Dr. Frels, we present and describe 31 of the major quantitative designs. Specifically, we discuss three non-experimental research designs, 13 pre-experimental research designs, 10 quasi-experimental research designs, and five experimental research designs (cf. Appendix A.1 from Onwuegbuzie & Frels, 2016). In work that I am currently undertaking with Drs. Burke Johnson and Lloyd Waller, we have identified more than 50 qualitative research designs. Ten of the most common designs are presented in Appendix A.2 of Onwuegbuzie and Frels (2016).

Finally, in Appendix A.3 of our literature review book, we present 18 of the major mixed research designs. However, I refer readers to an exceptional discussion of mixed research designs authored by Dr. Bonnie Nastasi (one of the contributors of this Centurion Special Issue) and her colleagues (cf. Nastasi, Hitchcock, & Brown, 2010). Specifically, this chapter provides an inclusive meta-framework that can help researchers identify a mixed research design typology that suits their needs. Further, they extend these typologies by presenting a synergistic, partnership-based fully integrated framework that is based on prior work. Also, they provide consideration of precursors to research and features of basic and complex typologies. A must read for mixed researchers!

Step 15: Determine Data to be Collected

Once the sampling design and research design have been determined, an important next step is to determine the data to be collected. Both quantitative and qualitative data abound. For instance, quantitative data can be extracted via the use of measurement tools such as standardized tests, Likert-format scales, rating scales, self-reports, personality inventories, symptom checklists, and the like, which typically entail the assignment of numbers in order to quantify certain attributes for the objective of exploring, describing, explaining, predicting, or influencing phenomena. Contrastingly, qualitative data can be extracted via one of the following sources: *documents* (i.e., data collected in the form of text that is represented either in printed or digital form), *talk* (i.e., data extracted directly from the voices of those studied using data collection techniques such as individual interviews, paired depth interviews, and focus groups), *observations* (i.e., data collected by systematically watching or perceiving one or more events, interactions, or actions in order to address or to inform one or more research questions), *images* (i.e., data extracted via still [e.g., photographs, drawings, paintings] or moving [e.g., videos] visual representations that are observed or perceived), *spatial* (i.e., data collected that are characterized by their geographic, geometric, or topological attributes), or *nonverbal communication* (e.g., proxemics, kinesics, chronemics, haptics, paralinguistic, oculosics, olfaction, gustation).

For mixed researchers, Teddlie and Tashakkori (2009) presented a comprehensive typology of 36 mixed data collection combinations, comprising 30 between-strategies mixed data collection combinations (e.g., quantitative observations with qualitative-based focus group) and six within-strategies mixed data collection combinations (e.g., quantitative interview and qualitative interview). Further, Drs. Hannah Gerber, Sandra Abrams, and I have introduced what we call *multidata*, which refer to multimodal data sources

that generate various types of data that do not represent either quantitative data or quantitative data but, rather, represent *both* quantitative data and quantitative data simultaneously (Onwuegbuzie, Gerber, & Abrams, in press). And these multidata are appropriate “for investigating and understanding meaning making within and across online spaces that stems from situated communication, which itself is rooted in naturalistic actions of people being studied” (p. 33).

Step 16: Examine Possible Sources of Help for Project

Once researchers have made decisions about the data to be collected, their research planning phase has been completed. At this point, the researcher is in a position to determine the assistance that he/she needs. For example, in quantitative research studies, so much original data—as opposed to archival (i.e., secondary) data—might need to be collected by the researcher that it is challenging for him/her to enter all these data into the computer for statistical analyses within the given timeframe. Similarly, a qualitative researcher might have planned to collect an abundance of data from numerous interviews that make it overwhelming to transcribe. Simply put, based on the scope of the study, the work load of researchers can be extremely overwhelming during the data collection and/or data analysis stages. Alternatively, the researcher might lack the expertise needed to collect or to analyze a specific type of data. In any of these cases, the researcher would benefit from assistance. Now, if the researcher has one or more co-researchers, then he/she could share the load with them. However, if the researcher is conducting a research study alone, then he/she would have to consider asking someone else for help. Unfortunately, this help can be expensive. Thus, whenever possible, researchers should take advantage of assistants provided by their institutions such as undergraduate assistants and graduate assistants. Indeed, I recommend that when offered a new position, during the negotiation process, faculty members should ask for an undergraduate/graduate assistant as part of their terms of employment (cf. Onwuegbuzie, 2016c, 2016d). It should be noted that if the assistant does substantively more than enter data, he/she should be considered as a co-researcher and co-author. As stipulated by the authors of the American Psychological Association (APA) Publication Manual (APA, 2010),

Authorship is reserved for persons who make a substantial contribution to and who accept responsibility for a published work.

Definition of authorship. Individuals should only take authorship credit for work they have actually performed or to which they have substantially contributed (APA Ethics Code Standard 8.12a, Publication Credit).

Authorship encompasses, therefore, not only those who do the actual writing but also those who have made substantial scientific contributions to a study. Substantial professional contributions may include formulating the problem or hypothesis, structuring the experimental design, organizing and conducting the statistical analysis, interpreting the results, or writing a major portion of the paper. Those who so contribute are listed in the byline. Lesser contributions, which do not constitute authorship, may be acknowledged in a note (see section 2.03). These contributions may include such supportive functions as designing or building the apparatus, suggesting or advising about the statistical analysis, collecting or entering the data, modifying or structuring a computer program, and recruiting participants or obtaining animals. Conducting routine observations or diagnoses for use in studies does not constitute authorship. Combinations of these (and other) tasks, however, may justify authorship. (p. 18)

Step 17: Determine Possible Venues for Oral Presentation of Paper

During my days as a naïve assistant professor, when I met colleagues from other institutions for the first time at conferences and we agreed to collaborate on a topic, we would exchange contact information and then promise to begin collaborating when we returned to our respective institutions. However, when we both returned, we immediately became busy with our day-to-day professional activities, and then put off our collaboration. Days turned into weeks, which turned into months. Then, when we met each other again at the same conference the following year, no collaboration had taken place, leading to us making a renewed promise to collaborate upon our return from the conference. Unfortunately, again, upon our return, our professional plate became full immediately and, thus, we continued to postpone our collaboration. This cycle continued because we had no accountability. It was then that I realized that one way of making us accountable is by turning our idea into a conference proposal as soon as possible after we returned—which was very manageable because these proposals involved anything from as little as 200 words to a few pages or 2,000 words—and then finding a conference to which to submit our proposal. Then, when our proposal was accepted by the conference committee/chair, we had no choice but to complete our empirical/methodological/conceptual/theoretical work by the time of the conference.

Therefore, since this time, soon after I or a (potential) co-researcher conceptualize a topic (i.e., Step 1), we would decide on a venue to present the ensuing paper, co-write the conference proposal,

and then submit it. I recommend that researchers—especially beginning researchers—adopt this strategy as a means of building in accountability. The good news is that there is an abundance of conferences from which to choose that take place all over the world. In fact, my colleagues Dr. Susan Skidmore and John Slate, and I, estimated a lower bound of approximately 1,000 education and education-related conferences with approximately 300 presentations per conference, yielding at least 300,000 presentations per year in education and education-related conferences (Skidmore, Slate, & Onwuegbuzie, 2010)! This is not to mention the thousands of conferences that represent other social and behavioral science fields.

Another benefit of submitting a conference proposal as soon as possible after we conceptualize an idea is that presenting the resultant paper at a conference allows us to receive feedback from audience members before we finalize our manuscript and submit it to an outlet for review for possible publication. These conferences also allow researchers/authors from different institutions to meet and to “hang out” both professionally and socially during the conference. Going to conferences also allows us to travel, which often can be energizing and a welcome distraction from the day-to-day work routine!

Step 18: Choose Two or More Outlets for Publication of Paper

One lesson that I learned quickly as an emergent author was that, when writing manuscripts to submit to a journal editor for review for possible publication, it is always better to select the journal *before* the manuscript is written and not *afterwards*. In particular, selecting the journal beforehand, allows me to write the manuscript for the select journal by following the rules (e.g., style guide stipulations), regulations (e.g., copyright laws), and guidelines (e.g., scope of the journal) set by the journal editor(s) and/or journal publisher, as well by ensuring that the manuscript is appropriate (e.g., terminology used, level of detail provided) for the audience who subscribe to that journal and that it is consistent with the literary trends stemming from the bulk of articles published in that journal. In fact, whenever I have not identified a journal to submit my manuscript until after I had completed writing it, I have always regretted my delay, at least to some degree, because I almost always violated one of the journal editor’s stipulations. In particular, as someone who loves to write—as can be seen from the length of this article—typically, when I select the journal afterwards, my manuscript exceeds the maximum page/word count, and then I have to spend time reducing the manuscript. And authors who have had substantially to shorten a manuscript that they had written probably will appreciate how difficult it can be to delete paragraphs, sentences, and even words that have taken a long time to create.

It can be a psychologically painful process! In fact, I would argue that, often, it is easier to *add* words than to *delete* them. Indeed, not only have I had to shorten my manuscript on many of these occasions when I have delayed my journal selection, but I have also had to focus it more for the audience of the journal. Simply put, delaying journal selection typically takes me more time to finalize my manuscript before submission than is the case if I select the journal before I start writing.

However, my advice to authors is not just to write for a particular journal that appears to be appropriate for the underlying topic and genre but to write for *at least two* potential journals. In following this advice, I would argue that if you receive a rejection from the editor of your first-choice journal, then after addressing any major criticisms and editorial suggestions provided by the action editor and reviewers, you can send the manuscript to your second-choice journal without any further delay. On the other hand, if the manuscript is only written for one journal, then lack of prior selection of an alternative journal might encourage procrastination and, before you know it, weeks, and maybe even months, might pass before you submit your manuscript to a second journal, even though your manuscript has much potential. I have known some scholars who have let even more than 1 year elapse before they submitted their manuscript after an initial rejection. I have been guilty of doing this in my earlier career, until I realized that such a delay often leads to my co-authors and I having to update our manuscript in some way (e.g., update the literature review). Even more disturbingly, I have known some scholars who *never* ended up submitting their manuscript to a second journal. What a waste of the time and resources that it took to conceptualize and to write the manuscript!

In selecting two or more potential journals, the challenge is to select journals that are sufficiently similar in scope and audience that make it possible for the ensuing manuscript to fit all of them adequately. The way to do this is to familiarize yourself with the characteristics of each journal of interest. One way of obtaining this knowledge is by using resources such as those provided by Cabell's International. According to its website (<https://ssl2.cabells.com/about-us>),

Cabell's is a resource that specializes in connecting researchers, publishers, librarians, and academics to the journal titles they need. Founded in 1978 by Dr. David W. E. Cabell. Dr. "Dave" Cabell, as a young professor of Management, sought an easier way for tenure committees, professors, researchers and doctoral students to find detailed information for the purpose of evaluating and selecting academic journals.

The Cabell's journal directory assists authors in their publication journey by providing an interactive, searchable database which covers 18 distinct academic disciplines from more than ten thousand international scholarly journals.

Our goal at Cabell's is to facilitate scholarly communication by offering an independent and comprehensive platform, to help researchers evaluate and select the most appropriate outlets for their work. All content is rigorously reviewed against our journal selection policy in order to provide credible and thorough:

- Bibliographic information and journal contact information
- Manuscript submission criteria and review process guidelines
- Journal quality metrics and levels of impact/influence
- Powerful contextual and analysis tools
- Author publication experiences

In addition to the journals directory, other products such as the Cabell's Classification Index[®], Difficulty of Acceptance[®], and Institutional Publishing Activity[®] ratings are powerful tools designed to help researchers search, filter and compare journals when making decisions about publication.

Through our continued partnerships with major academic publishers, journal editors, scholarly societies, accreditation agencies, and other independent databases including Thomson Reuters's Journal Citation Reports[®], Cabell's provides accurate, up-to-date details about academic journals to more than 750 universities world-wide.

In an effort to aid communication and engagement within the scholarly community, Cabell's also allows researchers to rank journals and share their own submission and publication experiences to gain valuable insight from their peers.

As an objective and expanding database of journal information, Cabell's continues to serve the needs of the scholarly community, offering essential resources for all academic authors throughout their career. (¶ 1-7)

Because of the rigor in obtaining information about journals, Cabell's International represents one of the best resources to aid in authors' selection of appropriate journals. However, they are several other resources. For example, if an author is interested in qualitative research journals, then a useful resource is as follows:

<http://www.slu.edu/organizations/qrc/QRjournals.html>

A STEP-BY-STEP GUIDE TO PUBLISHING JOURNAL ARTICLES

As another example, Questia's library of academic journals contains hundreds of thousands of full-text journal articles from some of the world's leading publishers. A useful website associated with Questia is as follows:

<https://www.questia.com/library/academic-journal-articles?gclid=CInMt5qd2s8CFSMW0wodHioMYw>

When deciding on potential journals, I suggest that authors select journals for which the same style guide is used (e.g., APA Publication Manual). Otherwise, if the manuscript is rejected by the editor of the first-choice journal, then the author would have to convert the rejected manuscript to another style. Therefore, if the most common style guide used in the author's field is APA, then, I suggest that he/she selects from among APA journals. In my early career, I used to mix and to match journals with respect to style guide until I realized how time-consuming it was to convert a manuscript from one style to another style (e.g., APA, The Chicago Manual of Style, Modern Language Association's MLA Handbook).

In selecting potential journals, authors should avoid what are known as *predator open access journals*, wherein the publishers charge publication fees to authors but do not provide a credible review process. Unethical practices associated with predator open access journals include accepting articles quickly (i.e., within a few weeks) with little or no peer review or quality control, notifying authors of article fees only after manuscripts are accepted for publication, publishing fake articles, listing scholars as members of editorial boards without their permission, appointing fake scholars to editorial boards, making misleading claims about the publisher (e.g., name, location), using International Standard Serial Numbers (ISSNs) improperly, and citing fake or non-existent impact factors or acceptance rates (cf. Beall, 2012; Butler, 2013; Stratford, 2012). Jeffrey Beall, an academic librarian and researcher, who coined the term *predator publishing*, developed criteria for identifying predatory publications and, in his publication called Beall's List (cf. <https://scholarlyoa.com/2015/01/02/bealls-list-of-predatory-publishers-2015/>), which he regularly updates, he lists publishers and independent journals that meet those criteria (Butler, 2013; Elliott, 2012).

Disturbingly, John Bohannon, a staff writer for the journal *Science* and other popular science publications, investigated the peer review process among fee-charging open access journals. Specifically, between January and August 2013, Bohannon (2013) submitted fake scientific manuscripts to 304 journals owned by fee-charging open access publishers. According to Bohannon, the manuscript on the purported effect of a lichen constituent was written deliberately to contain such fatal and obvious scientific flaws that they should

have been rejected categorically by all the editors and peer reviewers. However, approximately 60% of the journal editors accepted them. Bohannon's (2013) study was criticized for not being peer-reviewed itself. Notwithstanding, the findings provide a cautionary tale for authors about the prevalence and danger of predator open access journals.

Most importantly, in selecting the two or more potential journals, authors must be cognizant of what counts in their academic unit, especially if they are faculty members of institutions of higher learning who are vying for tenure, promotion, merit pay, or the like. To this end, two of the most important attributes of a journal are acceptance rate and impact factor. Although the exact method of calculation varies from one journal to the next, the acceptance rate represents the number of manuscripts accepted for publication relative to the total number of manuscripts submitted in one year. In contrast, the impact factor is an indicator used to assess the relative significance or importance of a scholarly journal such that journals with higher impact factors are considered to be more important than are those with lower impact factors. For any year of interest, the impact factor of a journal is the average number of citations received per article published in that journal during the two preceding years. Consequently, for example, if a journal has an impact factor of 2 in 2015, it means that articles published in this journal in 2013 and 2014, on average, each received two citations in 2015. Journals within a discipline or a field can be ranked by the size of their impact factor. In addition, impact factors are used to assess the quality of a scholar's works. Once two or more appropriate journals have been selected, in most instances, the author should select as her/his first choice the journal with the lowest acceptance rate and highest impact factor. In addition, once selection of the potential journals has been finalized, I suggest that authors contact faculty members who have published in the area in general and in these journals in particular (if possible) to ask their advice regarding their choice of journals, and then make adjustments if needed.

Step 19: Consider Funding Sources for Project

Although many—if not most—conceptual, theoretical, and methodological works can be produced with minimal costs, this is often not the case with empirical works. Indeed, various stages of the empirical research process may be associated with different costs, with the *data collection* (e.g., quantitative: cost of administering surveys or entering quantitative data on the computer; qualitative: cost of conducting a series of focus groups or transcribing qualitative [interview] data) and *data analysis* (quantitative: cost of [specialized] quantitative software or data analyst; qualitative: cost of computer-assisted qualitative data analysis software or peer reviewers for triangulation)

typically being the most expensive phases of the quantitative, qualitative, and mixed research process. And for doctoral students and assistant professors whose income typically is relatively lower than for their more experienced counterparts (e.g., professors), the cost of conducting a research study can be insurmountable.

Fortunately, there are avenues for researchers to fund, or at least part-fund, their research studies. At the doctoral level, some institutions provide research funding opportunities to (part) fund theses and/or dissertations. Therefore, I suggest that if you are a doctoral student, you contact your advisor/supervisor and mentor(s) and ask them if they know of any internal funding opportunities. Alternatively, a doctoral student may ask to collaborate with a professor who is able to secure grant funds for her/his research/dissertation study. With regard to external funding opportunities for doctoral students, many opportunities exist. For example, the American Educational Research Association (AERA) has an annual call for proposals for dissertation grants (<http://www.aera.net/Professional-Opportunities-Funding/AERA-Funding-Opportunities/Grants-Program/Dissertation-Grants>). According to its website,

With support from the National Science Foundation (NSF), the AERA Grants Program announces its Dissertation Grants competition. The program seeks to stimulate research on U.S. education issues using data from the large- scale, national and international data sets supported by the National Center for Education Statistics (NCES), NSF, and other federal agencies, and to increase the number of education researchers using these data sets. The program supports research projects that are quantitative in nature, include the analysis of existing data from NCES, NSF or other federal agencies, and have U.S. education policy relevance. (¶ 1)

AERA also offers research grants for doctoral students, as well as post-doctoral researchers and faculty members (<http://www.aera.net/Professional-Opportunities-Funding/AERA-Funding-Opportunities/Grants-Program/Research-Grants>), as follows:

AERA invites education--related research proposals using NCES, NSF, and other federal databases. Research Grants are available for faculty at institutions of higher education, postdoctoral researchers, and other doctoral-level scholars. Applications are encouraged from a variety of disciplines, such as but not limited to, education, sociology, economics,

psychology, demography, statistics, and psychometrics.

The Governing Board for the AERA Grants Program has established the following four strands of emphasis for proposals. Applicants are encouraged to submit proposals that:

- Develop or benefit from new quantitative measures or methodological approaches for addressing education issues
- Include interdisciplinary teams with subject matter expertise, especially when studying science, technology, engineering and mathematics (STEM) learning
- Analyze TIMSS, PISA, or other international data resources
- Include the integration and analysis of more than one data set (¶ 2-3)

Faculty members have at their disposal many funding opportunities such as the National Institutes of Health (NIH; <http://grants.nih.gov/funding/index.htm>), the National Science Foundation (NSF; <https://www.nsf.gov/>), and foundation awards such as those from the Bill & Melinda Gates Foundation (<http://www.gatesfoundation.org/how-we-work/general-information/grant-opportunities>). A useful resource for beginning grant writers is the book authored by Browning (2016).

Step 20: Establish Routine for Implementing Research Project

For many faculty members, establishing a routine for conceptualizing, planning, and implementing the research project—whether it results in a conceptual, theoretical, methodological, or empirical work—is the biggest challenge. This difficulty stems from the fact that undertaking a research project competes with other professional responsibilities (e.g., teaching activities, service activities) and non-professional obligations such as family responsibilities and social responsibilities (Some of you might be asking, “What social life?”). Thus, it is important for researchers/authors to establish a regular routine to the greatest extent possible.

In order to facilitate the creation of a timetable, I suggest that authors/researchers break down the phases of project and the major activities, determine phases of the research project that overlap, and estimate the expected completion time for each activity. The ensuing timetable should not be too rigid such that it does not allow for unexpected events (e.g., short-term illness of researcher or close family member, holiday periods), should be realistic with respect to teaching and service duties and level of administrator support, and should take into account the amount of time available before the tenure/promotion application is due. Authors/researchers should block out time for conducting the project. One way of

accomplishing this is by attempting to schedule all meetings on no more than 4 days per week such that at least 1 full day per week is allocated to the project. Researchers/authors should decide on the optimum day(s), time period, location, and aids for helping one focus (e.g., music).

Authors/researchers should do everything possible not to over-commit themselves to other duties. After all, in many institutions—at least in the United States—it is expected that up to 40% of faculty members' time (i.e., 40% research, 40% teaching, 20% service) should be devoted to research activities. Thus, if faculty members do not find time for research activities, then, in many institutions, they will not be meeting the expectations of their administrators. Throughout my career, I have attempted to block out a minimum of one day a week for research activities and I do everything that I can to protect that day by informing those who wish to schedule meetings on that day that I have a conflict due to meetings—they do not have to know that these meetings are with myself! Finally, and most importantly, researchers/authors should refrain from procrastinating.

Step 21: Collect and Analyze Data

At this point, the researcher would have completed the research conceptualization and research planning phases; would have determined the sources of help available; would have decided on two or more outlets for the ensuing manuscript; would have considered and, hopefully, secured funding; and would have planned a routine for completing a project. Now, the researcher is in a position to collect the data that he/she had planned in Step 15. I suggest that just prior to and during the data collection phase, researchers—especially beginning researchers and emergent researchers—undergo one or more debriefings. Drs. Nancy Leech, Kathleen Collins, and I introduced the concept of debriefing interviews. Although conceptualized for qualitative research studies, I have used debriefing interviews with students conducting both quantitative research studies and mixed research studies. These debriefing interviews involve the researcher being interviewed herself/himself—either synchronously (i.e., real-time interview) or asynchronously (e.g., email)—on one or more occasions, by someone else (e.g., advisor/supervisor, mentor, co-researcher, [disinterested] peer) to (a) develop greater awareness of and appreciation for the challenge of meaning making from the data collected; (b) identify personal feelings that arise before, during, and after the collection, analysis, and/or interpretation of data; (c) identify perceptions that might bias the researcher in his or her interpretation of the data; (d) appreciate the ethical responsibility of the researcher promoting and maintaining nonmaleficence, beneficence, justice, and fidelity; and (e) identify a priori assumptions about the research participants

(Onwuegbuzie, Leech, & Collins, 2008). Simply put, the overall goal of the debriefing interviews is to promote reflexivity. In particular, when conducted during the data collection process, researchers can use the discussion with the debriefer as a springboard for addressing challenges that have been identified during the data collection process. Encouragingly, the use of debriefing interviews has been found to yield extremely effective outcomes (cf. Frels & Onwuegbuzie, 2012).

Once some (especially if the study represents an emergent qualitative research study or mixed research study) or all (especially if the study represents a quantitative research study) of the data have been collected, it is time for researchers to analyze them. Data analysis in quantitative research, qualitative research, and mixed research studies typically represents the most difficult step in the empirical research process. Actually, this difficulty is not surprising bearing in mind that in the majority of institutions, doctoral students enroll in only one or two statistics courses (i.e., basic statistics course, intermediate statistics course) and qualitative research courses, and the majority of doctoral students graduate without taking a single mixed research course (Leech & Goodwin, 2008). And it is difficult to argue that taking one or two methodology courses will render a person as being fully competent in conducting quantitative, qualitative, or mixed analyses! Thus, I recommend that, whenever possible, researchers pursue methodological training opportunities (e.g., workshops, webinars) in order to build up their data analysis skills. I recall taking a workshop in structural equation modeling (SEM) soon after I graduated from my doctoral program because even though I had taken more than 25 statistics courses at the undergraduate, master's, or doctoral level, I had never taken a SEM course. And this workshop, brilliantly taught by Drs. James L. Arbuckle and Wer Wothke (developer of the SEM program called AMOS), was extremely transformational and empowering for me. And within a relatively short timeframe, the knowledge that I obtained from this workshop led to very positive outcomes such as publications in three top journals wherein, I used SEM to develop a model of statistics anxiety (Onwuegbuzie, 2003b), foreign language anxiety (Onwuegbuzie, Bailey, & Daley, 2000), and library anxiety (Onwuegbuzie & Jiao, 2004), as well as delivering an invited workshop on SEM in Argentina.

Inexperienced data analysts also might benefit from using one or more of the existing frameworks such as the ones that I have co-authored, which, for qualitative research, include a typology of the most common qualitative data analysis *approaches* (i.e., data analyses that represent whole systems; Table 1), a relationship between type of qualitative data analysis approaches and source of qualitative data

(Table 2), Miles and Huberman’s (1994) displays of within-case data analysis *methods* (i.e., data analyses that represent *part* of a system; Table 3), Miles and Huberman’s (1994) displays of cross-case data analysis *methods* (i.e., Table 4), and Saldaña’s (2012) 32 coding *techniques* (specific procedures that represent a single step in the data analysis process; Table 5). With respect to quantitative research, I refer authors to our typology of

established classes of quantitative data analysis techniques and descriptions (Figure 2) and our quantitative analysis complexity continuum (Figure 3). For mixed researchers, I refer authors to Figure 4, which represents our three-dimensional matrix indicating analytical techniques as a function of approach (i.e., quantitative vs. qualitative) and analysis emphasis (i.e., case-oriented vs. variable-oriented vs. process/experience-oriented).

Table 1

Most Common Qualitative Data Analysis Approaches

Type of Analysis	Short Description of Analysis
Constant Comparison Analysis	Systematically reducing data to codes, then developing themes from the codes.
Classical content analysis	Counting the number of codes.
Word count	Counting the total number of words used or the number of times a particular word is used.
Keywords-in-context	Identifying keywords and utilizing the surrounding words to understand the underlying meaning of the keyword.
Domain analysis	Utilizing the relationships between symbols and referents to identify domains.
Taxonomic analysis	Creating a system of classification that inventories the domains into a flowchart or diagram to help the researcher understand the relationships among the domains.
Componential analysis	Using matrices and/or tables to discover the differences among the subcomponents of domains.
Conversation analysis	Utilizing the behavior of speakers to describe people’s methods for producing orderly social interaction.
Discourse analysis	Selecting representative or unique segments of language use, such as several lines of an interview transcript, and then examining the selected lines in detail for rhetorical organization, variability, accountability, and positioning.
Secondary data analysis	Analyzing non-naturalistic data or artifacts that were derived from previous studies.
Membership categorization analysis	Utilizing the role that interpretations play in making descriptions and the consequences of selecting a particular category (e.g., baby, sister, brother, mother, father = family).
Semiotics	Using talk and text as systems of signs under the assumption that no meaning can be attached to a single term.

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Type of Analysis	Short Description of Analysis
Manifest content analysis	Describing observed (i.e., manifest) aspects of communication via objective, systematic, and empirical means.
Latent content analysis	Uncovering underlying meaning of text.
Qualitative comparative analysis	Systematically analyzing similarities and differences across cases, typically being used as a theory-building approach, allowing the analyst to make connections among previously built categories, as well as to test and to develop the categories further.
Narrative analysis	Considering the potential of stories to give meaning to individual's lives, and treating data as stories, enabling researchers to take account of research participants' own evaluations.
Text mining	Analyzing naturally occurring text in order to discover and capture semantic information.
Micro-interlocutor analysis	Analyzing information stemming from one or more focus groups about which participant(s) responds to each question, the order that each participant responds, the characteristics of the response, the nonverbal communication used, and the like.
Framework analysis	Analyzing inductively to provide systematic and visible stages to the analysis process, allowing for the inclusion of a priori as well as a posteriori concepts, and comprising the following five key stages: (a) familiarizing, (b) identifying a thematic framework, (c) indexing, (d) charting, and (e) mapping and interpreting.
Grounded visualization	Examining spatially a combination of referenced data and ethnographic data, in close relationship to each other, and integrating geographic information systems-based cartographic representations with qualitative forms of analysis and evidence, thereby yielding an inductive and critically reflexive scale-sensitive analysis that combines grounded theory and visualization.
Interpretative phenomenological analysis	Analyzing in detail how one or more persons, in a given context, make sense of a given phenomenon—often representing experiences of personal significance (e.g., major life event).
Schema analysis	Searching for cultural schemata (i.e., scripts) in texts, which include identifying semantic relationships between elements of component schemas.
Ethnographic decision models	Building a model of the decision process for a behavior of interest, resulting in a display of data, via decision trees, decision tables, or sets of rules that take the form of <i>if-then</i> statements.

Adapted from “Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond,” by N. L. Leech and A. J. Onwuegbuzie, 2008, *School Psychology Quarterly*, 23, p. 601. Copyright 2008 by American Psychological Association.

Table 2

Relationship Between Type of Qualitative Data Analysis Approaches and Source of Qualitative Data

Source of Data	Type of Qualitative Technique
Talk	Conversation Analysis Discourse Analysis Narrative Analysis Semiotics Qualitative Comparative Analysis Constant Comparison Analysis Keywords-in-Context Word Count Membership Categorization Analysis Domain Analysis Taxonomic Analysis Componential Analysis Classical Content Analysis Micro-interlocutor Analysis
Observations	Qualitative Comparative Analysis Constant Comparison Analysis Keywords-in-Context Word Count Domain Analysis Componential Analysis Taxonomic Analysis Manifest Content Analysis Latent Content Analysis
Drawings/Photographs/Video	Qualitative Comparative Analysis Constant Comparison Analysis Word Count Manifest Content Analysis Latent Content Analysis Secondary Data Analysis
Documents	Semiotics Qualitative Comparative Analysis Constant Comparison Analysis Keywords-in-Context Word Count Secondary Data Analysis Classical Content Analysis Text Mining

Adapted from "Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond," by N. L. Leech and A. J. Onwuegbuzie, 2008, *School Psychology Quarterly*, 23, p. 590. Copyright 2008 by American Psychological Association.

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Table 3

Miles and Huberman's (1994) Displays of Within-Case Data Analysis Methods

Type of Display	Description
<i>Partially ordered:</i>	
Poem	Composition in verse
Context chart	Networks that map in graphic form the interrelationships among groups and roles that underlie the context of individual behavior
Checklist matrix	Way of analyzing/displaying one major concept, variable, or domain that includes several unordered components
<i>Time-ordered:</i>	
Event listing	Matrix or flowchart that organizes a series of concrete events by chronological time periods and sorts them into multiple categories
Critical incident chart	Maps a few critical events
Event-state network	Maps general states that are not as time-limited as events, and might represent moderators or mediators that link specific events of interest
Activity record	Displays a specific recurring activity that is limited narrowly in time and space
Decision modeling flowchart	Maps thoughts, plans, and decisions made during a flow of activity that is bounded by specific conditions
Growth gradient	Network that maps events that are conceptualized as being linked to an underlying variable that changes over time
Time-ordered matrix	Maps when particular phenomena occurred
<i>Role-ordered:</i>	
Role-ordered matrix	Maps the participant's "roles" by sorting data in rows and columns that have been collected from or about a set of data that reflect their views, beliefs, expectations, and/or behaviors
Role-by-time matrix	Maps the participant's "roles," preserving chronological order
<i>Conceptually Ordered:</i>	
Conceptually clustered matrix	Text table with rows and columns arranged to cluster items that are related theoretically, thematically, or empirically

Type of Display	Description
Thematic conceptual matrix	Reflects ordering of themes
Folk taxonomy	Typically representing a hierarchical tree diagram that displays how a person classifies important phenomena
Cognitive map	Displays the person's representation of concepts pertaining to a particular domain
Effects matrix	Displays data yielding one or more outcomes in a differentiated manner, focusing on the outcome/dependent variable
Case dynamics matrix	Displays a set of elements for change and traces the consequential processes and outcomes for the purpose of initial explanation
Causal network	Displays the most important independent and dependent variables and their inter-relationships

Note. Adapted from " Toward a new era for conducting mixed analyses: The role of quantitative dominant and qualitative dominant crossover mixed analyses," by A. J. Onwuegbuzie, N. L. Leech, and K. M. T. Collins, 2011, in M. Williams & W. P. Vogt (Eds.), *The Sage handbook of innovation in social research methods*, p. 365. Copyright 2011 by Sage Publications.

Table 4

Miles and Huberman's (1994) Displays of Cross-Case Data Analysis Methods

Type of Display	Description
<i>Partially ordered:</i>	
Partially ordered meta-matrices	Display descriptive data for each of several cases simultaneously
<i>Case-ordered:</i>	
Case-ordered descriptive meta-matrix	Contains descriptive data from all cases but the cases are ordered by the main variable of interest
Two-variable case-ordered matrix	Displays descriptive data from all cases but the cases are ordered by two main variables of interest that are represented by the rows and columns
Contrast table	Displays a few exemplary cases wherein the variable occurs in low or high form, and contrast several attributes of the basic variable
Scatterplot	Plot all cases on two or more axes to determine how close from each other the cases are

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Type of Display	Description
Case-ordered effects matrix	Sorts cases by degrees of the major cause of interest, and shows the diverse effects for each case
Case-ordered predictor-outcome matrix	Arranges cases with respect to a main outcome variable, and provides data for each case on the main antecedent variables
Predictor-outcome consequences matrix	Links a chain of predictors to some intermediate outcome, and then illustrates the consequence of that outcome
<i>Time-ordered:</i>	
Time-ordered meta-matrix	Table in which columns are organized sequentially by time period and the rows are not necessarily ordered
Time-ordered scatterplot	Display similar variables in cases over two or more time periods
Composite sequence analysis	Permit extraction of typical stories that several cases share, without eliminating meaningful sequences
<i>Conceptually ordered:</i>	
Content-analytic summary table	Which allows the researcher to focus on the content of a meta-matrix without reference to the underlying case
Substructuring	Permits the identification of underlying dimensions
Decision tree modeling	Displays decisions and actions that are made across several cases
Variable-by-variable matrix	Table that displays two major variables in its rows and columns ordered by intensity with the cell entries representing the cases
Causal models	Network of variables with causal connections among them in order to provide a testable set of propositions or hunches about the complete network of variables and their interrelationships
Causal networks	Comparative analysis of all cases using variables deemed to be the most influential in explaining the outcome or criterion
Antecedents matrix	Display that is ordered by the outcome variable, and displays all of the variables that appear to change the outcome variable

Note. Adapted from "Toward a new era for conducting mixed analyses: The role of quantitative dominant and qualitative dominant crossover mixed analyses," by A. J. Onwuegbuzie, N. L. Leech, and K. M. T. Collins, 2011, in M. Williams & W. P. Vogt (Eds.), *The Sage handbook of innovation in social research methods*, p. 365. Copyright 2011 by Sage Publications.

Table 5

A Summary of Saldaña's (2012) 32 Coding Techniques

	Coding Method	Definition
1	Attribute Coding	Provide essential information about data for future reference
2	Axial Coding	Develop a category by grouping/ sorting / reducing the number of codes generated from the first cycle of coding
3	Causation Coding	Analyze the causality by identifying causes, outcome, and links between them
4	Descriptive Coding	Describe the topic of data with descriptive nouns (i.e., topic coding)
5	Domain and Taxonomic Coding	Analyze the cultural knowledge participants use and organize them into categories and reorganize them through further analysis into a taxonomic tree diagram
6	Dramaturgical Coding	Apply dramaturgical terms to qualitative data to analyze interpersonal and intrapersonal participant experiences
7	Eclectic Coding	Combine two or more similar First Cycle of coding methods purposefully
8	Elaborative Coding	Develop codes to refine theoretical constructs emerged from previous research or investigations
9	Emotion Coding	Apply codes accompanying emotion(s) to explore the interpersonal and/or intrapersonal participants' experiences
10	Evaluation Coding	Apply non-quantitative codes (e.g., +/-) to qualitative data for the evaluative purpose
11	Focused Coding	Develop categories with significant or frequent codes that emerged from In Vivo, Process, and/or Initial Coding
12	Holistic Coding	Analyze the data corpus as a whole and identify the basic themes or issues in the data
13	Hypothesis Coding	Apply pre-established codes to qualitative data to examine a researcher-generated hypothesis
14	In Vivo Coding	Apply the words verbatim that participants use to examine the possible dimensions or ranges of categories
15	Initial Coding	Apply provisional and tentative codes in the First Cycle of coding
16	Longitudinal Coding	Organize collected qualitative data across time; Categorize data into a matrices for further analysis and interpretation
17	Magnitude Coding	Apply supplemental or sub- codes to quantitize or qualitize the phenomenon's intensity, frequency, direction, presence, or evaluative content
18	Motif Coding	Apply original index codes utilized to classify the elements of folk talks, myths, and legends; This method can be utilized for story-based data such as journals or diaries

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Coding Method	Definition
19 Narrative Coding	Develop codes representing participant narratives from a literary perspective (e.g., storied, structured forms)
20 Outline of Cultural Materials Coding (OCM)	It was created as a specialized index for anthropologists and archeologists; Provide coding for the categories of social life
21 Pattern Coding	Develop meta-codes that identify similarly coded data by grouping them and generate major themes; Appropriate for Second Cycle coding
22 Process Coding	Apply codes by using -ing words to indicate actions
23 Protocol Coding	Apply codes or categories in a previously developed system to qualitative data (e.g., ALCOH= alcoholism or drinking)
24 Provisional Coding	Utilize the preset codes emerged from preliminary investigations or literature review and anticipated to be modified, revised, or deleted during the data analysis
25 Simultaneous Coding	Apply two or more different codes to a single qualitative datum in the different dimensions
26 Structural Coding	Categorize the data corpus into segments by similarities, differences, relationships by using conceptual phrases
27 Subcoding	Develop sub categories in the hierarchies and taxonomies added to the primary codes
28 Theoretical Coding	Develop the central category that covers all other codes and categories by integrating and synthesizing them
29 Values Coding	Apply codes consisting of three elements, <i>value</i> , <i>attitude</i> , and <i>belief</i> to examine a participant's perspectives or worldviews
30 Verbal Exchange Coding	Interpret data through the researcher's experience and reflection to explore cultural practices; Extensive written reflection is preferred to traditional margined coding methods
31 Versus Coding	Identify phenomena in a dichotomy terms and exhibit itself as X VS. Y
32 Theme, Theming the Data	Identify codes in the form of sentences capturing the essence and essentials of participant meanings

Adapted from Mapping Saldaña's coding methods onto the literature review process by A. J. Onwuegbuzie, Rebecca K. Frels, and E. Hwang, 2016, pp. 134-135. Copyright 2016 by A. J. Onwuegbuzie, Rebecca K. Frels, and E. Hwang.

In delineating the findings, it is essential that authors are transparent in describing their analyses. In fact, Onwuegbuzie and Poth (2015) documented that insufficient explanation of analysis and poor discussion of tables and figures represent errors of omission made by authors. Further, Onwuegbuzie and Daniel (2005) reported that 77% of author(s) make analytical errors (e.g., use of stepwise multiple

regression) that affect the validity of findings. Even more prevalent is the fact that 91% of authors do not discuss model assumptions (e.g., normality). On the qualitative side, many authors do not name their qualitative analysis, nor do they adequately explain them.

For the inexperienced data analyst, I suggest that he/she asks a more experienced data analyst to

serve as a co-researcher. However, I recommend strongly that the inexperienced data analyst participates in the data analysis or at least “watches over the shoulder” of the analyst so that he/she can learn how to conduct the same analysis independently in the future.

Step 22: Legitimate and Interpret Data

Legitimation. The quality of discussion of legitimation and interpretation are two of the biggest factors that separate manuscripts that are accepted for publication in top journals versus manuscripts that are rejected. In fact, disturbingly, approximately two thirds (i.e., 65%) of authors do not discuss any limitations of their findings—specifically, the validity of quantitative findings, legitimation of qualitative findings, or legitimation of the findings stemming from the mixed research component. Yet, there are several mixed methods-based validity/legitimation frameworks in existence. In particular, I have developed/co-developed frameworks for quantitative researchers, qualitative researchers, and mixed researchers that appear to have been popularized. Specifically, for quantitative researchers, I developed what I called the *Quantitative Legitimation Model* (Onwuegbuzie, 2003a; cf. Figure 5), which contains 50 different threats to internal validity and external validity that

might occur at the research design/data collection, data analysis, and/or data interpretation stages of the quantitative research process. Also developed was the Meta-Evaluation Model (Onwuegbuzie, Daniel, & Collins, 2009; cf. Figure 6), which subdivides content-, criterion-, and construct-related validity into several areas of evidence. For qualitative researchers, Drs. Nancy Leech and I co-developed what we called the *Qualitative Legitimation Model* (Onwuegbuzie & Leech, 2007; cf. Figure 7), which contains 29 elements of legitimation for qualitative research at the following three recursive stages of the research process: research design/data collection, data analysis, and data interpretation. Finally, for mixed researchers, Dr. Burke Johnson and I conceptualized a typology of mixed research legitimation, which comprises nine types of legitimation (Onwuegbuzie & R. B. Johnson, 2006; cf. Table 6). In addition to this mixed research legitimation typology, Heyvaert, Hannes, Maes, and Onghena (2013) identified 12 other validity frameworks that they called critical appraisal frameworks. I contend that by using a framework, the researcher’s study will be more rigorous, and, in turn, more publishable.

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Table 6

Typology of Mixed Methods Legitimation Types

Legitimation Type	Description
Sample Integration	The extent to which the relationship between the quantitative and qualitative sampling designs yields quality meta-inferences.
Inside-Outside	The extent to which the researcher accurately presents and appropriately utilizes the insider's view and the observer's view for purposes such as description and explanation.
Weakness Minimization	The extent to which the weakness from one approach is compensated by the strengths from the other approach.
Sequential	The extent to which one has minimized the potential problem wherein the meta-inferences could be affected by reversing the sequence of the quantitative and qualitative phases.
Conversion	The extent to which the quantizing or qualitzing yields quality meta-inferences.
Paradigmatic mixing	The degree to which the mixed researcher reflects on, understands, and documents his or her 'integrated' mixed research philosophical and methodological paradigm, including his or her epistemological, ontological, axiological, methodological, and rhetorical beliefs about mixed research.
Commensurability	The extent to which the meta-inferences made in a mixed research study reflect a mixed worldview. It is based on the cognitive process of Gestalt switching (to "see" fully and understand the different perspectives) and integration into a new "mixed" or "multi-lens" worldview. This new viewpoint is not possible for some individuals without extensive training, but can usually be obtained via an open-minded "mixed team" of researchers.
Multiple Validities	The extent to which addressing legitimation of the quantitative and qualitative components of the study results from the use of quantitative, qualitative, <i>and</i> mixed validity types, yielding high quality meta-inferences.
Political	The extent to which a mixed researcher appropriately addresses the interests, values, and standpoints of multiple stakeholders in the research process. One should be extra sensitive to the needs of stakeholders with minimal power and voice.

Table 1 was adapted from Onwuegbuzie and Johnson (2006). Reprinted with kind permission of the Mid-South Educational Research Association and the Editors of *Research in the Schools*.

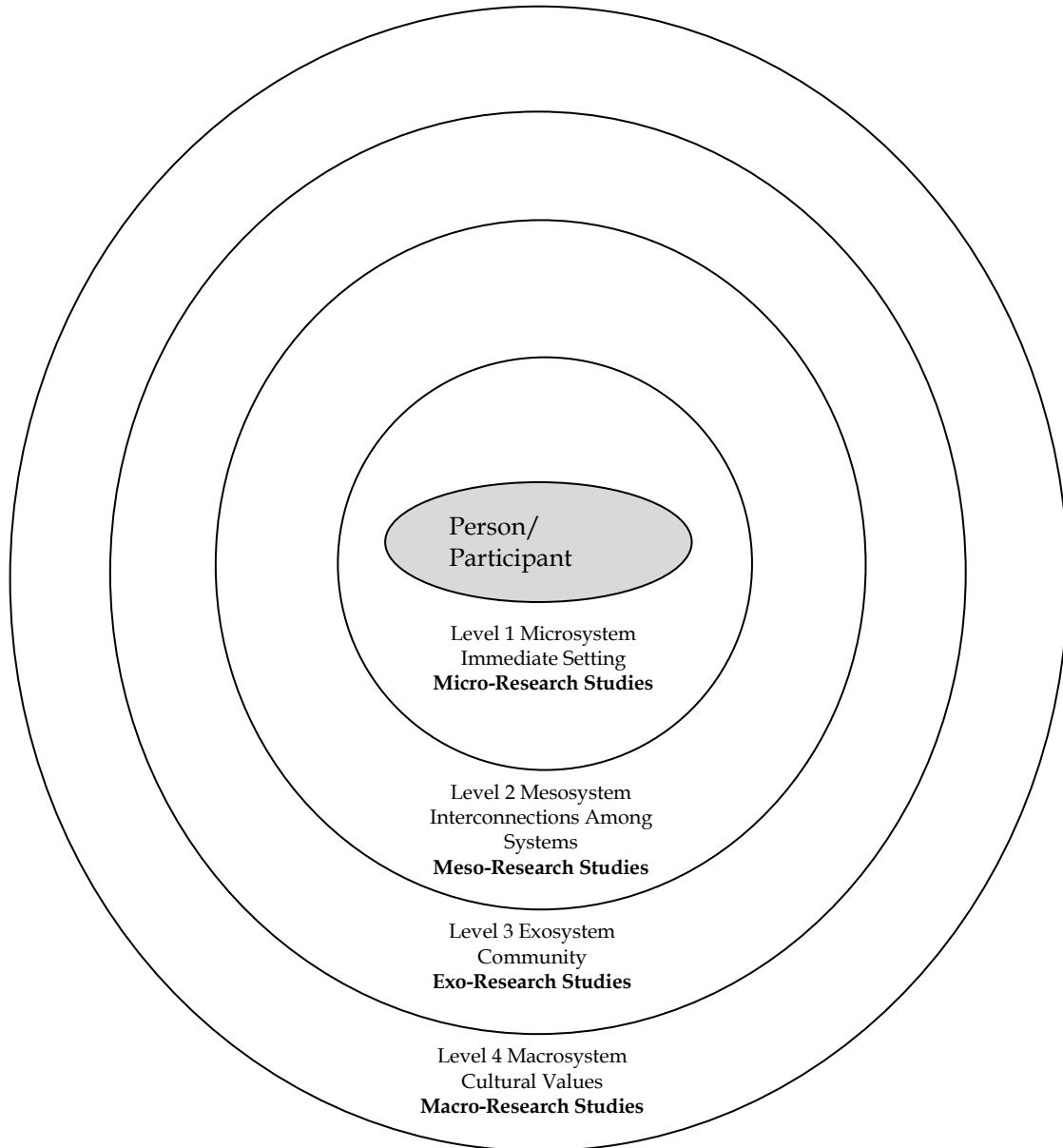


Figure 1. A visual representation of Bronfenbrenner's (1979) ecological systems model and levels of research.

Adapted from "Foreword: Using Bronfenbrenner's Ecological Systems Theory to Frame Quantitative, Qualitative, and Mixed Research," by A. J. Onwuegbuzie, K. M. T. Collins, and N. L. Leech, 2013, *International Journal of Multiple Research Approaches*, 7, p. 5. Copyright 2016 by Anthony J. Onwuegbuzie.

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Measurement Techniques	
Name of Analytical Technique	Description
Classical Test Theory	Analyzes the relationship among observed scores, true scores, and error in an attempt to predict outcomes of psychological and behavioral measurement
Item Response Theory (Latent Trait Theory, Strong True Score Theory, Modern Mental Test Theory))	Analyzes the probabilistic relationship between the response that a person provides (e.g., examinee) on a quantitative item(s) and item parameters (e.g., item difficulty, item discrimination, guessing parameter) and person parameters/latent traits (e.g., ability, personality trait)
Multilevel Item Response Theory	Estimates latent traits of the respondent at different levels and examines the relationships between predictor variables and latent traits at different levels
Exploratory Factor Analysis	Explores the underlying structure of correlations among observed variables in an attempt to reduce dimensionality of data, wherein a small(er) number of factors significantly account for the correlations among the set of measured variables; utilizes estimates of common variance or reliability on the main diagonal of the correlation matrix that is factor analyzed
Principal Component Analysis	Explores the underlying structure of correlations among observed variables in an attempt to reduce dimensionality of data, wherein a small(er) number of factors significantly account for the correlations among the set of measured variables; utilizes the total variance of each variable to assess the shared variation among the variables. That is, it uses “ones” on the diagonal of the correlation matrix that is factor analyzed. Principal component analysis typically is conducted for variable reduction because it can be used to develop scores that are combinations of observed variables, whereas exploratory factor analysis is more appropriate for exploring latent constructs and allows for error in estimation models.
Confirmatory Factor Analysis	Verifies the factor structure of a set of observed variables; it allows testing of the hypothesis that a relationship between observed variables and their underlying latent constructs exists
Multiple Factor Analysis (optimal scaling, dual scaling, homogeneity analysis, scalogram analysis)	Analyzes observations described by two or more sets of variables, and examines the common structures present in some or all of these set
Hierarchical Factor Analysis	Differentiates higher-order factors from a set of correlated lower-order factors
Assessing One Variable/Participant at a Time	
Descriptive Analyses (i.e., measures of central tendency, variation/dispersion, position/relative standing, and distributional shape)	Summarizes and describes a set of data one variable at a time in quantitative terms

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Single-Subject Analysis	Analyzes observations from one or more individuals in which each individual serves as her/his own control (i.e., individual participant is the unit of analysis, although a group such as a classroom also can be the analytic unit); note that it is possible to include several variables at once in a design but analyses typically focus on one variable at a time
Assessing Differences through Variance Analysis	
Independent samples t test	Examines the difference between the means of two independent groups
Dependent samples t test (paired samples t test)	Examines the difference between the means of two groups, wherein the scores in one group is paired or dependent on the scores in the other group
Analysis of Variance (ANOVA)	Partitions the observed variance into components based on different sources of variation; one-way ANOVA examines the equality of several independent groups based on one dependent/outcome variable; factorial ANOVA examines the effects of two or more independent/explanatory/predictor variables and their interactions
Analysis of Covariance (ANCOVA)	Examines whether one or more factors (and their interactions) have an effect or are related to the outcome variable after removing the variance associated with which quantitative predictors (covariates)
Multivariate Analysis of Variance (MANOVA)	Examines whether one or more factors have an effect or are related to two or more outcome variables
Multivariate Analysis of Covariance (MANCOVA)	Examines whether one or more factors (and their interactions) have an effect or are related to two or more outcome variables after removing the variance associated with quantitative predictors (covariates)
Hierarchical Linear Modeling (HLM) (multilevel modeling, mixed effects modeling, covariance components modeling, random-coefficient regression modeling)	Analyzes variance in an outcome variable when data are in nested categories (e.g., students in a class, classes within a school, schools in one school district)
Multivariate Hierarchical Linear Modeling	Analyzes variance in multivariate dependent variables when the covariance structure of the independent variables is of interest
Repeated Measures Analysis of Variance (RMANOVA)	Involves an analysis of variance conducted on any design wherein the independent/predictor variable(s) have all been measured on the same participants under multiple conditions
Mixed Analysis of Variance (Mixed ANOVA)	Examines differences between two or more independent groups whereby repeated measures have been taken on all participants such that one factor represents a between-subjects variable and the other factor represents a within-subjects variable. Observations also may be nested by a unit (e.g., person) where units are generally treated as a between-subject variable.
Repeated Measures Analysis of Covariance (RMANCOVA)	Examines whether one or more factors (and their interactions) have an effect or are related to the outcome variables (i.e., repeated measures) after removing the variance associated with quantitative predictors (covariates)
Assessing Group Membership/Relationships	

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Cluster Analysis	
Cluster Analysis	Assigns a set of observations, usually people, into groups or clusters wherein members of the group are maximally similar
Q Methodology	Involves finding relationships between participants across a sample of variables
Profile Analysis	Classifies empirically individual observations based on common characteristics or attributes measured by an observed variable(s)
Multivariate Profile Analysis	Classifies empirically individual observations based on common characteristics or attributes (i.e., multiple dependent variables) measured by observed variables (i.e., multiple independent variables)
Chi-Square Analysis	Involves any test statistic that has a chi-square distribution but generally analyzes the independence of two categorical variables via a contingency table
Chi-Square Automatic Interaction Detection (CHAID)	Examines the relationships between a categorical dependent measure (dichotomous, polytomous, ordinal) and a large set of selected predictor variables that may interact themselves; it involves a series of chi-square analyses (i.e., iterative, chi-square tests of independence) being conducted between the dependent and predictor variables
Multivariate Chi-Square Automatic Interaction Detection (CHAID)	Examines the relationships between two or more categorical dependent measure (dichotomous, polytomous, ordinal) and a large set of selected predictor variables that may interact themselves; it involves a series of chi-square analyses (i.e., iterative, chi-square tests of independence) being conducted between the multiple dependent and predictor variables
Descriptive Discriminant Analysis	Explains group separation (i.e., categorical dependent/outcome variable) as a function of one or more continuous or binary independent variables
Predictive Discriminant Analysis	Predicts a group membership (i.e., categorical dependent/outcome variable) by one or more continuous or binary independent variables
Assessing Time and/or Space	
Time Series Analysis	Involves analyzing, using frequency-domain methods or time-domain methods, an ordered sequence of observations over time, taking into account the serial dependence of the observations for the purpose of modeling and forecasting.
Survival Analysis	Analyzes time-to-event data (i.e., failure time data)
Geostatistics	Analyzes spatiotemporal (i.e., existing in both space and time) datasets
Panel Data Analysis	Analyzes a particular participant or group of participants within multiple sites, periodically observed over a defined time frame (i.e., longitudinal analysis).
Correspondence Analysis	Converts data organized in a two-way table into graphical displays, with the categories of the two variables serving as points; this graphical display presents the relationship between the two categorical variables

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Canonical correspondence analysis (CCA)	Relates specific variables (e.g., types of species) to variables of interest (e.g., types of environments)
Fuzzy correspondence analysis	Similar to Correspondence Analysis, except uses “fuzzy data”—data that are coded with multiple categories instead of the common “0” or “1”
Multiple Correspondence Analysis	Analyzes the pattern of relationships of several categorical dependent variables
Discriminant Correspondence Analysis	Categorizes observations in predefined groups using nominal variables
Proportional Hazard Model	Estimates the effects of different covariates influencing the times-to-failure of a system (i.e., hazard rate)
Explaining or Predicting Relationships Between Variables	
Linear Regression	Examines the linear correlations between one (simple regression) or more (multiple regression) binary or continuous explanatory variables and a single continuous dependent variable
Non-Linear Regression	Examines the non-linear correlations between one or more binary or continuous explanatory variables and a single continuous dependent variable
Probit regression	Examines the non-linear correlations between one or more binary or continuous explanatory variables and a binomial response variable
Regression Discontinuity Analysis	Examines causal effects of interventions, wherein assignment to a treatment condition is determined, at least partly, by the value of an observed covariate that lies on either side of a fixed threshold/cut-score
Logistic Regression (logit regression)	Examines the relationship between one (simple logistic regression model) or more (multiple logistic regression model) binary or continuous explanatory variables and a single categorical dependent variable
Multivariate Logistic Regression	Examines the relationship between one or more explanatory variables and two or more categorical dependent variable(s)
Descriptive Discriminant Analysis	Explains group separation (i.e., categorical dependent/outcome variable) as a function of one or more continuous or binary independent variables
Predictive Discriminant Analysis	Predicts a group membership (i.e., categorical dependent/outcome variable) by one or more continuous or binary independent variables.
Log-Linear Analysis (multi-way frequency analysis)	Determines which of a set of three or more variables (and/or interactions) best explains the observed frequencies with no variable serving as the dependent/outcome variable
Canonical Correlation Analysis	Examines the multivariate relationships between two or more binary or continuous predictor variables and two or more binary or continuous outcome variables
Path Analysis	Describes and quantifies the relationship of a dependent/outcome variable to a set of other variables, with each variable being hypothesized as having a direct effect or indirect effect (via other variables) on the dependent variable
Structural Equation Modeling (causal modeling, covariance structure analysis)	Involves building and testing statistical models; it encompasses aspects of confirmatory factor analysis, path analysis, and regression analysis

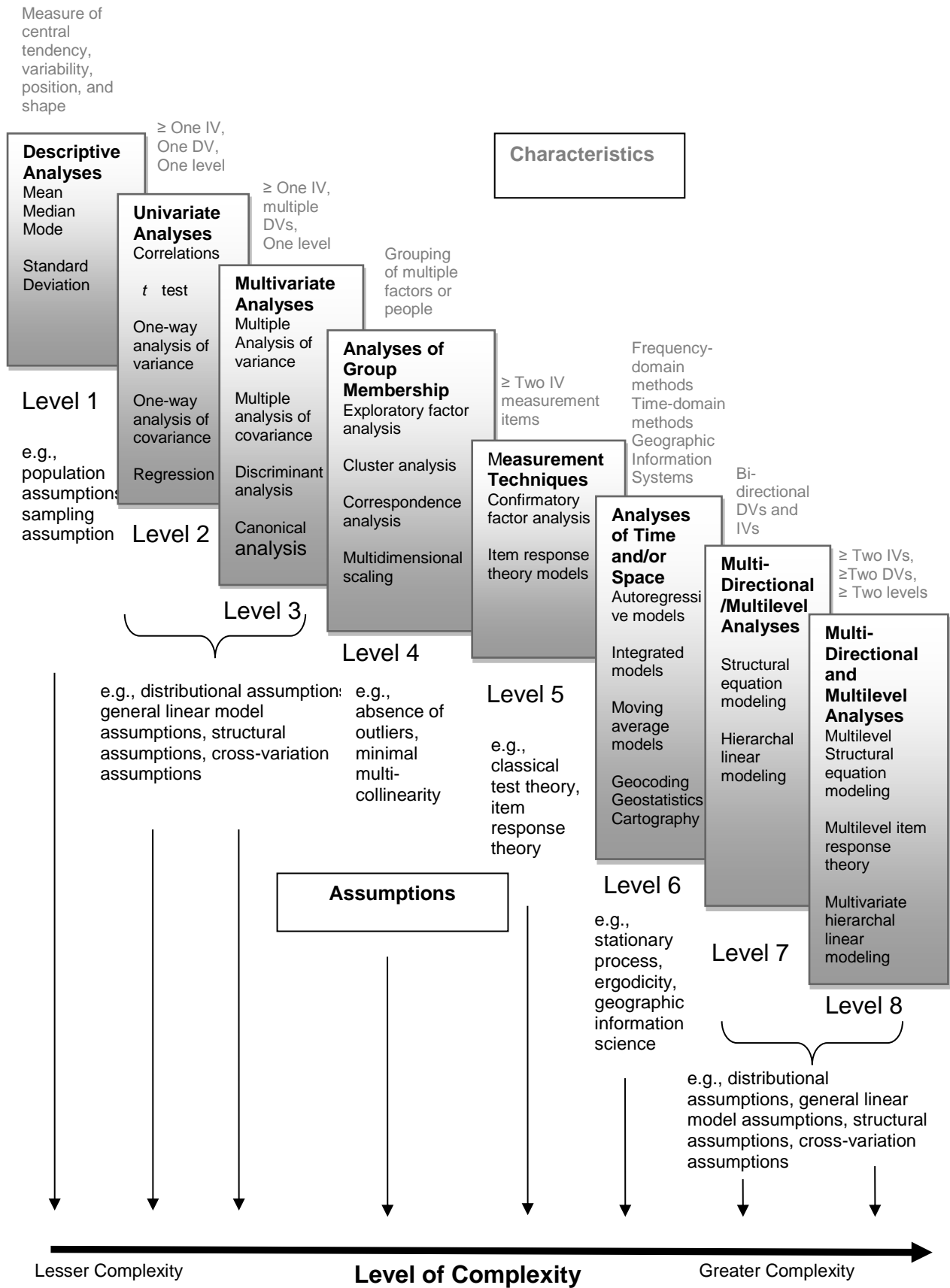
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Multilevel Structural Equation Modeling	Used when the units of observation form a hierarchy of nested clusters and some variables of interest are measured by a set of items or fallible instruments
Multilevel latent class modeling	Analyzes data with a multilevel structure such that model parameters are allowed to differ across groups, clusters, or level-2 units; the dependent variable is not directly observed but represents a latent variable with two or more observed indicators
Correlation coefficient	Measures the association between two variables
Multidimensional Scaling	Explores similarities or dissimilarities in data; it displays the structure of a set of objects from data that approximate the distances between pairs of the objects
Social Network Analysis	Involves the identification and mapping of relationships and flows among people, groups, institutions, web sites, and other information- and knowledge-producing units of different sizes; it provides both a visual and a mathematical analysis of complex human systems; the unit of analysis is not the individual, but an element consisting of a collection of two or more individuals and the linkages among them
Propensity Score Analysis	Replaces multiple covariates such that just one score is applied as a predictor rather than multiple individual covariates, thereby greatly simplifying the model; balances the treatment and control groups on the covariates when participants are grouped into strata or subclassified based on the propensity score; it adjusts for differences via study design (matching) or during estimation of treatment effect (stratification/regression)

Figure 2. Established classes of quantitative data analysis techniques and descriptions.

^a For many of these analyses, nonparametric versions and Bayesian versions exist.

Note. Adapted from " Toward a new era for conducting mixed analyses: The role of quantitative dominant and qualitative dominant crossover mixed analyses," by A. J. Onwuegbuzie, N. L. Leech, and K. M. T. Collins, 2011, in M. Williams & W. P. Vogt (Eds.), *The Sage handbook of innovation in social research methods*, pp. 354-356. Copyright 2011 by Sage Publications.



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Note. IV = Independent Variable; DV = Dependent Variable

Figure 3. Quantitative analysis complexity continuum. Adapted from “A typology of quantitative analyses,” by A. Ross and A. J. Onwuegbuzie, 2014. Copyright 2016 by A. J. Onwuegbuzie.

Phase	Variable-oriented	Process/Experience-oriented	
Case-oriented			
Quantitative	Descriptive Analyses (e.g., measures of central tendency, variability, position) Cluster Analysis Q Methodology Time Series Analysis Profile Analysis Panel Data Analysis Single-Subject Analysis Classical Test Theory Item Response Theory Multidimensional Scaling	Descriptive Analyses (e.g., measures of central tendency, variability, position) Correlation Analysis Independent <i>t</i> -tests Dependent <i>t</i> -tests Analysis of Variance Analysis of Covariance Multiple Analysis of Variance Multiple Analysis of Covariance Multiple Regression Logistic Regression Descriptive/Predictive Discriminant Analysis Log-Linear Analysis Canonical Correlation Analysis Path Analysis Structural Equation Modeling Hierarchical Linear Modeling Correspondence Analysis Multidimensional Scaling Exploratory/Confirmatory Factor Analysis Time Series Analysis Classical Test Theory Item Response Theory	Descriptive Analyses (e.g., measures of central tendency, variability, position) Dependent <i>t</i> -tests Time Series Analysis Profile Analysis Panel Data Analysis Single-Subject Analysis Classical Test Theory Item Response Theory Repeated Measures Analysis of Variance Repeated Measures Analysis of Covariance Survival Analysis Path Analysis Structural Equation Modeling Hierarchical Linear Modeling
Qualitative	Method of Constant Comparison Word Count Keywords-in-Context Classical Content Analysis Domain Analysis Taxonomic Analysis Componential Analysis Conversation Analysis Discourse Analysis Secondary Data Analysis Membership Categorization Analysis Narrative Analysis Semiotics Manifest Content Analysis Latent Content Analysis Text Mining Qualitative Comparative Analysis Micro-interlocutor Analysis	Word Count Keywords-in-Context Classical Content Analysis <i>Secondary Data Analysis</i> Taxonomic Analysis Componential Analysis <i>Text Mining</i> Qualitative Comparative Analysis <i>Semantic Network Analysis</i> <i>Cognitive Map Analysis</i> <i>Causal Network Analysis</i> Conceptually Ordered Matrix Analysis Case-ordered Matrix/Network Analysis Time-ordered Matrix/Network Analysis Variable-by-Variable Matrix Analysis	Method of Constant Comparison Word Count Keywords-in-Context Classical Content Analysis Domain Analysis Taxonomic Analysis Componential Analysis Conversation Analysis Discourse Analysis <i>Secondary Data Analysis</i> <i>Text Mining</i> <i>Narrative Analysis</i> Manifest Content Analysis Latent Content Analysis Qualitative Comparative Analysis <i>Semantic Network Analysis</i> <i>Cognitive Map Analysis</i> <i>Causal Network Analysis</i>

Partially Ordered Matrix Analysis Time-ordered Matrix/Network Analysis	<i>Predictor-Outcome Matrix Analysis</i> <i>Explanatory Effect Matrix Analysis</i>	Time-ordered Matrix/Network Analysis
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Note: All quantitative analyses above include non-parametric counterparts.

Figure 4. Three-dimensional matrix indicating analytical techniques as a function of approach (i.e., quantitative vs. qualitative) and analysis emphasis (i.e., case-oriented vs. variable-oriented vs. process/experience-oriented). Adapted from "Mixed data analysis: Advanced integration techniques," by A. J. Onwuegbuzie, J. R. Slate, N. L. Leech, and K. M. T. Collins, 2009, *International Journal of Multiple Research Approaches*, 3, p. 27. Copyright 2016 by Anthony J. Onwuegbuzie.

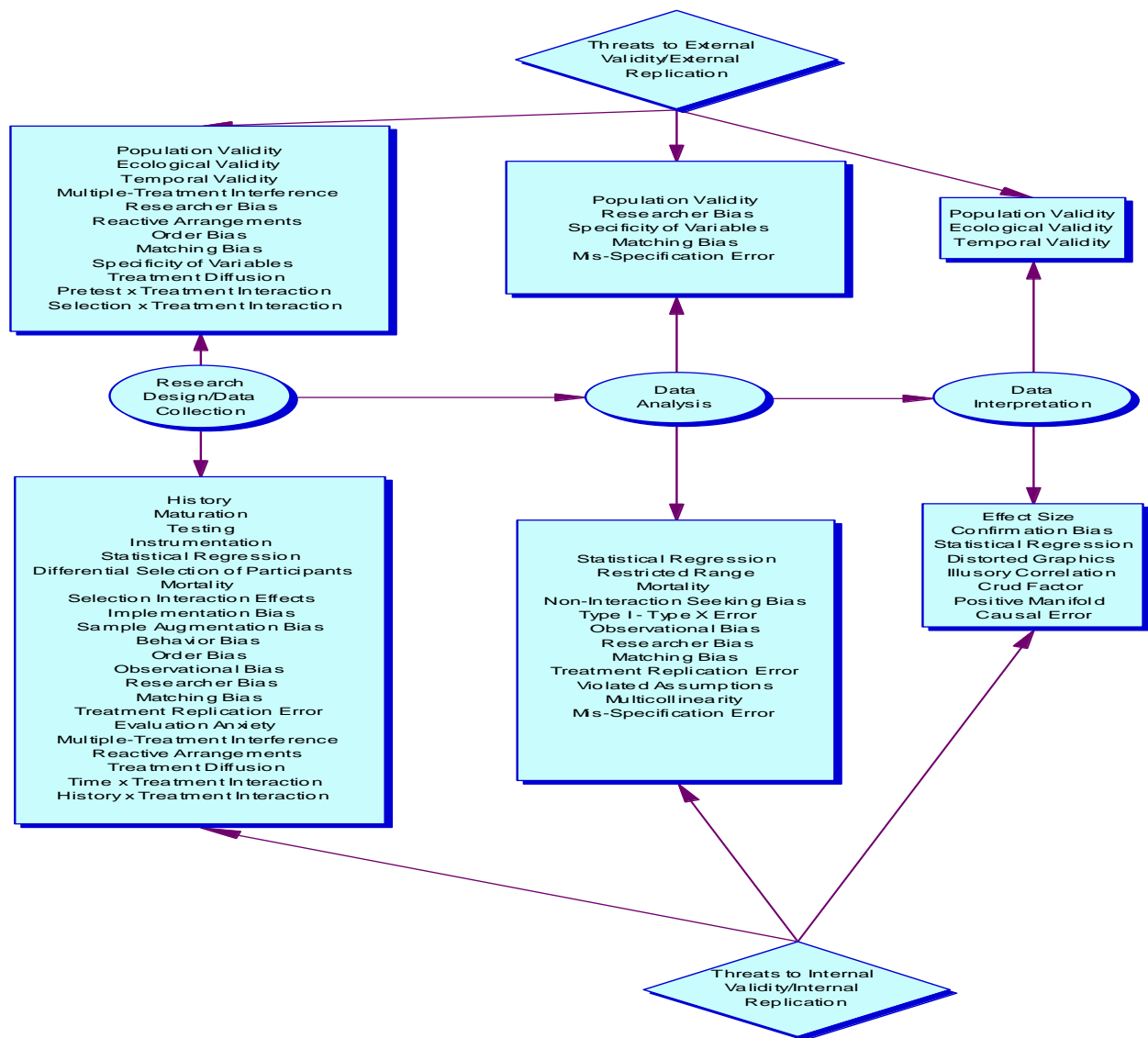


Figure 5. Onwuegbuzie's (2003a) *Quantitative Legitimation Model*. This figure was adapted from Onwuegbuzie (2003a). Reprinted with kind permission of the Mid-South Educational Research Association and the Editors of *Research in the Schools*.

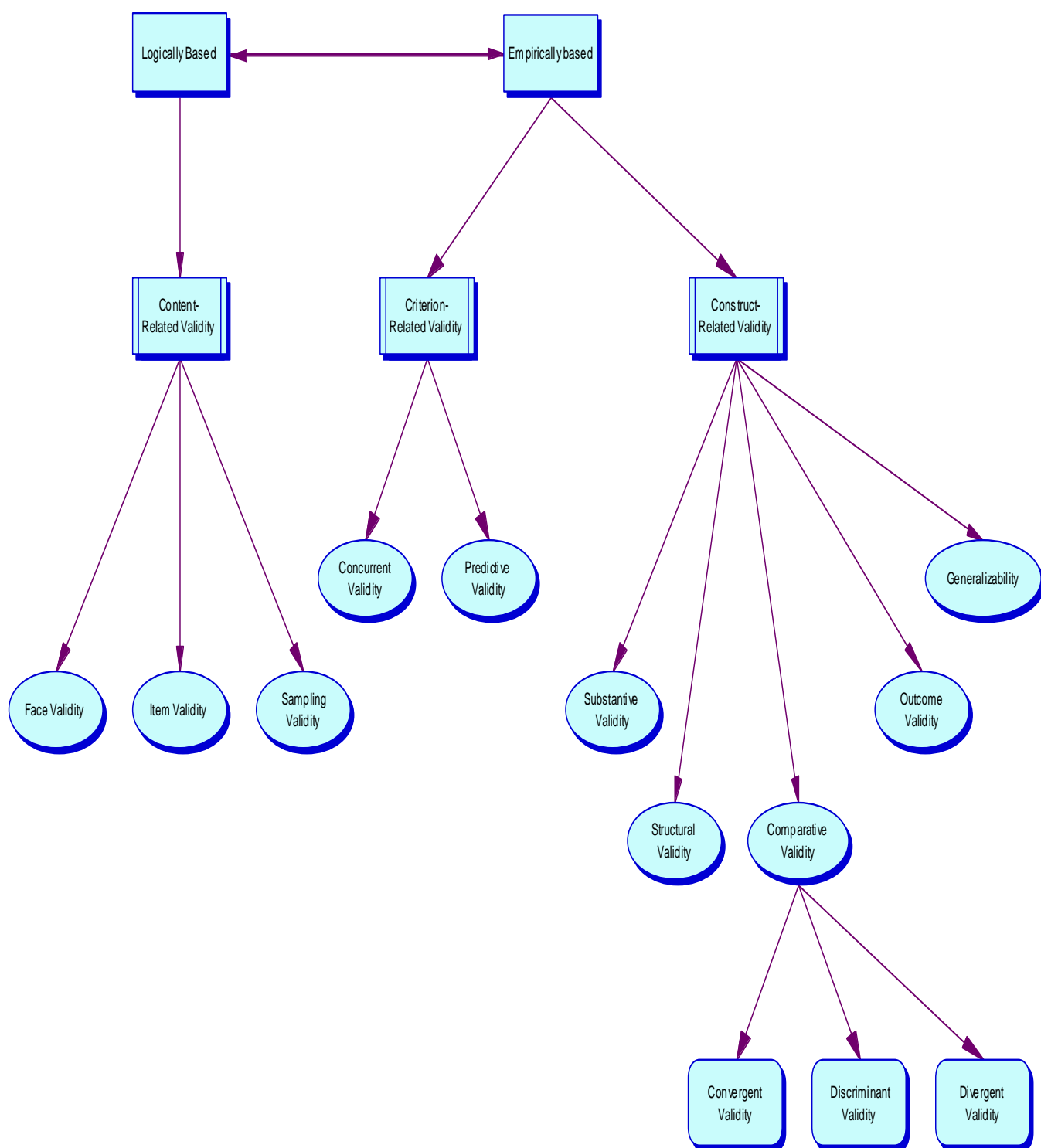


Figure 6. Onwuegbuzie, Daniel, and Collins's (2009) *Meta-Validation Model*. This figure was adapted from Onwuegbuzie, Daniel, and Collins (2009). Reprinted with kind permission of Springer.

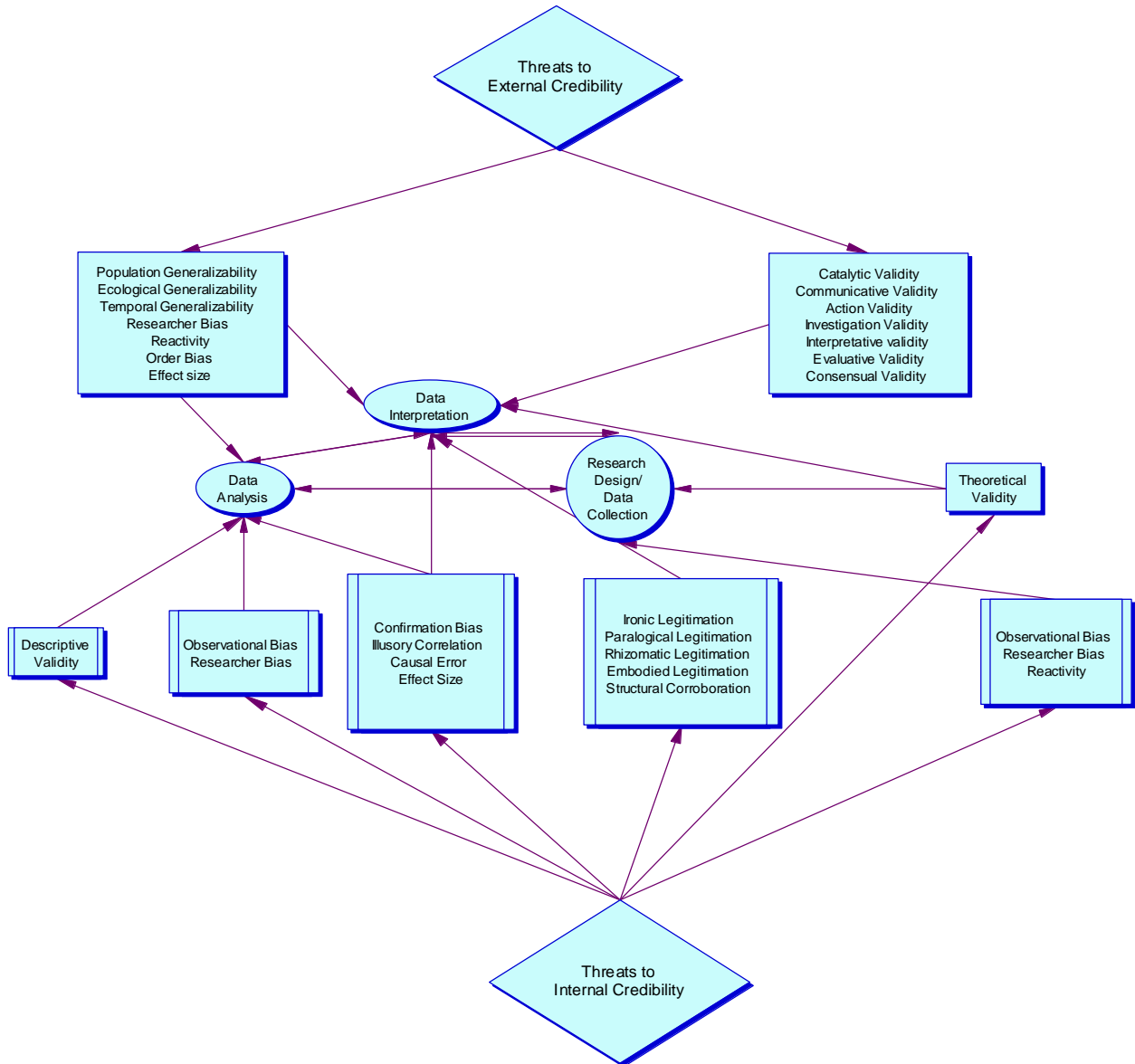


Figure 7. Onwuegbuzie and Leech's (2007) *Qualitative Legitimation Model*. This figure was adapted from Onwuegbuzie and Leech (2007). Reprinted with kind permission of Springer.

Interpretation. With regard to interpreting the findings, a common error committed by inexperienced authors is that these interpretations mostly involve a re-gurgitation of the findings and, thus, do not provide much information beyond the results section. Alongside this mere re-gurgitation of findings is a lack of comparing of the findings to the extant literature. Indeed, it is only by interpreting findings adequately that researchers can contextualize their results appropriately. Another common problem associated with weak interpretations is that they represent over-generalizations (i.e., *interpretive inconsistency*; Collins et al., 2012), wherein the authors make statistical generalizations that are not consistent with the sampling scheme and sample size used. In studies, we cannot have it both ways. We cannot utilize small, purposive samples and then make statistical generalizations based on small, non-random samples. Supporting my assertion here, as noted previously, Onwuegbuzie and Leech (2010) documented that 29.6% of research studies involved generalizations beyond the underlying sample that were made inappropriately by the author(s). Consistent with this finding, Onwuegbuzie and Daniel (2005) observed that over-generalizations in discussion sections of empirical reports occur 30.0% of the time. Thus, I encourage authors to spend the time necessary to arrive at appropriate interpretations that stem from the data.

Step 23: Write the Work

The major secret of success of all of the centurions in this special issue, as well as all other well-published scholars, is that their manuscripts are extremely well written. Having published one or more manuscripts of Drs. Bruce Thompson, Isadore Newman, Bonnie Nastasi, David W. Johnson, Roger T. Johnson, and John R. Slate as editor of *Research in the Schools* and/or *Educational Researcher*, as guest editor for a journal (e.g., *International Journal of Multiple Research Approaches*, *International Journal of Qualitative Methods*), and/or editor of a textbook (i.e., Collins, Onwuegbuzie, & Jiao, 2010), I can declare unequivocally that the first drafts of each manuscript that these nationally/internationally renowned scholars submitted always virtually were in publishable form. As an example, I recall an article co-authored by Drs. David W. Johnson and Roger T. Johnson (2009) while I was part of the editor team of *Educational Researcher*, alongside Drs. Patricia B. Elmore (Editor), Gregory Camilli (Editor), Marla H. Mallette (Associate Editor), and Julie P. Combs (Associate Editor). Despite the fact that this journal, which is one of the flagship journals of AERA, had a first impact factor of 3.774 during our tenure as editors, which was unprecedented for the field of education—at the time, representing #1 in Education and Education

Research rankings out of 177 journals—Drs. David W. Johnson and Roger T. Johnson submitted a manuscript that was so brilliantly written that submission to acceptance in final form took a (likely record) complete review process time of a mere 4 days! And as an indicator of its quality and impact, even today, at the time of writing, this article is the 12th most read article in the history of *Educational Researcher*

(<http://edr.sagepub.com/reports/most-read>)! As another example, when Dr. Slate and I “edited” the first draft of the Centurion manuscripts, we are able to provide virtually no editorial suggestions.

A common question that many beginning and emergent writers have asked me repeatedly over the years is something like “How are some authors able to publish so much?” My simple answer is “Because they all *write with discipline!*” However, although my answer is simple, the process is quite time-consuming. In fact, with the exception of the late Dr. Christine E. Daley, the vast majority of exceptional writers had to work extremely hard to attain this level of scholarship. In fact, I suspect that most—if not all—beginning authors do not realize how hard we have had to work to attain our level of scholarship. For example, for months after the publication of each edition of the APA Publication Manual, this manual always was in close proximity to me when I wrote. And during these times, I found myself consulting the Publication Manual as many times as was needed to attain as close to an APA error-free manuscript as possible. In fact, because I consulted the Publication Manual so frequently during these times, before long, I became familiar with virtually every APA rule, regulation, and guideline, and subconsciously, even became familiar with the page numbers of many of the most common APA elements. And whenever I write, I find myself frequently using online dictionaries (e.g., www.dictionary.com) and meta-search engines (e.g., www.dogpile.com) to ensure that I am not violating any grammatical rules. Simply stated, checking for accuracy in following the style guide and grammar initially is very time-consuming. However, as one becomes familiar with these writing conventions, and as one develops his/her own writing style, increasingly less time is needed to consult these authoritative sources.

Unfortunately, over the years, I have come to the conclusion that the vast majority of beginning authors do not work sufficiently hard to produce high-quality manuscripts. Interestingly, we found that 23% of manuscripts are poorly written (Onwuegbuzie & Daniel, 2005). This percentage is high, bearing in mind that virtually all authors have graduate degrees (i.e., master’s level or higher) and they have access to spell check and grammar check functions (e.g., depressing the “F7” function for the

Microsoft Word program), as well as online dictionaries and thesauri. As such, I find this rate disturbing. However, even more disturbing is the fact that approximately 95% of the hundreds of the first draft of manuscripts that I have edited over the last 19 years as an editor—including those written by many experienced scholars—have not been *written with discipline*. And, interestingly, manuscripts that are poorly written are, on average, approximately 12 times more likely to be rejected for publication than are manuscripts that are well written (Onwuegbuzie & Daniel, 2005).

So, what does it take to write with discipline? Well, the other Centurion authors have provided outstanding advice, and I encourage you strongly to follow their advice and guidelines. What I now offer are guidelines that complement their thoughtful recommendations. One recommendation that I offer is that authors read as many scholarly works as possible because this gives them the opportunity to determine both trends and best practices in writing. Also, I encourage authors to make a note of every phrase or sentence that they like in their readings with the goal of using these statements in their future works—of course ensuring that they refrain from plagiarizing. Another suggestion is that authors serve as reviewers for one or more journals—preferably as an editorial board member (which typically is held in higher esteem in the academic community than is providing ad-hoc reviews of journal manuscripts). Even though such service will add to the author's work load, I believe it is worth the investment in time, because it will afford them opportunities to review both manuscripts that are well written and those that are poorly written, as well as manuscripts that fall in between these two poles. And such an experience should help authors to develop effective writing identities.

Moreover, I refer the readers to our literature review book (i.e., Onwuegbuzie & Frels, 2016)—where Dr. Frels and I devote two long chapters—Chapters 11 and 12—that provide a meta-framework for writing with discipline. In particular, in these chapters, we outline the three major stages of the writing process: Pre-Draft-Writing Stage (i.e., consisting of 14 decisions that need to be made before writing; cf. Table 10.1 in Onwuegbuzie & Frels, 2016), Draft-Writing Stage (i.e., consisting of 15 decisions that need to be made during the writing stage; cf. Table 11.4 in Onwuegbuzie & Frels, 2016), and Draft-Audit Stage (i.e., consisting of 18 checkpoints for auditing the first and subsequent writing drafts; cf. Table 11.10 in Onwuegbuzie & Frels, 2016).

Further, as did Dr. Slate in his very useful Centurion article, I refer you to our series of editorials and articles on writing. Over the last 6 years, in these works, we have demonstrated the

importance of writing with discipline when writing dissertations and preparing scholarly works for consideration for publication in journals. In particular, in these works, we have demonstrated the importance of avoiding violations to the American Psychological Association (APA) style guide (APA, 2010) in the abstract (Hahs-Vaughn, Onwuegbuzie, Slate, & Frels, 2009) and the body of the manuscript (Onwuegbuzie, Combs, Slate, & Frels, 2010), as well as the reference list (Onwuegbuzie, Combs, Frels, & Slate, 2011; Onwuegbuzie, Frels, & Slate, 2010; Onwuegbuzie & Hwang, 2013; Onwuegbuzie, Hwang, Combs, & Slate, 2012; Onwuegbuzie, Hwang, Frels, & Slate, 2011; Onwuegbuzie, Waytowich, & Jiao, 2006; Waytowich, Onwuegbuzie, & Jiao, 2006) and table (Frels, Onwuegbuzie, & Slate, 2010) sections of empirical and non-empirical (e.g., methodological, conceptual, theoretical) works. These works are unusually time-consuming to produce because they involve the coding of the whole of every manuscript in the sample for errors of interest (e.g., APA errors), as well as for demographic features of the manuscript (e.g., number of authors, number of manuscript pages, gender of first author, genre of manuscript) and the disposition of the manuscript. And, typically, each manuscript takes more than 3 hours to code.

In these works, we have documented that manuscripts which contained nine or more different APA errors are 3.00 times (95% CI = 1.31, 6.87) more likely to be rejected than are manuscripts containing less than nine APA errors. More specifically, manuscripts containing tables and/or figures that have violations to APA style are 4.68 times more likely to be rejected by the editor; manuscripts that contain APA-related grammatical errors are nearly 2.5 times more likely to be rejected; and manuscripts that contain APA-related format errors are more than 3.5 times more likely to be rejected. Based on these three sets of APA errors, we concluded the following:

That these three error themes have such excellent predictive power has intuitive appeal. With respect to the first, failure to construct tables and/or figures that are clear, coherent, consistent, and, above all, accurate can affect both the readability and integrity of the manuscript, which, in turn, might increase the probability of the manuscript being rejected. Conversely, tables and figures that are well constructed make—a scientific article a more effective communication device (APA, 2010, p. 126), thereby rendering an article more appealing to reviewers and editors. With respect to the theme of grammar, authors of the sixth edition of the *Publication Manual* state that—Incorrect grammar and careless construction of sentences distract the reader,

introduce ambiguity, and generally obstruct communication (p. 77). Thus, violations that fall under this theme can be extremely problematic for reviewers and editors. Further, not paying close attention to formatting—which includes the manuscript’s organization (i.e., structure) and content—likely would give the reviewer and editor a sense that the author is not competent, thereby increasing the likelihood of a negative recommendation/decision, not only because the manuscript is more difficult to read, but because it might give the reviewer and editor the impression that the author was not meticulous. (Onwuegbuzie, Combs, et al., 2010, p. xxv)

With respect to citation errors, citation errors are committed by between 88.6% (Onwuegbuzie, Combs, et al., 2011) and 91.8% (Onwuegbuzie, Frels, et al., 2010) of authors. Moreover, authors who make more than three citation errors are approximately four times more likely (odds ratio = 4.01; 95% confidence interval = 1.22, 13.17) to have their manuscripts rejected than are authors who make three or less citation errors (Waytowich et al., 2006).

Further, we have provided evidence that the readability of the manuscript is an important predictor of the quality of a manuscript (Onwuegbuzie, Mallette, Slate, & Hwang, 2013). Specifically, using the Flesch Reading Ease (RE) and Flesch-Kincaid Grade Level (GL)—two popularized and easily accessible readability formulas—among other findings, we documented that (a) manuscripts with Flesch RE scores between 0 and 30 were 1.64 more times less likely to be rejected than were manuscripts with Flesch RE scores greater than 30, and (b) manuscripts with Flesch-Kincaid GL scores of 16 and above were 4.55 times less likely to be rejected than were manuscripts with Flesch-Kincaid GL scores less than 16.

In another study, we determined that the number of citations predicted the disposition of the manuscript (Onwuegbuzie, Frels, Hwang, & Slate, 2013). Specifically, for *Research in the Schools*, manuscripts with less than 45 references are 2.52 (95% CI = 1.03, 6.19) times more likely to be rejected than are manuscripts with 45 references or more (Onwuegbuzie, Frels, et al., 2013).

Even more recently, I examined the prevalence of link words/phrases (Onwuegbuzie, in press). In particular, I noted that manuscripts which exhibit greater use of link words/phrases associated with *Add information/provide similarity*, *Narration*, and *Provide an emphasis* draw more favorable reviews, and are more likely to be accepted for publication, than are manuscripts with less use. Although these findings are correlational, combined with data from qualitative interviews of award-

wining reviewers suggests that it is important for authors to use link words/phrases in a way that they provide appropriate transitions between sentences and between paragraphs, which, in turn, make it easier for readers in general and journal reviewers in particular to follow the author’s logic of argumentation.

Finally, currently, I am analyzing the most common grammatical errors, as well as investigating the grammatical errors that best predict whether or not a manuscript is rejected by the editor. Thus far, I have identified more than 20 common grammatical errors (Onwuegbuzie, 2016b). Now, I am in the process of determining which of these errors best predict manuscript disposition.

Our series of studies have provided compelling evidence that not writing with discipline places it at greater risk for rejection by the editor. When mentoring beginning writers, early on, I inform them of my following observation:

There are two elements of a manuscript that all authors can control: adherence to the style guide and adherence to grammatical rules. Authors cannot guarantee how much the topic of manuscript is liked by the reviewers and editor. However, they can guarantee that it is well written if their manuscript is as error free as possible with respect to these two elements. And good things are much more likely to happen when a manuscript is well written. So, it is advantageous to write with discipline.

When beginning authors co-write a manuscript for the first time, usually, they are surprised as to how hard I work to ensure that our manuscript is as error free as possible. I would be disappointed in myself if I ever receive the comment that the manuscript is not well written. Consequently, it is not unusual for a dozen or more drafts—and sometimes as many as 30 or more drafts—to be written before I deem it ready to be submitted to a journal for review for possible publication. However, contrary to the assumption of some of my colleagues with whom I have never co-authored a work, I am not a perfectionist. Indeed, in a previous work, I have identified a significant relationship between perfectionism and procrastination (e.g., Onwuegbuzie, 2000a)—with procrastinators finding it difficult to declare that their manuscripts are in final form ready for submission. (As my doctoral mentor, Dr. Joseph Ryan, used to state, “A manuscript, however well written, has a zero chance of being published until it is submitted!”) Rather, in undergoing the draft-audit process, my goal is to eliminate as many style guide and grammatical errors as possible in the allotted time. And my hard work on minimizing errors appears to pay off every time because even for my manuscripts that are rejected, I usually receive the comment that the manuscript is well written. Thus, I encourage

authors to develop and to maintain a culture of writing manuscripts that are as error free as possible.

Step 24: Conduct Meta-Evaluation of the Work and Proof-Read it

Numerous meta-frameworks exist for evaluating both the research process and ensuing manuscript. I have been involved in co-developing several meta-frameworks myself. These meta-frameworks include Leech and Onwuegbuzie (2010a, 2010b), Onwuegbuzie and Corrigan (2014), Wisdom, Cavaleri, Onwuegbuzie, and Green (2012), and Onwuegbuzie and Poth (2015). What is unique about each of these meta-frameworks is that they are evidence based. That is, each meta-framework stems from data. For example, in an invited editorial co-authored with Julie A. Corrigan from the University of Ottawa—who, at the time of writing, is one of the most prolific doctoral students with whom I have ever collaborated—we provide evidence-based guidelines for conducting and reporting mixed research that are framed around Collins, Onwuegbuzie, and Sutton's (2006) 13-step model of the mixed research process. Additionally, we divide our reporting standards into four general areas (i.e., research formulation, research planning, research implementation, and research dissemination) that we itemize via a taxonomy that contains more than 60 elements.

As another example, our latest meta-framework (Onwuegbuzie & Poth, 2015) stemmed from our mixed methods analysis of 45 reviews by recognized experts in their fields of 16 manuscripts submitted for initial review for publication in two *International Journal of Qualitative Methods (IJQM)* special issues on mixed research. Our analysis yielded six metathemes that comprised 32 themes which characterized the criticisms of the special issue reviewers: lack of warrantedness (i.e., containing 7 themes), lack of justification (i.e., containing 6 themes), writing issues (i.e., containing 6 themes), lack of transparency (i.e., containing 6 themes), lack of integration (i.e., containing 5 themes), and philosophical issues (i.e., containing 2 themes). These six meta-themes and their associated 32 themes, in turn, led to the development of a reviewer sheet containing 32 assessment items for reviewers of mixed methods research manuscripts.

As we state in our article, this reviewer sheet

not only is potentially useful for reviewers by providing them with explicit items that characterize a quality manuscript to evaluate as well as for their editors who, subsequently, would be the recipients of quality reviews but also is potentially useful for authors of mixed methods research manuscripts by providing them with explicit guidelines for developing these manuscripts. Further, we believe that such a reviewer sheet would be helpful for college-level instructors of mixed methods

research courses, mentors, advisors, thesis/dissertation chairs/supervisors and other committee members, as well as authors of future mixed methods textbooks and other mixed methods works, and even writers of future editions of style guides such as the APA Publication Manual. Importantly, we expect that this reviewer sheet also would be helpful for mixed methods practitioners who can be defined as those “with theoretical and practical knowledge of three methodologies (i.e., qualitative, quantitative, and mixed methods)” (Poth, 2012, p. 315). (p. 10)

Interestingly, this reviewer sheet already has been translated into Japanese! Although these aforementioned meta-frameworks were developed for the meta-evaluation of mixed research works, because they facilitate the assessment of both quantitative and qualitative components of mixed research studies, they are applicable for the meta-evaluation of monomethod research (i.e., quantitative research alone *or* qualitative research alone) studies. Whatever meta-framework is used, I suggest that authors select one that is evidence-based.

Once the meta-evaluation has been conducted and adjustments have been made to the manuscript as needed, the final stage is the draft-auditing stage. For single authors who are struggling writers and for teams containing multiple authors who are all beginning writers, as well as for authors whose first language is not English, I suggest that they ask an experienced colleague to proof-read their manuscripts. It is important that authors select a proof-reader who will offer detailed and constructive criticism. I suggest that authors acknowledge any editorial assistance in a footnote. However, please note that if substantial help is provided by the proof-reader, then the author(s) should ask her/him to be a co-author. My recommendation here is consistent with APA stipulation on authorship that I quoted earlier.

On the other hand, if authors cannot find an experienced colleague to proof-read the manuscript, if possible, they should consider seeking writing assistance that is available within the institution. Many universities contain writing centers that can assist with proof-reading. However, although such a service is normal for students to use, it might provide a source of embarrassment for faculty members, in which case, it makes sense for them to consider paying for a professional proof-reading service. There are many professional proof-reading services advertised on the web. However, I suggest that authors rely on referrals by trusted colleagues. Once a proof-reader has been selected, I recommend that the author(s) ask the proof-reader to use tracked changes so that the author(s) easily can see the revisions that are made by the proof-reader. At *RITS*,

for the past 15 years, we have been fortunate to have had Dr. Gail Hughes as our proof reader because she is the best proof-reader that I know. Throughout her tenure as *RITS* copyeditor, for every article, she has caught errors that both my co-editors and I missed.

Step 25: Submit Manuscript Once (Journal) Ready

Once the manuscript has been meta-evaluated and proof-read thoroughly, it is now ready to be submitted to the first-choice journal identified in Step 18. When I first began my career in academe, in order to submit a manuscript, one had to mail multiple copies of it to the editor. However, today, the vast majority of journals have some form of online submission process. There are several online systems that manage the submission and peer review of manuscripts—with Scholar One Manuscript (<http://scholarone.com/products/manuscript/>) being one of the most common online systems. As co-editors of *Research in the Schools*, Dr. Slate and I use a system called Fasttrack, which is not as comprehensive as is Scholar One but is cheaper and meets our purposes. Whatever system is used for submission to the first-choice journal, it is essential that authors follow the submission instructions extremely carefully because failure to do (e.g., failure completely to blind the manuscript) can result in the manuscript being rejected by the editor (i.e., called a *desk reject*) before being sent to a set of external reviewers.

A very important point to remember is that authors *cannot* submit a manuscript to more than one journal at a time. To do so would be considered unethical. This restriction to one submission at a time is to avoid editors wasting the valuable time of reviewers by asking them to review a manuscript, only for the author(s) who had submitted the same manuscript simultaneously to another journal to decide to focus on attempting to publish their manuscript in the other journal. In fact, to ensure that authors are not making multiple submissions of the same manuscript, most editors require authors to declare in some manner (e.g., in their cover letters, by checking a box on an online repository system) that their manuscript represents an original manuscript that is not under simultaneous consideration by another journal editor. Appendix A contains a sample cover letter.

Step 26: Monitor the Review Process

When an author submits a manuscript via some kind of online submission system, typically, he/she receives an acknowledgement within minutes, if not seconds, either via a posting on the repository or an (automatic) email sent to the lead author (or sometimes sent to all authors). At this point, the manuscript is placed in a queue system awaiting the editor or editorial assistant to assign it to external reviewers for review—usually between two and six reviewers. For other forms of manuscript submission (e.g., via email), authors

should contact the editor if they do not receive an acknowledgement within a few days. Authors should thank the editor if their acknowledgment of is given via e-mail.

Authors should keep a record of their manuscript submission process. It is difficult enough to commit to memory the exact date of submission of one manuscript once the weeks and months roll on, let alone two or more manuscripts. Thus, assuming that authors are aiming to pursue a program of scholarship, I suggest that they record each submission process electronically. For example, authors could use Microsoft Excel to track the submission process of each manuscript. Specifically, a column can be created for each of the following elements, respectively: Article Number, Title of Article, Genre of Article, Current Status, Author(s), Journal Title, Editor's Name, Contact Information, Editor's Projected Time for Review Process, Date First Acknowledged, Date First Decision, Editor's Decision [1], Date Query, Date of Resubmission, Date of Acknowledgement, Editor's Decision [2], Date Accepted, Date Galley Proof Due, and Date Reprint Sent. And based on the editor's stated time for review process, the author should contact the editor if he/she is not notified of the editor's decision within 1 month of the projected date. Appendix B contains a sample letter to the editor to query the status of the submitted manuscript.

Step 27: Begin New Project While Waiting for Editor's Decision

After submitting a manuscript to their first-choice journal, with few exceptions (e.g., some journals representing the medical field), authors will have to wait for at least 3 months, but more often than not, they will have to wait at least 6 months. However, while waiting for the editor's decision, rather than resting on one's laurels, the author should work on the next manuscript. Now, if this next manuscript represents a brand new topic, then the author should go to Step 1. However, if the next manuscript represents a continuation of the same topic, then the starting point will be [much] further than Step 1. In fact, a faculty member who wishes to maximize her/his contribution to the field/discipline, in time, should have manuscripts at several steps of the 30-step publishing process!

Step 28: Submit Manuscript to Another Journal if Rejected

If, unfortunately, the manuscript being reviewed ends up being rejected by the editor, then after addressing any major criticisms and editorial suggestions provided by the editor and reviewers, you can send the manuscript to your second-choice journal without further delay. Also, as a matter of courtesy to the editor, I suggest that you acknowledge to the editor his/her decision. Indeed, being an editor is a time-consuming task and the overwhelming majority of editors are not paid to be

editors. And you never know, the next time that you submit a manuscript to the same journal, the editor might remember how courteous and gracious you were previously, which might sway the author not to reject the manuscript if it receives marginal reviews. After all, editors are human beings! Simply put, writing a “Thank You” response to an editor who just rejected your manuscript might be considered as providing *good karma*! Appendix C contains a sample response to a rejection decision by the editor.

Rejection is very painful especially because of the amount of time and resources invested to produce the manuscript. Even though I have been authoring/co-authoring manuscripts for two decades now, and even though my rate of manuscript rejection has decreased substantially over the years, I can assure you that every time a manuscript of mine is rejected, it still hurts! Notwithstanding, we, as authors, should not allow a painful rejection to prevent us from submitting the manuscript to our second-choice journal. In fact, over the years, on several occasions, I have submitted a manuscript that ended up getting rejected. Yet, when I submitted it to my/our second-choice journal, it was accepted—sometimes with no changes needed at all. So, when you receive a rejection, mourn for a short period of time, and then submit it—or a modified version of it—to another journal as soon as possible.

Step 29: Contact Editor if S/he Recommends Manuscript Should be Revised and Re-Submitted

Especially when the journal has a low acceptance rate and/or high impact factor, it is difficult for authors to receive an acceptance decision from editors the first time around. It is even more difficult to receive an acceptance decision with no recommended or required changes. Most of the time, even if all the reviews are [mostly] favorable, the editor typically will not accept the manuscript but, instead, will invite the author(s) to revise and to resubmit the manuscript.

Although the author(s) might view a revise and resubmit editor decision as representing somewhat of a negative outcome, unless the required changes are extremely extensive or one or more of the required changes are not possible to be addressed (e.g., required change is not compatible with the author’s philosophical stance; one or more required changes is unreasonably time-consuming from the perspective of the author), a revise and resubmit editor decision actually is a positive finding. You might be asking why I think it is a positive finding? Well, my answer to your excellent question stems from my own personal experience. Specifically, of the numerous revise and resubmit decisions that I have received over the years, only on one occasion did my/our revising and resubmitting the manuscript not lead to acceptance and publication during the first round of revisions or a

subsequent round—implying a revision success rate of more than 99%! In fact, on at least two occasions, the previously rejected manuscript was accepted by the editor of the second-choice journal with no changes! Thus, over the years, I have learned that what might be a marginal fit or even a non-fit for one journal might be a good fit for another journal. For example, the editor might have rejected a manuscript with marginal reviews because he/she has a backlog of accepted manuscripts and would have rendered a revise and resubmit editor decision if there had been no backlog. In contrast, the editor of the second-choice journal, faced with a similarly marginal set of reviews for this manuscript but with no backlog of accepted manuscripts, might render a revise and resubmit decision. Such inconsistency in how editors treat manuscripts with marginal reviews provides another reason for authors not to be discouraged by a rejection but to submit the manuscript to the next-choice manuscript as soon as possible after receiving the rejection.

Once you receive an invitation from the editor (i.e., usually via email) to revise and to resubmit a manuscript, you should read the editor’s letter extremely carefully, including the editor’s directive of the revisions that need to be made, as well as all the reviewers’ concerns and recommendations. A careful examination of the editor letter should enable you to decide the ease with which you can revise the manuscript in a way that is consistent with the set of required/suggested editor and reviewer revisions. Assuming that you conclude that the revisions are feasible to make—and this should be the case almost always because editors generally will never waste their time asking reviewers to make revisions if they did not believe that they are capable of doing so—you should email the editor thanking her/him for the review process (whether or not you think it was great); informing her/him of your intention to address all reviewers’ comments; and notifying him/her of any ambiguous comments, contradictions among reviewers, comments with which you disagree, and, most importantly, whether you need a time extension for making the revisions. I never ask for an extension unless I really need one because I recognize that most editors are working under a deadline for publishing journal issues. And as I recall, I have always been given an extension when I asked for one—although sometimes I have had to agree to an extension that is less than optimal for me because I recognize that I have a greater chance of getting the manuscript published in the current journal than if I submitted it for the first time to another journal.

Once the deadline for revising and resubmitting the manuscript has been determined (which would be original deadline if you do not ask for an extension), you should make sure that you keep to it because you do not want to run the risk of

your manuscript being rejected because it was returned too late to be published in the issue targeted by the editor. Thus, you should develop a time management plan to ensure a timely resubmission. If you are part of an author team, you should schedule a meeting (i.e., face-to-face or virtual) with all co-authors as soon as possible. This meeting should result in a determination of the distribution of work on revising the manuscript, and with each co-author making a written commitment to meet the deadline agreed on for the part that he/she is responsible for revising. Although you should be prepared to revise your manuscript multiple times, you should do everything possible to address the editors' and reviewers' concerns and recommendations to the fullest extent possible to maximize your chances of having to make only one round of revisions.

Most of the time, the editor will expect you to resubmit a clean manuscript (i.e., containing no track changes or comments). However, a few editors will want your revised manuscript to include the tracked changes. If no directive is provided by the editor, then you should assume that a clean manuscript is expected.

Once all the revisions have been made, you (and your co-authors) should write a detailed cover letter that itemizes changes to the manuscript and provides a rationale for any recommended changes that were not made. Once the cover letter has been completed, you should submit it with the revised manuscript to the editor. It should be noted that many editors send the revised manuscript to one or more reviewers who reviewed the original manuscript. Thus, it is even more important to address each and every concern and suggestion made by the reviewers. As part of your cover (email) letter, you should ask the editor to send the cover letter alongside the manuscript to the next round of reviewers so that they can see the extent to which you attempted to address each and every reviewer/editor comment. As such, it is essential that you keep your cover letter blinded such that the reviewers will not know your identity as the author.

Appendix D contains an actual cover letter that provides our itemized response to each editor's and reviewer's comment that was submitted alongside the revised manuscript. You can see that this letter is divided into two parts. The first part (i.e., first page) represents the preamble specifically for the editor, whereas the second part (i.e., from the second page onwards)—itemizing blindly each editor/reviewer comment—is written for both the editor and second-round reviewers. Also, as you can see, we did not agree to all the recommendations, especially Recommendations 1, 3, 4, 6, 7, and 8 of Reviewer 1. In each case, we provided a rationale for not making the recommended change—on occasion, with citations. Further, you can see that we quoted our exact insertion that addressed the

recommendation (e.g., Reviewer 1, Recommendation 5). In fact, by presenting the exact insertion or modification, alongside the page number, the cover letter becomes self-contained, and the editor can use the letter alone to render a decision as to the extent to which we have addressed the editor/reviewer recommendations. And over the years, I have found that, in virtually every case, the editor has really appreciated the meticulousness of our cover letters—so much so, that it led to us having an expedited editor decision. In the present example, we received positive feedback regarding our cover letter and an acceptance decision within 1 hour (see Appendix E)!

Step 30: Respond when a Manuscript is Accepted by Editor

Once you have revised your manuscript to the satisfaction of the editor, it should be accepted by the editor. You might receive an unconditional and final acceptance in which no further changes are required. Alternatively, you might receive a conditional acceptance wherein once the final (required) revisions are made (these revisions are usually relatively small enough for the editor conditionally to accept the manuscript), you will receive unconditional and final acceptance. If the latter occurs, then you should make these changes as soon as possible. Appendix F presents an example cover letter accompanying a revised [conditionally] accepted manuscript.

Once your manuscript has been accepted, the final phase is to await the galleyproofs. This will be your final opportunity to correct any errors of commission. These proofs might take anything from a few days to a few months, depending on the issue in which the editor has decided that your article will be published. When you receive the galleyproofs, usually, you will be given between 48 hours and 72 hours to provide the corrections to the copyeditor. You might be able to get a short extension, depending on when the issue has been scheduled to be published; however, if such a deadline is granted, then it is likely to be a short timeframe of only a few days.

It is vital that you and your co-authors read these proofs extremely carefully because any errors that you miss will appear in the published article. When examining these proofs, it is essential that you check not only the body of the article, but also ensure that there are no citation errors. Some production editors send a pdf version of the galleyproofs and then ask you to use the correction tools available with Adobe Acrobat (e.g., add comment) to indicate the corrections. Alternatively, authors may be asked to list all the corrections in a Microsoft Word document, specifying the page number and line number of each correction. Please note that production editors frown upon authors who add new text at the galleyproofs stage unless the text is absolutely necessary. Appendix G presents a

sample cover letter submitted with the corrections to the galleyproofs.

Once you submit your galleyproofs, it should only be a matter of weeks before the issue that contains your article is published. The publication of your article marks the end of your 30-step publication process. CONGRATULATIONS!!! You have published a[nother] article! I suggest strongly you celebrate your great accomplishment. I know too many colleagues who do not take the time to celebrate their publications. Not me; I always have a bottle of champagne in my refrigerator waiting to celebrate scholarly accomplishments. So, please take the time to celebrate in your own special way. If your celebration involves eating and drinking, Bon Appetite and Cheers!

Strategies for Helping Authors Secure Impactful Publications

So far, I have presented a 30-step meta-framework for getting an article published. These steps, which are summarized in Figure 8, should be useful regardless of the type of journal. Being able to publish an article is a great accomplishment, but for some authors, this is not sufficient. Instead, these authors want to secure *impactful* publications. Therefore, in this section, I will discuss some strategies for doing so. However, because this article already is extremely long, I will provide only a brief treatise here. I will provide a much more extensive discussion in a future work.

Step	Label
1	Find and Develop a Topic Area of Interest
2	Determine the Genre of the Work to be Written
3	Identify and Articulate the Rationale of the Work to be Written
4	Determine the Outlet
5	Determine the Goal of the Article
6	Determine the Audience for the Article
7	Determine the Type of Generalization Needed
8	Decide Whether Collaboration is Needed/Feasible
9	Explore Belief Systems
10	Determine the Objective of the Study
11	Determine the Research Purpose(s)/Research Question(s)
12	Determine the Genre of the Work
13	Select the Underlying Sampling Scheme
14	Select the Underlying Research Design
15	Determine Data to be Collected
16	Examine Possible Sources of Help for Project
17	Determine Possible Venues for Oral Presentation of Paper
18	Choose Two or More Outlets for Publication of Paper
19	Consider Funding Sources for Project
20	Establish Routine for Implementing Research Project
21	Collect and Analyze Data
22	Legitimate and Interpret Data
23	Write the Work
24	Conduct Meta-Evaluation of the Work and Proof-Read it
25	Submit Manuscript Once (Journal) Ready
26	Monitor the Review Process
27	Begin New Project While Waiting for Editor's Decision
28	Submit Manuscript to Another Journal if Rejected
29	Contact Editor if S/he Recommends Manuscript Should be Revised and Re-Submitted
30	Respond when a Manuscript is Accepted by Editor

Figure 8. Tony Onwuegbuzie's 30-step guide to publishing.

Select a needed, new or emerging, and sustainable topic. First and foremost, in order to secure a series of publications that impact the author's field, the author must select a topic that is needed, new or emerging, and sustainable. As

evidence of my statement here, all the centurion authors selected one or more such topics and have made their names, at least in part, by conducting a program of scholarship in these areas. For example, among many topics, Dr. Bruce Thompson has made

his name for topics such as effect sizes, statistical significance testing, factor analysis, structural equation modeling, score reliability, structure coefficients, and canonical correlation analysis; Dr. Bonnie Nastasi has become internationally renowned for her work on children's psychological well-being, and culturally appropriate health promotion and health risk prevention programming for child, adolescent, and adult populations; Dr. Isadore Newman is a leading authority in the area of mixed methods, the general linear model, and several other areas; Drs. David W. Johnson and Roger T. Johnson both have made their names in the areas of cooperative learning and conflict resolution; and Dr. John R. Slate has made his name, among many topics, for his work on college readiness and study skills.

An example of a topic that was needed, new or emerging, and sustainable is *mixed methods*. As described by Teddlie and R. B. Johnson (2009) (see also Johnson & Gray, 2010), the 1980s was characterized by the exacerbation of what was called *paradigm wars* (Gage, 1989) among philosophers, theorists, and methodological purists, wherein quantitative and qualitative researchers were pitted against each other; mixed research being subjected to persistent criticism that included the assertion that quantitative and qualitative research methods cannot and should not be mixed due to their unchangeable differences—known as the *incompatibility thesis* (cf. Howe, 1988); continued development of rationale for the use of mixed research (e.g., Greene et al., 1989); and promotion of various forms of pragmatism that was coined a *philosophy of what works* (cf. R. B. Johnson, Onwuegbuzie, de Waal, Stefurak, & Hildebrand, 2016). The 1990s marked the start of the institutionalization of mixed research as a distinct methodological orientation, which was characterized by the promotion of mixed research as a distinct research tradition and the increase in the publication of mixed research studies across many fields (Teddlie & R. B. Johnson, 2009), including the book by one of the Centurions, Dr. Isadore Newman, which was one of the earliest mixed research books (i.e., Newman & Benz, 1998). However, at the turn of the 21st century, the number of published mixed research works was still relatively small, and, thus, mixed research remained in its “adolescence” (Teddlie & Tashakkori, 2003, p. 3). Thus, everyone I know who wrote multiple works in the area of mixed research during the early 21st century—which includes four of the seven contributors of this Centurion special issue (including Drs. Newman, Nastasi, and Slate)—has made an impact in this field.

A compelling example of how the selection of a topic that is needed, new or emerging, and sustainable can fast forward an author's career is the case of Dr. Hannah Gerber, Associate Professor of Literacy at Sam Houston State University, and one

of Dr. Slate and my colleagues. Dr. Gerber's dissertation involved comparing and contrasting in-school and out-of-school literacies among adolescent male videogamers within the context of new literacy studies. Because 97% of youth aged 12 to 17 play videogames (Lenhart et al., 2008), early in her academic career, she realized the potential of studying the confluences of learning that surround videogame spaces with adolescents. Thus, she decided to study videogames and learning—and the practical applications for videogames in classroom use. And even though, at the time of writing, Dr. Gerber is only in her seventh year in the academy, already she has published extensively on the connection between video games and adolescent literacy in top peer-review journals (e.g., *The ALAN Review*, *English Journal*, *Educational Media International*, *Tech Trends*). Additionally, she writes a regular column on the relationship among popular video games, literacy, and youth learning in VOYA Magazine and has been invited to write columns for *English Journal* and *Journal of Adolescent and Adult Literacy*. Furthermore, she is a co-author and co-editor of multiple books (e.g., Gerber, Abrams, Curwood, & Magnifico, 2016) and has served as guest editor for a special edition of an international publication (*Educational Media International*, the flagship publication of the International Council of Educational Media and published by Routledge). She is the former chair of the National Council of Teachers of English/Conference on English Education (NCTE/CEE) Commission on New Literacies, Technologies, and Teacher Education and a current co-chair for the NCTE Collaborative on Contemporary Literacies, Popular Culture, and Out-of-School Spaces. Additionally, she serves as a member of the Executive Board of the International Council of Educational Media. Even more impressively, not only has Dr. Gerber presented at national and international conferences on videogames and learning, but also she has served as an invited keynote speaker at more than one dozen national and international literacy, technology, and learning conferences, such as the annual Joint European Conference on Technology Enhanced Learning (held in Estonia in summer 2016) and the National Association for Distance Education and Open Learning (NADEOSA) held annually in South Africa.

Further, she is the recipient of awards selected by peers in her field, most notably the Divergent Award for Excellence in 21st Century Literacies awarded by the Initiative for 21st Centuries Literacies Research, and has been awarded several grants from national organizations such as National Council of Teachers of English (NCTE) and the Association of Literacy Educators and Researchers to help further research in understanding gaming and literacy. Additionally, she has been involved with

grant projects aimed at developing sustainable learning using virtual environments within developing nations, most notably from the United States Department of Agriculture (USDA). Due to her impact in the field, she has even procured attention from media and has had her research mentioned in top mainstream media magazines, such as *Wired Magazine* (a Conde Naste publication). Thus, by studying what clearly is a *sexy* topic, in a relatively short time, Dr. Gerber has made a big impact on the *Digital Literacies* field.

In selecting a topic that is needed, new or emerging, and sustainable, I suggest that you communicate extensively with stakeholders of the initial topic(s). For example, if you were interested in studying the topic of games-based [literacy] learning, it would make sense to communicate with classroom teachers in order to ascertain how important and sustainable this topic might be. It likely will be worthwhile to speak with researchers in this area in an attempt to establish your role, affect, positionality, and, above all, humanness with respect to the topic of interest.

Whenever possible, contrary to advisors/supervisors who encourage students to rush through their dissertations by selecting a topic with little or no sustainability so that they can “just get it [their dissertation/thesis] done,” I encourage doctoral students to choose their dissertation/theses very carefully so that they can build on their work either as a researcher or practitioner—depending on their selected path after graduation. Indeed, as noted previously, a well-thought out dissertation should yield at least four published works, regardless of the genre (Frels & Onwuegbuzie, 2016). Thus, selecting a dissertation/thesis carefully provides a student with a good head start on the way to becoming an impactful scholar. Also, whenever the opportunity arises (e.g., through mentorship), I encourage doctoral students to author/co-author at least one published work before they graduate. Not only will this provide them with [much needed] confidence to negotiate their dissertation journey, but because less than 5% of students become published authors before they graduate, doing so makes them even more marketable in the job market. Interestingly, I have seen a \$10,000 difference in salary offered by a college dean of the same institution between two candidates—one with multiple publications and the other with no publications. And on the topic of student scholars, I am proud to announce that Dr. Eunjin Hwang, *RITS* editorial assistant and production editor, had secured the publication of 15 works—that include eight journal articles and three book chapters—by the time that she had graduated. Thus, she is well on her way to becoming a prolific and impactful scholar!

Immerse yourself with the topic. Once you have finalized selection of a topic that is needed,

new or emerging, and sustainable, it is essential that you immerse yourself with it. That is, you should familiarize yourself as much as you can with your selected topic, including the origin, the antecedent(s), the history, the development, and the (potential) future direction(s) of the topic. The more familiar you are with the topic, the more you will be able to identify the gaps in our knowledge base and to determine your niche and scholarly vision.

Aim high. Presenting your selected topic is important. However, by itself, it is not sufficient. Over the years, I have known numerous faculty members who presented a great topic at a conference or another venue. However, for one reason or another, they never ended up attempting to get their presentations published. Although presenting a topic is an important step in the process of making an impact on the field, no matter how many times the topic is presented and no matter how prestigious the venue is, presenting a topic orally or virtually does not meet a broad audience. Indeed, often times, at worst, presenting a topic might only reach a handful of audience members, and, at best, scores of consumers. However, if you did not go further than presenting your topic, then only those who were fortunate enough to attend your presentation would be privy to your assumptions, ideas, beliefs, propositions, theories, schemas, models, hypotheses, findings, interpretations, conclusions, or the like. Thus, to reach a broader audience, you must get it published in some form.

However, to maximize your impact to the field, it is not sufficient to publish in *any* journal. Rather, you should aim for journals with the broadest readership. And, often, journals with broad readership often are those with high impact factors and low acceptance rates. Also, you want to avoid the situation wherein you submit a good manuscript with a unique idea to a low-tier journal (e.g., low or non-existent impact factor). And if you have never submitted a manuscript to a journal with a high impact factor, I suggest that you invite one or more co-authors who have done so. The nice aspect of collaborating with an experienced scholar is that not only do you obtain the benefit of their publishing experience and their name recognition but also, as lead author, you would receive the most credit among the authorship team, thereby maximizing your research productivity capital.

Write well. Once you have selected a journal that will maximize the impact of your topic, in order to increase your chances of meeting with success when you submit your manuscript to that journal, it is imperative not only that you write it well, but also that you write it in an *exceptional* manner. This exceptionality includes producing a manuscript that is as free from writing errors (i.e., grammatical errors, style guide errors, formatting errors) as possible. Again, I refer you to our editorials that

provide evidence-based guidelines for writing with discipline.

Don't give up on your topic. I have learned from personal experience that the more innovative the idea, the more difficult it can be to get it published—at least initially. Indeed, perhaps contrary to conventional wisdom, editors of the top-tiered journals often are the most resistant to publishing manuscripts that depart from the status quo. As an example, when I first co-authored manuscripts in the area of foreign language achievement (i.e., second language acquisition) and foreign language anxiety, most of the articles in this area were published in top Canadian journals. In fact, at the time, this dominance of Canadian-based publications in this area prompted Skehan (1991, p. 284) to declare, "there is considerable scope to investigate different contextual circumstances (outside Canada!)" [emphasis in original]. And after experiencing several of our manuscripts submitted to Canadian journals being rejected (that included hard-hitting comments from reviewers of these journals such as "I did not read past the Method section" and "This is the second time that I am reading this manuscript and I still do not like it!"), we began submitting manuscripts not only to non-Canadian journals but also to non-second language acquisition journals such as journals representing the fields of education and psychology. It was only then that my co-authors and I started to experience success in publishing in this area. Ironically, after publishing in these journals and building up a body of work in this area, when we returned to submitting manuscripts to Canadian journals, our fortunes with these journals were reversed and thus began a series of publications in Canadian journals. This brings me to endorse the useful strategy of considering alternative journals for foundational publications. As an even more compelling example, as described by Dr. Newman in his Centurion article, he and his co-author and wife, Carolyn Benz (Ridenour) had to wait 13 years before their mixed research textbook written in 1985 finally was accepted in 1998!

As a third example, in his Centurion article, Dr. Newman described an experience that I had in the early 2000s with a mixed research-based manuscript that was rejected numerous times:

He told me that several years ago he wrote an article that he thought was making a valuable contribution to the field. His journal of choice rejected it. Taking the reasons given for rejection into consideration, he rewrote and submitted it to another journal that also rejected it. This process of submission and rejection happened **15 times** before he found a home for his article. He was not dissuaded because he believed in the value of what he had to say. (p. 15) [emphasis in original]

After being rejected 15 times from Tier-1 journals mostly because many of the reviewers were anti-

mixed research (based on comments such as "the author is operating under the assumption that quantitative and qualitative research cannot be mixed. This could not be further from the truth."), I realized that I needed help in getting this manuscript published in a reputable journal. In particular, I wanted this article to be published in the journal *Educational Researcher* because it is one of AERA's flagship journals and has a broad readership. Therefore, after examining the publication patterns of leading mixed researchers, I determined that Dr. Burke Johnson had published in *Educational Researcher*. (This brings me to endorse the useful strategy of selecting carefully co-authors who will help promote your research/scholarship agenda.) It just so happened that a few weeks later, at the AERA conference, I approached Dr. Johnson, and asked him to co-author my manuscript and help to revise it to a point where it was ready for submission to *Educational Researcher*. Further, I asked him to serve as lead author as a means to ensure that he would give the manuscript high priority. I learned so much from Dr. Johnson about how to write methodological articles for top journals, such as anticipating (potential) criticisms of the path of argumentation and addressing them beforehand.

Anyway, after revising the original manuscript and submitting it to *Educational Researcher*; and after receiving a revise and resubmit editor decision with extensive revisions, we were able to revise it successfully—yielding a publication in *Educational Researcher*, namely, Johnson and Onwuegbuzie (2004). And, at the time of writing, it is still the most read article ever published in *Educational Researcher* (having this distinction since its publication in 2004) and, currently is the fifth most cited *Educational Researcher* article ever, with more than 7,000 citations. If I had not persevered with this manuscript—even if I had given up after the 15th rejection—its impact would never have been realized. Now although this is a unique outcome for a manuscript, it serves to illustrate the importance of believing in your idea and having confidence that it will eventually impact the field, as well as developing a *thick skin* that prevents one or more rejections from derailing your scholarly vision. Indeed, I am inspired by famous authors who experienced numerous rejections before they experienced success. To present just a few of the many examples that I could provide, the book *Harry Potter and the Sorcerer's Stone* was rejected 12 times and J. K. Rowling was told "not to quit her day job"; the book *Gone with the Wind* by Margaret Mitchell was rejected 38 times before it was published; Anne Frank's *The Diary of a Young Girl* was rejected 15 times before it was published; *Carrie* by Stephen King was rejected 30 times before it was published; and *Zen and the Art of*

Motorcycle Maintenance by Robert M. Pirsig was rejected 121 times before it was published. So, have confidence and belief in your ideas and never give up!

Stay focused on the topic. In order to make an impact in the field, unless you can produce the equivalent of the Salk vaccine in a single study, it is very unlikely that you can make an impact to the field with a single study. Rather, more than likely, you will need to produce a body of work in the same important area to make an impact. Therefore, rather than looking to produce the “magic bullet” article, it is better for you to plan to produce a focused body of work. To this end, I suggest that you do not restrict yourself to one genre of work but, instead, diversify as much as possible so that you can maximize your potential audience. Therefore, in addition to authoring/co-authoring journal articles, you should consider producing works of other genres such as books, book chapters, and monographs. In particular, I suggest that you use Web 2.0 tools to reach an even wider audience, namely, a digital audience. As an example, after writing our APA errors article, wherein we identified the 60 most common APA errors (Onwuegbuzie, Combs, et al., 2010), we were invited by members of APA to write a blog (Onwuegbuzie, Slate, Combs, & Frels, 2011), which was posted on APA’s blog post, APA’s Twitter, and APA’s Facebook to more than 135,000 users from 177 countries. Other Web 2.0 tools that you may consider using include Internet-based social networking website services for academic and researcher that authors can use to share their works and to ask and to answer questions, such as ResearchGate (<http://www.researchgate.net>), which is a website of more than 4.5 million researchers (Talyor, 2014), and Academia.edu with more than 13 million registered researchers/academics who have contributed more than 3 million unique visitors each month (Onwuegbuzie & Frels, 2016).

Another way of staying focused is by contributing to special issues on your topic. To this end, I suggest that you search to ascertain whether your topic has been the focus of any calls for special issues in journals. A useful format for searching for special issues in a certain area is as follows:

TOPIC NAME and JOURNAL and “SPECIAL
ISSUE”

Finally, whenever I get the chance, especially at conferences, I arrange to meet with one or more textbook acquisition editors. (For example, recently, while I was in London, I had nice lunches separately with Hannah Shakespeare [Routledge] and Mila Steele [SAGE Publications]—paid for by their respective publishing companies—where I was able

to discuss several ideas with them.) Such meetings give authors the opportunity to explore ways (e.g., textbook author, textbook editor, handbook editor) to highlight their topics further.

Evolve as the topic evolves. If you have selected a topic that is sustainable, then it will evolve over time. As such, it is important to evolve with the topic. For example, if your topic is on games-based learning, then as videogames evolve, you should make adjustments to keep your research relevant. If, for example, we plot the landscape of the Centurions, we will see that they all evolved as their topics evolved. In fact, in many instances, they were responsible for the evolution of the topic. To ensure that you stay apprised with your topic’s evolution, I suggest that you maintain dialogue with stakeholders.

Contact leaders in the field. As I stated before, securing a publication is a great accomplishment. However, rather than seeing a publication as the *end* of the scholarly process, you should see it as the *beginning*. Specifically, publication marks the beginning of the time when you share your work. Now regardless of the genre of your work (e.g., empirical, conceptual, theoretical, and methodological), you should have conducted a comprehensive literature review. Interestingly, if you had followed the advice that Dr. Frels and I give in our literature review book of interviewing or communicating directly—either formally or informally—with some of the leading and/or prolific authors whom you have identified during the course of your literature review (Onwuegbuzie & Frels, 2016), you should already have established some form of professional relationship with these authors. Thus, it would be a natural progression of events for you to share your newly published work with them. By doing this, you ensure that these leading/prolific authors are cognizant of your work, thereby increasing the chances that they will cite your work in their future works, and, in turn, increase (a) the impact of your work and (b) the chances that they will offer/agree to collaborate with you in the future.

I have had the pleasure in participating in several panels at conferences with Centurion Dr. Bruce Thompson (e.g., AERA conference), where we provided tips for publishing. I recall one excellent tip of the many excellent tips that Dr. Thompson provided that provides a useful way to increase the impact of an author’s newly published work. Specifically, Dr. Thompson advised that when published, authors should examine the reference list of their work and send their work to key authors in the reference list. And following Dr. Thompson’s advice myself has led to me having the pleasure of co-authoring works with numerous prolific scholars. And before you ask “What is the point of contacting them because they will never respond?,” I would like to bring to your attention the fact that, in my

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informal survey of hundreds of workshop participants who have contacted prolific/famous authors over the years, they received a (positive) response from them at least 95% of the time!

I encourage you strongly not to be afraid to contact *any* potential consumer of your work. However, prolific or famous they are. People with extremely high profiles with whom I have shared my work include (a) all 32 NFL coaches, (b) Bill Gates, and the late President Nelson Mandela. With respect to the former, I sent my aforementioned NFL articles (i.e., Onwuegbuzie, 1999, 2000c) to all the NFL coaches because I believed that they would benefit from it and because at the time of writing—more than 16 years ago—NFL coaches did not have access to the data analytics tools that they have today. With regard to Bill Gates, I sent him our article on readability as an important predictor of the quality of a manuscript (Onwuegbuzie, Mallette, et al., 2013). With respect to the late President Nelson Mandela, when I was invited to co-deliver, with my late best friend Dr. Christine E. Daley, a keynote address entitled, “Myths surrounding racial differences in intelligence: A statistical, sociological, social psychological, and historical, critique of the Bell Curve,” I invited the then President Nelson Mandela to attend our keynote address. He replied to me by stating that he very much liked to attend the address but could not do so because he would be out of the country on an official trip at the time. Notwithstanding, President Mandela was aware of my attempt to promote social justice in South Africa. As Geoffrey Chaucer, father of English Literature, once declared, “Nothing ventured, nothing gained”!

Final Thoughts

Earlier in this article, I provided a 30-step meta-framework for getting an article published. Most of these steps—especially the first 24 steps—are pertinent regardless of the work (e.g., article, book chapter, book). Even if you find my discussion of only one of these steps or even part of a step helpful, then the scores of hours that I have spent writing this article would have been worthwhile. My next step now is to maximize the impact of this article using some of the advice that I proffered earlier. After all, this is what my late best friend, Dr. Christine E. Daley would have expected!

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Appendix A Sample Cover Letter Submitted with Initial Manuscript

Letterhead Address

Date

Editor's name
Journal Name
Address

Dear Editor,

A Microsoft Word file of the manuscript entitled, "xxx" (Provide Manuscript Number) is attached for consideration for publication in xxx. In consideration of xxx taking action in reviewing and editing the submission, the authors undersigned hereby transfer, assign, or otherwise convey all copyright ownership to xxx in the event such work is published in xxx.

This article or its essence has not been accepted or published previously and is not under simultaneous consideration for publication elsewhere. In addition, the research study conforms to principles 6.06-6.20 of the "Ethical Principles" (APA, 2010) on the treatment of participants.

Our article should be of interest to researchers, statisticians, research methodology instructors, and others, and we would like very much for xxx to be the venue for disseminating this information.

Sincerely,

Name of Corresponding Author, Qualifications
Title
Affiliation
Email Address

Enclosure

Appendix B Sample Email Letter of Inquiry to Determine Status of Manuscript

Dear Dr. xxx,

I hope that you are well.

The purpose of this e-mail is to inquire about the status of our manuscript entitled, "xxx" (Insert Manuscript Number), which was submitted for consideration for publication on XXX. Any information you can provide will be much appreciated.

I look forward to your response.

Warmest regards,

Anthony J. Onwuegbuzie, Ph.D., F.S.S., P.G.C.E.

Appendix C Sample Letter Responding to Editor's Rejection Decision

Dear Dr. XXX,

Thank you for your editorial decision. Although we are disappointed that our manuscript was rejected, my coauthors and I appreciate your time and that of your reviewers in reviewing our manuscript.

Warmest regards,

Tony Onwuegbuzie

Anthony J. Onwuegbuzie, Ph.D., P.G.C.E., F.S.S.
Professor, Department of Educational Leadership,
Sam Houston State University
Distinguished Visiting Professor, University of
Johannesburg
Co-Editor, *Research in the Schools*
Editor-in-Chief, *International Journal of Multiple
Research Approaches*
Licensed Secondary School Teacher
*Mixed Methods International Research
Association*, President (www.mmira.org)

Appendix D
Cover Letter Submitted with Revised Manuscript

Editor

We appreciate the editor’s thoughtful suggestions.

Date

(1) The editor requested, “Please ask the author to move the section on confidence intervals for the economic tests to an appendix, suitably signalled in the main text.” This is an excellent suggestion. We have created an Appendix and have moved the two sections on confidence intervals.

Ref: xxx

Editor’s name
Name of Journal
Address

(2) The editor requested the following: “Please ask the author to define and illustrate clinical significance and practical significance, including drawing a clear distinction between them, where pertinent with reference to literature.”

Dear Editor,

Thank you for inviting us to revise and to resubmit our manuscript entitled, “xxx” (Provide Manuscript Number) for publication in xxx. Attached is our resubmission.

We thank the editor for asking us to clarify this relationship. As a result, we modified the text, inserting a section that includes definitions and limitations of practical, clinical, and statistical significance. We included statistical significance in this section to keep it balanced.

We have attempted to address all of the comments. Attached are descriptors of what we have changed. We are hopeful that we have corrected and clarified to the extent that the manuscript is ready for publication. Because of the suggestions made, we believe that our manuscript has been strengthened.

Sincerely,

(3) The editor asked us to that “make very much more explicit how economic significance is different from clinical and practical significance, so that, for example, it could not be seen as a sub-subset of clinical significance.” We agree that this is important to make this differentiation, and hope that the definitions and limitations sections will clarify this. Furthermore, we have added the paragraph below to the conclusion section.

Name of Corresponding Author, Qualifications
Title
Affiliation
Email Address

Enclosure

[Second page of Letter.....]

A Summary of Changes to the Manuscript

“Title of Manuscript” (Provide Manuscript Number)

Many thanks to the reviewers and editor for their excellent suggestions. We appreciate the diligent efforts of each reviewer and the editor and believe that their comments have helped to make our original manuscript much stronger. Although a few of the comments seemed to suggest simply further reflection, most either stated or implied specific revisions, and in nearly all of these cases we have complied. In the few instances in which we did not comply with the recommendations, we have provided a rationale for deciding against making the suggested change. We have listed below the ways in which we addressed the suggestions.

Furthermore, economic significance differs from the three existing types of significance in three major aspects. First, economic significance is deterministic in its results; the results are based on behaviors or actions. Conversely, statistical significance is based on probabilities. Second, economic significance is reported in understandable language of monetary sums, whereas practical significance typically is represented in standard deviation units, which can be difficult for many consumers to understand. Finally, economic significance reflects the objectives of the researcher(s)

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and/or the stakeholder(s), whereas clinical significance is based on the subjective experience(s) of the person(s) included in the study.

Reviewer 1

We are glad that the reviewer believes that our manuscript “makes a very useful contribution to the research and evaluation field” and “is very timely, clear, to the point, well argued and of a high quality, and the argument about the need for economic significance, coupled with how to calculate it, is well placed and the case is made persuasively.”

- (1) The reviewer states that “The paper is comparatively silent on the operationalization of important matters such as utility (p. 15), and it is not enough to mention ‘the value that the people involved place on the program’, as this skirts the issue”. With all due respect to the reviewer, without using real data, we are unable to operationalize further the concept of utility. As we noted in our paper,

The ranges of utility will change depending on the situation and the value that the people involved place on the program or intervention. If the people involved believe that the utility is very important, but not extremely important, they might change the ranges of the CU ESI. (p. 20)

Thus, as much as we would like explicitly to provide cut points for the CU ESI, we are unable to do so.

- (2) The reviewer states “*estimating* the amount of utility as the basis for subsequent analysis (p. 15) is weak and this needs to be addressed to make it firmer and more rigorous; even though the paper acknowledges this problem (p. 19) the solution is not adequately addressed. Similarly operationalizing the *worth* of an intervention (p. 18) needs to be unpacked more concretely, as the same issue applies here as for the utility issue”. With respect to estimating the utility, previously we stated that “Weaknesses of the CU ESI include that it can be very difficult to estimate consistent and accurate measures of usefulness, especially across people and different populations.” In an attempt to address this problem, as recommended by

the reviewer, we inserted the following: “Therefore, it is imperative that researchers assess the score reliability (e.g., internal consistency, test-retest reliability) and validity (i.e., content-related validity, criterion-related validity, construct-related validity) of all measures of utility” (p. 22).

- (3) The reviewer states “the definition of economic significance as ‘economic value . . .’ (p. 8) is imprecise, i.e. the reader needs to have made very clear what constitutes ‘economic value’, as, otherwise, the whole definition, as it stands, is a tautology.” It is our belief that economic value changes from situation to situation. What constitutes value in one situation might be very different in another. We assume economic significance will be applied in many areas, thus, we cannot explicitly define “economic value.”
- (4) We agree with the reviewer that “it would be helpful to have a worked example of the cost-utility analysis (p. 15) and the nine steps on page 20 (even though the steps are explained subsequently, a worked example would clarify the matters), as this would address, in part, some of the concerns about the problems of operationalizing nebulous terms such as ‘worth’, ‘value’, and ‘estimates’.” However, we have chosen not to provide a worked example due to our adding approximately 6 pages addressing the definitions and limitations of clinical, practical, and statistical significance. Adding more to address this would significantly increase the length of the manuscript. In any case, such a worked example would involve the application of some of the mathematical formulae that we provided, and, as noted by Reviewer 2, “The paper would be better to focus on the meaning of each approach and its pros and cons in a way that all readers can appreciate”.
- (5) The reviewer stated that “step four (p. 20) is probably the heart of the difficulty of measuring economic significance, and, even though it is addressed on pages 21-2, this needs to be addressed in greater detail for the reader”. We agree that Step 4 is at the “heart of the difficulty of measuring economic significance.” As such, we provided more detail, as follows:

- In addition, the team should decide for how long it should take to measure each outcome. Further, the data collectors pertaining to each outcome should be identified. Most importantly, the team should determine how to maximize the integrity and fidelity of the data collection process. (p. 27)
- (6) The reviewer stated “it is disingenuous to mention qualitative data (e.g. p. 22) as such data would have to be converted into a metric; further surely it is only ratio level data that could be used (p. 22); to talk of the other three scales is misleading; this is probably just a matter of more careful phrasing in the paper.” With all due respect to the reviewer, we disagree strongly that qualitative data should not be mentioned. While we agree that qualitative data would have to be converted into a metric, this does not stop qualitative data from being collected. For example, mixed methods researchers refer to the concept of “quantitizing,” in which qualitative data are converted into numerical codes that can be represented statistically. As stated by Sandelowski (2001, p. 231), in quantitizing, qualitative data are “numerically represented, in scores, scales, or clusters, in order more fully to describe and/or interpret a target phenomenon.” Also, Boyatzis (1998, p. 129) referred to the counting of themes as “quantitative translation.” Thus, the collection of qualitative data can play an important role in deriving measures of economic significance. For example, researchers could interview participants regarding their perceptions of the utility of the outcome, and then they could quantitize these qualitative data. (For more information about quantitizing data, please see Onwuegbuzie & Teddlie, 2003.) Thus, we have not removed our mention of qualitative data on page 22. Further, we disagree that “it is only ratio level data that could be used.” For example, test score data represent *interval* data. Also, it is not unusual for teachers to rank their students on some outcome. Additionally, as noted previously, nominal (e.g., qualitative) data could be collected. Therefore, we have retained the following question, which now appears on page 27, “What scales of measurement should be used (i.e., nominal, ordinal, interval, ratio)?”
- (7) The reviewer stated that “the paper is marked by clarity and singularity on unclear and complex matters; this needs to be acknowledged, i.e. the practical realities of measuring multi-dimensional phenomena in comparatively simple metrics may misrepresent the complexity of the phenomena under consideration; the paper needs to justify doing this conceptually as well as practically”. To be honest, we are at a complete loss as to how to address this recommendation. We believe that we have pointed out several limitations of the ESIs, which should caution readers that these indices “may misrepresent the complexity of the phenomena under consideration”. However, isn’t this the case with any index? Even the most complex quantitative techniques such as Structural Equation Modeling (SEM) and Hierarchical Linear Modeling (HLM) “may misrepresent the complexity of the phenomena under consideration.” This does not mean that SEM and HLM cannot play an important role in aiding our understanding of phenomena. And, so it is with ESIs. At the same time, we would like to think that we have “justif[ied] doing this conceptually as well as practically”. Indeed, the reviewer’s statement here appears to contradict his overall assessment of our paper that “the argument about the need for economic significance, coupled with how to calculate it, is well placed and the case is made persuasively.” As such, we did not feel that we were able to address these comments without more explicit directions.
- (8) The reviewer stated that “The ‘summary and conclusion’ section is too long, and repeats earlier material. In fact some of the material could be better placed in the introductory section to the whole paper (suitably downsized), leaving this section only for a very short conclusion, maybe retaining the second main paragraph on page 26 (amongst others) here. The reference to changes in the APA Manual should be excised, though the reference to reporting indications of confidence intervals should be retained.” With all due respect to the reviewer, we disagree that “some of the [summary] material could be

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better placed in the introductory section to the whole paper.” Because our paper is long, containing 40 pages and discussing several issues, we believe strongly that a summary is justified. Indeed, our summary only contains three paragraphs (1.56%) and the conclusion contains four paragraphs (2.08%), which we believe are reasonable for an article that contains 192 paragraphs. Also, respectfully, we disagree that “the reference to changes in the APA Manual should be excised” because we believe strongly that APA should not only focus on statistical significance and practical significance, but also on economic significance. The APA manual represents a powerful voice of change. Thus, including one or more statements in the APA manual that recommend the use of ESIs when appropriate offers an extremely effective way of promoting ESIs.

Reviewer 2

We are pleased that the reviewer believes, “The author is quite correct in stating that cost is hardly ever stacked up against purported benefit in educational research. For that reason alone, I believe that the paper has a strong message and should be published.”

- (1) We agree with the reviewer’s suggestion to “that some of the mathematics, perhaps all of the section on confidence intervals for the economic tests, is moved to a subsequent appendix. The paper would be better to focus on the meaning of each approach and its pros and cons in a way that all readers can appreciate, leaving us nerds to look at the appendix as and when needed.” We have moved the sections on confidence intervals into an Appendix.

Reviewer 3

We are glad that the reviewer gleaned that, “This text is well composed, clearly written and carefully structured. From a statistics perspective, the paper is sound and robust. The points made about significance and power, while not new, are exact and well stated.”

- (1) The reviewer suggested, “Clinical significance and practical significance need to be defined and illustrated, including the distinction between them (and with references to the literature).” This is a great suggestion. As stated

above, we have added an entire section defining, illustrating, and discussing the limitation of clinical, practical, and statistical significance. Furthermore, we have added a paragraph that discusses the differences between economic significance and the existing three types of significance.

- (2) We agree with the reviewer that “Economic significance needs to be defended as separate from clinical and practical significance. It could be argued that it is a sub-set of clinical significance. This requires close examination.” As noted above, we have included the sections detailed above to clarify these issues.

ANTHONY J. ONWUEGBUZIE

Appendix E
Letter from Editor Responding to Revised
Manuscript and Cover Letter

From: xxx
Date: xxxx
To: 'xxx@xxx'
Subject: xxx

Dear Author(s),

Thank you very much for the reworked paper for the journal, and for the great care you have taken to complement this with such a helpful letter of commentary and response. I am pleased to say that this paper has now been accepted as is currently stands, and we will look forward to publishing it. It reads well and the matter is important! In response to those points about which you felt a little uncomfortable about reworking, in light of what you have written in your letter you have contextualized these a little more and made it clearer why these were smaller issues than originally envisaged, and, as you say, opening them up to fuller clarification and explanation would have made the paper not only far too long but would have given undue emphasis to what are minor matters, so we accept with thanks your very helpful feedback and comments on these.

So, we hope that you are pleased with this acceptance and that this will encourage you to consider the journal again.

With thanks and very best wishes.

Yours sincerely,

xxx, Editor
Journal Name

Appendix F
Cover Letter that Accompanies Accepted
Manuscript

Dear xxx:

Thank you for accepting our fourth revised article entitled, "xxx" (*MS # xx*), for publication in *xx*. Enclosed is our submission (attached Word 2000 file) of our "new corrected" paper and the revised 88-word paragraph on the practice implications of our work. We have also enclosed a hard copy of the paper, the implications paragraph, and a "clean" copy of Table 1.

All editing recommendations have been made. In particular, we have inserted the departmental affiliations of all authors (including the city and state).

We look forward to seeing our manuscript in print. As always, thank you for your time and energy.

Sincerely,

Anthony J. Onwuegbuzie, Ph.D., F.S.S., P.G.C.E."

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Appendix G
Cover Letter Submitted with Corrections to the
Galleyproofs

[Second page of Letter.....]

Descriptors of Changes Needed

Date

Dr. xxx
Production Editor
Address

Dear Dr. xxx,

As requested, we have read the galley proofs pertaining to the article entitled, "xxx" (Manuscript #), which is scheduled to appear in xx.

We have specified below the changes ($n = 3$ sets) in order to eliminate any misunderstanding that might arise from any misinterpretation of handwriting that occurs in the galley proofs.

Thank you for your efficiency. We look forward to seeing our manuscript in print.

Sincerely,

Name of Corresponding Author, Qualifications
Title
Affiliation
Email Address

Enclosure

(1) Page 1 Line 6 of Introduction Section:
Please change "the number of critics of NHST have grown" to "the number of critics of NHST has grown."

(2) Page 12, 10 Lines from Bottom: Please change "each of the indices are similarly weighted" to "each of the indices is similarly weighted".

(3) Page 15, Line 17 of "Summary and Conclusions" section: Please change "none of these indices are adequate" to "none of these indices is adequate".

Responses to Copyeditor Queries

1. As requested, we have double-checked the renumbered equations and find them to be OK. Thanks.
2. As requested, we have attached Table 1.
3. The updated references for xxx (in press) is as follows:

Xxx (2005). Authors' names. (Publication Year). Title. *Journal Name*, *Volume Number*, Page numbers.