SEVENTH EDITION

7

PUBLICATION Manual

of the American Psychological Association

THE OFFICIAL GUIDE TO APA STYLE

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The precursor to the Publication Manual of the American Psychological Association was published in 1929 as a seven-page article in Psychological Bulletin describing a "standard of procedure, to which exceptions would doubtless be necessary, but to which reference might be made in cases of doubt" (Bentley et al., 1929, p. 57). Since then, the scope and length of the Publication Manual have grown in response to the needs of researchers, students, and educators across the social and behavioral sciences, health care, natural sciences, humanities, and more; however, the spirit of the original authors' intentions remains.

To address changes in scholarly writing and publishing since the release of the sixth edition, we consulted many professional groups and experts (each recognized individually in the Editorial Staff and Contributors list). We thank members of the Publication Manual Revision Task Force for their vision for the manual and for ensuring that our guidance reflects current best practices. We also thank the APA Working Group on Quantitative Research Reporting Standards for updating the original journal article reporting standards (JARS) for quantitative research and the APA Working Group on Reporting Standards for Qualitative Research for their groundbreaking work in establishing the first set of qualitative and mixed methods JARS in APA Style. We are indebted to members of the APA Public Interest Directorate committees and other advocacy groups who revised the bias-free language guidelines on age, disability, race and ethnicity, sexual orientation and gender diversity, and socioeconomic status. We are also grateful to the reviewers who provided valuable perspectives while representing psychology, nursing, education, business, social work, ethics, and writing instruction.

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INTRODUCTION

Excellence in writing is critical for success in many academic and professional pursuits. APA Style is a set of guidelines for clear and precise scholarly communication that helps authors, both new and experienced, achieve excellence in writing. It is used by millions of people around the world in psychology and also in fields ranging from nursing to social work, communications to education, business to engineering, and other disciplines for the preparation of manuscripts for publication as well as for writing student papers, dissertations, and theses. The Publication Manual of the American Psychological Association is the authoritative resource for APA Style, and we are proud to deliver its seventh edition.

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Why Use APA Style?

APA Style provides a foundation for effective scholarly communication because it helps authors present their ideas in a clear, concise, and organized manner. Uniformity and consistency enable readers to (a) focus on the ideas being presented rather than formatting and (b) scan works quickly for key points, findings, and sources. Style guidelines encourage authors to fully disclose essential information and allow readers to dispense with minor distractions, such as inconsistencies or omissions in punctuation, capitalization, reference citations, and presentation of statistics.

When style works best, ideas flow logically, sources are credited appropriately, and papers are organized predictably and consistently. People are described using language that affirms their worth and dignity. Authors plan for ethical compliance and report critical details of their research protocol to allow readers to evaluate findings and other researchers to potentially replicate the studies. Tables and figures present data in an engaging, consistent manner.

Whether you use APA Style for a single class or throughout your career, we encourage you to recognize the benefits of a conscientious approach to writing. Although the guidelines span many areas and take time and practice to learn, we hope that they provide a balance of directiveness and flexibility and will eventually become second nature.

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APA Style for Students

The Publication Manual has long been an authoritative source for scholarly writing, and this edition provides more targeted guidance and support for students. All students, no matter what career they pursue, can benefit from mastering scholarly writing as a way to develop their critical thinking skills and hone the precision and clarity of their communication.

Most guidelines in the Publication Manual can be applied to both student papers and professional manuscripts. The manual also has elements specifically designed for students, including a student title page; guidance on citing classroom or intranet sources; and descriptions of common types of student papers such as annotated bibliographies, response papers, and dissertations and theses. Journal article reporting standards (JARS) are intended primarily for authors seeking publication but may be helpful for students completing advanced research projects.

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Utility and Accessibility

We have created the seventh edition of the Publication Manual with the practical needs of users in mind. Within chapters, content is organized using numbered sections to help users quickly locate answers to their questions. This ease of navigability and depth of content mean that the manual can be used as both a reference work and a textbook on scholarly writing.

This edition promotes accessibility for everyone, including users with disabilities. In consultation with accessibility experts, we ensured that the guidelines support users who read and write works in APA Style through a variety of modalities, including screen readers and other assistive technologies. For example, we present a streamlined format for in-text citations intended to reduce the burden of both writing and reading them. We provide guidance on how to use adequate contrast in figures to meet Web Content Accessibility Guidelines (Web Accessibility Initiative, 2018). We also support the use of a variety of fonts and default settings in common word-processing programs, meaning that users need to make fewer adjustments to their systems to be ready to write in APA Style. Above all, our aim is to support the many ways in which people communicate. We encourage authors to be conscientious and respectful toward both the people about whom they are writing and the readers who will benefit from their work.

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What's New in the Seventh Edition?

Brief descriptions of new and updated content are provided next on a chapter-by-chapter basis. For a more comprehensive overview of content changes, see the APA Style website (https://apastyle.apa.org).

Chapter 1: Scholarly Writing and Publishing Principles

Chapter 1 addresses types of papers and ethical compliance.

- New guidance addresses quantitative, qualitative, and mixed methods articles as well as student papers, dissertations, and theses.
- Information on planning for and ensuring ethical compliance reflects best practices.
- Guidance on data sharing, including in qualitative research, reflects open practice standards.

Chapter 2: Paper Elements and Format

Chapter 2 is designed to help novice users of APA Style select, format, and organize paper elements.

- The title page is updated for professionals, and a new student title page is provided.
- For all papers, the byline and affiliation format on the title page aligns with publishing standards.
- The author note includes more information, such as ORCID iDs, disclosure of conflicts of interest or lack thereof, and study registration information.
- The running head format has been simplified for professional authors and is not required for students.
- Font specifications are more flexible to address the need for accessibility.
- An updated heading format for Levels 3, 4, and 5 improves readability and assists authors who use the heading-styles feature of their word-

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processing program.

- Two new sample papers are provided: a professional paper and a student paper, with labels to show how specific elements appear when implemented.

Chapter 3: Journal Article Reporting Standards

Chapter 3 orients users to journal article reporting standards (JARS) and includes tables outlining standards for reporting quantitative, qualitative, and mixed methods research.

- JARS for quantitative research has been significantly expanded and updated (see Appelbaum et al., 2018; Cooper, 2018).
- The updated JARS now cover qualitative and mixed methods research (see Levitt, 2019; Levitt et al., 2018).

Chapter 4: Writing Style and Grammar

Chapter 4 provides guidance on writing style and grammar.

- The singular "they" is endorsed, consistent with inclusive usage.
- More detailed guidance helps writers avoid anthropomorphism.

Chapter 5: Bias-Free Language Guidelines

Chapter 5 presents bias-free language guidelines to encourage authors to write about people with inclusivity and respect.

- Existing guidance on age, disability, gender, racial and ethnic identity, and sexual orientation has been updated to reflect best practices.
- New guidance is provided on participation in research, socioeconomic status, and intersectionality.

Chapter 6: Mechanics of Style

Chapter 6 covers the mechanics of style, including punctuation, capitalization, abbreviations, numbers, and statistics in text.

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- Updated guidance answers a common question: Use one space after a period at the end of a sentence, unless an instructor or publisher requests otherwise.
- Formatting of linguistic examples has changed; quotation marks are now used around examples, rather than italics, to promote accessibility.
- Expanded guidance is provided on the capitalization of proper nouns, job titles, diseases and disorders, and more.
- Guidelines for the presentation of abbreviations address common questions, such as how to include a citation with an abbreviation.
- Guidelines for the presentation of numbers have been updated to be consistent throughout a work (e.g., there is no longer an exception for presenting numbers in an abstract).
- New guidance is given on how to write gene and protein names.
- Updated guidelines allow greater flexibility for lettered, numbered, and bulleted lists.

Chapter 7: Tables and Figures

Chapter 7 presents guidance on creating tables and figures.

- More than 40 new sample tables and figures are presented, in dedicated sections, covering a variety of research types and topics.
- The presentation of tables and figures in text is more flexible (either after the reference list on separate pages or embedded in the text).
- Formatting of tables and figures is parallel, including consistent styles for numbers, titles, and notes.
- The accessible use of color in figures is addressed.

Chapter 8: Works Credited in the Text

Chapter 8 addresses appropriate levels of citation as well as plagiarism, self-plagiarism, and other unethical writing practices.

- In-text citations have been simplified; all in-text citations for works with three or more authors are shortened to the name of the first author plus “et

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al." (except where this would create ambiguity).

- New guidance is provided on how to cite recorded or unrecorded Traditional Knowledge and Oral Traditions of Indigenous Peoples.
- Examples of paraphrasing demonstrate how to achieve clear attribution without overcitation.
- New guidance is provided on how to format quotations from research participants.

Chapter 9: Reference List

Chapter 9 examines the four elements of a reference list entry (author, date, title, and source).

- The number of authors included in a reference entry has changed; up to 20 authors are now included before names are omitted with an ellipsis.
- The presentation of digital object identifiers (DOIs) and URLs has been standardized. Both are presented as hyperlinks; the label "DOI:" is no longer used, and the words "Retrieved from" are used only when a retrieval date is also needed.
- Updated guidance explains when to include DOIs and URLs for works retrieved from most academic research databases as well as from proprietary databases such as ERIC or UpToDate.
- New formatting guidance is provided for annotated bibliographies.

Chapter 10: Reference Examples

Chapter 10 provides more than 100 examples of APA Style references, each with accompanying parenthetical and narrative in-text citations.

- Templates are provided for every reference category.
- References are streamlined; for example, journal article references always include the issue number, and book references now omit the publisher location.
- Audiovisual materials receive expanded coverage, with new examples for YouTube videos, PowerPoint slides and lecture notes, TED Talks, and

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more.

- Social media, webpages, and websites are addressed in new categories. For consistency and ease of formatting, blogs and other online platforms that publish articles are part of the periodicals category.

Chapter 11: Legal References

Chapter 11 presents expanded and updated legal reference examples.

- Guidelines from The Bluebook: A Uniform System of Citation continue to be the foundation for APA Style legal references, with some modifications.
- New, relevant legal reference examples are provided (e.g., the Every Student Succeeds Act).

Chapter 12: Publication Process

Chapter 12 provides guidance on the publication process.

- New content helps early career researchers adapt a dissertation or thesis into a journal article or articles, select a journal for publication, avoid predatory or deceptive publishers, and navigate journal submission.
- Improved guidance on the journal publication process reflects current processes and policies authors need to be aware of when preparing a manuscript for submission.
- New guidance addresses how authors can share and promote their work following publication.

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APA Style Online

The APA Style website (https://apastyle.apa.org) is the premier and authoritative online destination for APA Style. In addition to numerous free resources and instructional aids, it contains supplemental content that is referred to throughout the manual, including additional reference examples, sample papers, and guidance on using color effectively and accessibly in figures.

The JARS website (https://apastyle.apa.org/jars) contains the full repository of information about journal article reporting standards for a wide range of research designs; it is freely available to complement the orienting information in Chapter 3.

The APA Style blog (https://apastyle.apa.org/blog) and related social media accounts will continue to answer questions about and share insights into APA Style with the publication of the seventh edition, providing authoritative content from members of the APA Style team.

Academic Writer (https://digitallearning.apa.org/academic-writer) is APA's cloud-based tool for teaching and learning effective writing. Developed by the creators of APA Style, this product helps both student and professional authors compose research papers and master the application of seventh-edition APA Style.

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Notes to Users

The Publication Manual refers to numerous products and services that are not affiliated with the American Psychological Association but that our readers may encounter or use during the process of research, writing, and publication. The trademarks referenced in the Publication Manual are the property of their respective owners. The inclusion of non-APA products is for reference only and should not be construed as an endorsement of or affiliation between APA and the owners of these products and their respective brands.

Finally, some eagle-eyed users have asked why every aspect of APA Style is not applied throughout this manual. The manual is a published work, whereas the guidelines for APA Style are meant to be applied to manuscripts being submitted for publication or to student papers. Considerations for published works such as this book (e.g., typesetting, line spacing, length, fonts, use of color, margins) differ from those of draft manuscripts or student papers and thus necessitate deviations from APA Style formatting. Also, in this manual—in which we are writing about writing—it is often necessary to distinguish between explanatory text and examples through the use of font, color, and other design elements. Wherever possible, however, we have endeavored to demonstrate APA Style while writing about it and to present the information in a way that is accessible for our many users around the world.

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1

SCHOLARLY WRITING AND PUBLISHING PRINCIPLES

Research is complete only when scholars share their results or findings with the scientific community. Although researchers may post articles on scholarly collaboration sites or preprint servers or share them informally by email or in person, the most widely accepted medium for formal scholarly communication continues to be the published article in a peer-reviewed, scientific journal. Scientific journals contain our primary research literature and thus serve as repositories of the accumulated knowledge of a field.

Students are also important members of the scholarly community. Although most student work is not formally published, by writing papers students engage in critical thinking, thoughtful self-reflection, and scientific inquiry and thereby prepare to make unique contributions to the repository of knowledge. Therefore, student writing deserves the same level of care and attention to detail as that given to professional writing.

In this chapter, we provide important principles that professional and student authors should consider before writing their paper or, in many cases, before embarking on a research study. We begin with overviews of the different types of articles and papers professional and student authors write. This is followed by a discussion of ethical, legal, and professional standards

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in publishing that all authors of scholarly work, regardless of the type of paper they are writing or their level of experience, must be mindful of and abide by. For example, research conducted with human participants or nonhuman animal subjects must be approved by an institutional review board (IRB), institutional animal care and use committee (IACUC), or another ethical committee. Similarly, an author writing about human participants must protect their confidentiality while following best practices for data sharing. Moreover, any written work, from a course paper to a published manuscript, should represent an original contribution and include appropriate citations to the work of others. Thus, scholarly writing and publishing, in all forms, are inherently embedded in and guided by an ethical context.

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Types of Articles and Papers

Many types of articles are published in scientific journals, including quantitative, qualitative, and mixed methods empirical articles and replications. These journal articles report primary, or original, research—that is, research that has not been previously formally published. Theoretical articles and methodological articles do not present research but describe advancements in theories or methods. Journal articles that review or synthesize findings from primary research include literature reviews and quantitative and qualitative meta-analyses. By understanding the characteristics of different types of articles and the types of information they most efficiently convey, you will be able to select an article type that fits your research and to follow the appropriate journal article reporting standards (discussed in Chapter 3). Students may write the same kinds of articles that are published in journals, as well as student papers (including course assignments, dissertations, and theses) not intended for publication in a journal (see Section 1.10). Sample papers are included at the end of Chapter 2 and on the APA Style website (https://apastyle.apa.org).

1.1 Quantitative Articles

In quantitative articles, authors report original, empirical, quantitative research. Quantitative research refers to a set of approaches commonly used in the behavioral and social sciences and related fields in which the observed outcomes are numerically represented. The results of these studies are typically analyzed using methods (statistics, data analyses, and modeling techniques) that rely on the numerical properties of the measurement system. Quantitative research studies use a variety of experimental designs and a range of analytic techniques. Some quantitative articles present novel hypotheses and data analyses not considered or addressed in previous reports of related data. Within the article, authors should describe elements of their study in the first person (see Section 4.16). Researchers who used a quantitative approach should follow the quantitative journal article reporting standards to report their findings (see Sections 3.5–3.12).

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Quantitative articles typically include distinct sections that reflect the stages of the research process and appear in the following sequence:

- **Introduction:** a statement of the purpose of the investigation, a review of the background literature, and an explicit statement of the hypotheses being explored (see Section 3.4)
- **Method:** a full description of each step of the investigation, including details about the materials used and the procedures followed (which should be sufficient to enable replication), a full statement of the research design, statements on the protection of human participants or nonhuman animal subjects and informed consent, and a description (in words and/or a figure) of the flow of participants through the study (see Section 3.6)
- **Results:** data analysis and a report of the findings (see Section 3.7)
- **Discussion:** a summary of the study, including any interpretation, limitations, and implications of the results (see Section 3.8)

Reports of Multiple Studies. Authors of quantitative articles often report the findings of several conceptually linked studies in one manuscript. These authors should make the rationale, logic, order, and method of each study clear to readers. Headings should be used to label each study—for instance, "Experiment 1," "Experiment 2," and so forth. This format organizes the sections and makes them easier to discuss in the manuscript or in later research articles. Method and Results subsections can appear under each study heading. If appropriate, the authors can include a short subsection titled "Discussion" in which they explore the implications of the results of each study, or they can combine the discussion with the description of results under a heading such as "Results and Discussion." Authors should always include a comprehensive general discussion of all the studies at the end of the article, which often has the heading "General Discussion."

1.2 Qualitative Articles

In qualitative articles, authors report original, empirical, qualitative research. Qualitative research refers to scientific practices that are used to generate knowledge about human experience and/or action, including social processes. Qualitative approaches tend to share four sets of characteristics:

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- Researchers analyze data consisting of natural language (i.e., words), researcher observations (e.g., social interactions), and/or participants' expressions (e.g., artistic presentations) rather than collecting numerical data and conducting mathematical analyses. Reports tend to show the development of qualitative findings using natural language (although numbers may be used adjunctively in describing or exploring these findings).
- Researchers often use an iterative process of analysis in which they reexamine developing findings in light of continued data analysis and refine the initial findings. In this way, the process of analysis is self-correcting and can produce original knowledge.
- Researchers recursively combine inquiry with methods that require researchers' reflexivity about how their own perspectives might support or impair the research process and thus how their methods should best be enacted.
- Researchers tend to study experiences and actions whose meaning may shift and evolve; therefore, they tend to view their findings as being situated within place and time rather than seeking to develop laws that are expected to remain stable regardless of context.

Researchers who used a qualitative approach should follow the qualitative journal article reporting standards to report their findings (see Sections 3.13–3.17).

Case Studies and Other Types of Qualitative Articles. A variety of methods are reported in qualitative articles, and the structure of qualitative articles varies depending on the nature of the study. For example, in case studies researchers report analyses or observations obtained while working closely with an individual, group, community, or organization. Case studies illustrate a problem in depth; indicate a means for solving a problem; and/or shed light on needed research, clinical applications, or theoretical matters. Qualitative articles also describe studies with multiple participants, groups, communities, or organizations that identify commonalities and/or differences across these entities. Such research can have a systemic focus, examining the ways in which social processes, actions, or discourses are structured.

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Regardless of the qualitative research approaches they use, when writing reports, authors should carefully consider the balance between providing important illustrative material and using confidential participant data responsibly (see Sections 1.18–1.19 for more on confidentiality; see also Section 1.15). Qualitative reports may be organized thematically or chronologically and are typically presented in a reflexive, first-person style, detailing the ways in which the researchers arrived at questions, methods, findings, and considerations for the field.

1.3 Mixed Methods Articles

In mixed methods articles, authors report research combining qualitative and quantitative empirical approaches. Mixed methods research should not be confused with mixed models research, which is a quantitative procedure, or with multimethods research, which entails using multiple methods from the same approach. Mixed methods research involves the following:

- describing the philosophical assumptions or theoretical models used to inform the study design (Creswell, 2015);
- describing the distinct methodologies, research designs, and procedures in relation to the study goals;
- collecting and analyzing both qualitative and quantitative data in response to research aims, questions, or hypotheses; and
- integrating the findings from the two methodologies intentionally to generate new insights.

The basic assumption of a mixed methods approach is that the combined qualitative findings and quantitative results lead to additional insights not gleaned from the qualitative or quantitative findings alone (Creswell, 2015; Greene, 2007; Tashakkori & Teddlie, 2010). Because there are many ways to design a mixed methods study, the structure of mixed methods articles varies depending on the specific nature of the study and the balance between the two methodologies. Researchers who used a mixed methods approach should follow the mixed methods journal article reporting standards to report their findings (see Section 3.18).

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1.4 Replication Articles

In replication articles, authors report the results of work intended to verify or reproduce findings from previous investigations. The aim of a replication study is to examine whether the conclusions from an earlier study remain the same or similar over variations in the conduct of the original study. There are internal and external forms of replication; only external replications are addressed in APA journal article reporting standards (see Section 3.10). An external replication occurs when researchers obtain a new sample and duplicate, insofar as is possible or desirable, the features of the original study being replicated. New design, measures, and/or data-analysis methods can also be used to test whether a finding has generality beyond the particular situation studied in the original work, but any such variations must be clearly specified in the report.

Researchers conducting an external replication should report sufficient information to allow readers to determine whether the study was a direct (exact, literal) replication, approximate replication, or conceptual (construct) replication. In a direct replication, researchers repeat a study collecting data from a new sample in a way that duplicates as far as possible the conditions of the earlier study. A direct replication is called an exact replication or a literal replication when researchers use procedures that are identical to the original experiment or duplicated as closely as possible (e.g., with variations only in the location of the study and the investigators conducting the study). These forms of replication are useful for establishing that the findings of the original study are reliable. In an approximate replication (or a modified replication), researchers incorporate alternative procedures and additional conditions into the features of the original study; such replications usually contain the original study design along with some additional study features. The purpose of an approximate or modified replication may be not only to replicate a study but also to determine whether some factors not included in the original formulation have an influence on the outcome. In a conceptual replication, researchers introduce different techniques and manipulations to gain theoretical information; it is possible that no features of the initial study are retained. Researchers may use other labels for or descriptions of replications (for further exploration of this issue, see National Academies of Sciences, Engineering, and Medicine, 2019); the descriptions provided in this

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section were adapted from the APA Dictionary of Psychology (https://dictionary.apa.org).

1.5 Quantitative and Qualitative Meta-Analyses

Meta-analysis refers to a collection of techniques in which researchers use the findings from a group of related studies to draw a general conclusion (synthesis) based on the extant research on a topic. Individual participant or subject data are not used in meta-analyses because the data analyzed are at the study level.

Just as the reporting standards for quantitative and qualitative studies vary by study design, those for meta-analyses vary by the particular questions asked in the study and the approaches used to answer those questions. Because the study is the input unit for a meta-analysis, the studies included are provided in the reference list and marked with an indicator that shows they were part of the meta-analysis. This indicator distinguishes studies included in a meta-analysis from other references. For example, in APA Style articles, references used in a meta-analysis are preceded by an asterisk (see Section 9.52).

Quantitative Meta-Analysis. Within quantitative approaches, meta-analyses generally stipulate a technique in which effect-size estimates from individual studies are the inputs to the analyses. Meta-analysis is also used to determine factors that may be related to the magnitude of the outcome in quantitative studies—for example, design factors (e.g., randomized vs. nonrandomized), demographic factors (e.g., percentage of the study sample below the poverty line), and so forth. Meta-analytic reports usually follow the same basic structure as quantitative studies (see Section 1.1) and contain an introduction and Method, Results, and Discussion sections. Researchers who use a quantitative meta-analytic approach should follow the reporting standards for quantitative meta-analysis (see Section 3.12).

Qualitative Meta-Analysis. Within qualitative research, there are a variety of approaches to meta-analysis, including qualitative metasynthesis, metaethnography, metamethod, and critical interpretive synthesis. These approaches often use strategies from primary qualitative analyses to

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synthesize findings across studies. Qualitative meta-analyses can be used to highlight methodological trends, identify common findings and gaps, develop new understandings, and propose future directions for an area of research. Qualitative meta-analytic reports have a structure similar to that of qualitative primary reports, with the addition of a description of the perspectives and situatedness of the authors of the primary works included in the analysis. Qualitative meta-analyses do not entail a singular procedure but rather an aggregating function common to meta-analytic approaches. Qualitative meta-analyses are not to be confused with quantitative reviews, in which authors generate a narrative description of a quantitative literature base. We recommend referring to those studies as literature reviews or narrative literature reviews to avoid confusion with qualitative meta-analyses (see Section 1.6). Researchers who used a qualitative meta-analytic approach should follow the reporting standards for qualitative meta-analysis (see Section 3.17).

1.6 Literature Review Articles

Literature review articles (or narrative literature review articles) provide narrative summaries and evaluations of the findings or theories within a literature base. The literature base may include qualitative, quantitative, and/or mixed methods research. Literature reviews capture trends in the literature; they do not engage in a systematic quantitative or qualitative meta-analysis of the findings from the initial studies.

In literature review articles, authors should

- define and clarify the problem;
- summarize previous investigations to inform readers of the state of the research;
- identify relations, contradictions, gaps, and inconsistencies in the literature; and
- suggest next steps in solving the problem.

The components of literature review articles can be arranged in various ways —for example, by grouping research on the basis of similarity in the concepts

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or theories of interest, methodological similarities among the studies reviewed, or the historical development of the field.

1.7 Theoretical Articles

Theoretical articles draw from existing research literature to advance theory. Theoretical articles present empirical information only when it advances the theoretical issue being explicated. Authors of theoretical articles trace the development of a theory to expand and refine its constructs, present a new theory, or analyze an existing theory. Typically, they point out flaws or demonstrate the advantage(s) of one theory over another. Authors also may examine a theory's internal consistency and external validity. The order of sections in a theoretical article can vary.

1.8 Methodological Articles

Methodological articles present new approaches to research or practice, modifications of existing methods, or discussions of quantitative and/or qualitative data analysis. These articles use empirical data (quantitative, qualitative, or both) only as a means to illustrate an approach to research. Some use simulated data to demonstrate how methods work under varying conditions (e.g., different sample sizes, number of variables, level of nonnormality, size of coefficients).

Methodological articles provide sufficient detail for researchers to assess the applicability of the methodology and its feasibility for the type of research problem it is designed to study. Further, these articles allow readers to compare proposed methods with those in current use. In methodological articles, highly technical materials (e.g., derivations, proofs, data generation, computer code, extensive details of simulations) should be presented in appendices or as supplemental materials to improve overall article readability. When having detailed information (e.g., parameters used in a simulation) is necessary for readers to understand the major points being made, those details should be presented in the text of the article.

1.9 Other Types of Articles

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Additional types of published articles include brief reports, comments on and replies to previously published articles, book reviews, obituaries, and letters to the editor. Authors should consult the editors or author guidelines of individual journals for specific information regarding these kinds of articles.

1.10 Student Papers, Dissertations, and Theses

Although the Publication Manual originated as a guide for authors seeking publication in scholarly journals, it has been widely adopted by academic instructors, departments, and institutions that require students to use APA Style when writing scholarly papers. Students may write the same types of papers that are professionally published (e.g., literature review articles) or assignments that fall outside that scope (e.g., dissertations, theses, essays, response or reaction papers, annotated bibliographies). Likewise, this manual has historically addressed researchers working in the field of psychology; however, students and researchers use APA Style in other fields and disciplines, including social work, nursing, communications, education, and business. Some journals in these fields require APA Style, and others do not. Other field-specific requirements may also apply (e.g., nurses may have to adhere to a nurse's code of ethics rather than a psychologist's code of ethics).

Student assignments commonly written at the undergraduate level include annotated bibliographies, many types of essays, and response or reaction papers. The descriptions that follow are generally representative of these types of papers; check with your assigning instructor or institution for specific guidelines.

- **Annotated bibliographies** consist of reference list entries followed by short descriptions of the work called annotations. Instructors generally set most requirements for these papers, but many APA Style guidelines still apply (see Section 9.51).
- **Cause-and-effect essays** report how specific events lead to particular results or advocate for a specific position. A clear and strong thesis provides a solid foundation for this type of essay. The paragraphs are generally structured by describing each cause and its collateral effect, with logical transitions between them.
- **Comparative essays** compare and contrast two (or more) items with the

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goal of linking disparate items under a central thesis. The paper structure can be organized to focus on Topic 1 and then Topic 2, or the topics may be interwoven.

- **Expository essays** follow a multiparagraph structure (e.g., five paragraphs) and explain or provide information on a specific topic. The paper structure includes an introduction, body, and a conclusion. Evidence should be provided to reinforce the written claims detailed in the paper.
- **Narrative essays** convey a story from a clear point of view and include a beginning, middle, and end. Narrative essays should have a clearly defined purpose and focus and include concise, evocative language.
- **Persuasive essays** are intended to convince readers to adopt a certain viewpoint or take a particular action. They present clear arguments, include logical transitions, and have a similar paper structure to the expository essay.
- **Précis** are concise summaries in students' own words of essential points, statements, or facts from a single work; the length of a précis is typically about a quarter of the length of the original work. The précis structure includes a brief thesis and sections that mirror the sections of the original work, such as Method, Results, and Discussion.
- **Response or reaction papers** summarize one or more works and describe students' personal reactions or responses to them, including how the work or works impacted them, are relevant to their life, and so forth. This type of paper is typically short (e.g., three pages or so). The first person is used in describing personal reactions (see Section 4.16).

Dissertations or theses are typically required of graduate students, but undergraduate students completing advanced research projects may write similar types of papers. Academic institutions or departments have detailed guidelines for how to format and write dissertations and theses, and the requirements and acceptable format vary by discipline. Some dissertations and theses are hundreds of pages long and contain thorough literature reviews and exhaustive reference lists, whereas others follow a multiple-article format consisting of several shorter, related papers that are intended for individual publication. See Section 12.1 for guidance on adapting a dissertation or thesis into a journal article.

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As mentioned in the introduction to this manual, most of the guidelines in the Publication Manual can be applied to student papers. However, because the scope of what constitutes a student paper is broad and flexible, and because students submit papers to their academic institutions rather than to an APA journal, we do not designate formal requirements for the nature or contents of an APA Style student paper. Thus, questions about paper length, required sections, and so forth are best answered by the instructor or institution setting the assignment. Students should follow the guidelines and requirements developed by their instructors, departments, and/or academic institutions when writing papers, including dissertations and theses; these guidelines and requirements may entail adaptations of or additions to the APA Style guidelines described in this manual. We encourage writers, instructors, departments, and academic institutions using APA Style outside of the journal publication context to adapt APA Style to fit their needs.

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Ethical, Legal, and Professional Standards in Publishing

In addition to abiding by standards specific to writing and publishing, authors of scholarly research should also follow ethical standards (e.g., Section 8, Research and Publication, of the APA Ethical Principles of Psychologists and Code of Conduct, hereinafter referred to as the APA Ethics Code; APA, 2017a; see also https://www.apa.org/ethics/code) and broader professional standards when conducting a research study. Moreover, individuals engaged in conducting, analyzing, or reporting any type of research should have acquired the requisite skills and experience to do so competently (e.g., Section 2, Competence, of the APA Ethics Code; see also the Multicultural Guidelines: An Ecological Approach to Context, Identity, and Intersectionality; APA, 2017b).

Ethical and legal principles underlie all scholarly research and writing. These long-standing principles are designed to achieve the following goals:

- ensuring the accuracy of scientific findings,
- protecting the rights and welfare of research participants and subjects, and
- protecting intellectual property rights.

Writers in the social and behavioral sciences work to uphold these goals and to follow the principles that have been established by their professional disciplines. The guidance in this section is drawn from the APA Ethics Code (APA, 2017a), which applies to all APA members regardless of where they publish and contains standards that address the reporting and publishing of scientific data. The APA Ethics Code is not a static document—it is revised over time to reflect shifts or changes in the understanding and conception of the principles of beneficence and nonmaleficence, fidelity and responsibility, integrity, justice, and respect by the scientific community relative to advances in science and technology and evolving cultural norms. Revised or new versions of the APA Ethics Code appear on the APA website after adoption by the APA Council of Representatives.

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Ensuring the Accuracy of Scientific Findings

1.11 Planning for Ethical Compliance

Regardless of the type of article, attention to ethical concerns should begin long before any manuscript is submitted for publication. Among the issues to carefully consider while research is in the planning stages are those related to institutional approval, informed consent, deception in research, participant protections, and data sharing. Most journals, including APA journals, require authors submitting a manuscript for publication to also submit forms affirming their compliance with ethical standards for research and publication and disclosing their conflicts of interest, if any (see Section 12.13 for more information and a link to the APA ethical compliance form). We encourage all authors, whether or not they will submit their manuscript to an APA journal, to consult these ethics resources before beginning their research project and at regular intervals throughout the research process. To ensure that they meet ethical standards, before starting a research project, authors should contact the appropriate IRB or ethical review group for their institution or country for information on the kinds of research that require ethics approval, procedures for obtaining ethics approval, ethical and research requirements, and so forth. Authors not affiliated with a university, hospital, or other institution with an IRB are still expected to follow ethical standards in conducting their research and should consult an external IRB if necessary. For more information on IRBs, see the APA website (https://on.apa.org/2FuiPJ1).

Authors are encouraged to report in the text of the manuscript the institutional approvals the study received, as described in the APA journal article reporting standards in Chapter 3 (see Sections 3.6 and 3.14 and Tables 3.1–3.3). Authors should also be prepared to answer potential questions related to these issues from editors or reviewers during the review process (see Section 12.13). As a final step prior to manuscript submission, authors should also consult the ethical compliance checklist in Section 1.25.

1.12 Ethical and Accurate Reporting of Research Results

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The essence of ethics in all scientific reporting is that authors report the methods and results of their studies fully and accurately. Therefore, the ethical and professional issues discussed in this section apply equally to quantitative, qualitative, and mixed methods research (see Chapter 3 for additional reporting standards).

Authors must not fabricate or falsify data (APA Ethics Code Standard 8.10a, Reporting Research Results). Modifying results, including visual images, to support a theory or hypothesis and omitting troublesome observations from a report to present a more convincing story are also prohibited (APA Ethics Code Standard 5.01b, Avoidance of False or Deceptive Statements). Similarly, representing data-generated hypotheses (post hoc) as if they were preplanned is a violation of basic ethical principles.

The practice of "omitting troublesome observations" includes

- selectively failing to report studies (e.g., in the introduction or Discussion section) that, although methodologically sound and relevant to the hypothesis, theory, or research question at hand, had results that do not support the preferred narrative (i.e., that contrast with results obtained in the current study);
- selectively omitting reports of relevant manipulations, procedures, measures, or findings within a study, for similar reasons; and
- selectively excluding participants or other individual data observations, without a valid methodological reason, in order to achieve desired results.

To clarify expectations for reporting and help safeguard scientific integrity, APA (like other scientific organizations) has issued a series of reporting standards (Appelbaum et al., 2018; Cooper, 2018; Levitt, 2019; Levitt et al., 2018). These standards, which are discussed in Chapter 3, address many aspects of the ethical reporting of experiments. They include expectations for describing all measured variables, for tracking participant flow through a study (with an accompanying prototype figure; see Figure 7.5 in Section 7.36) so that no participant is selectively excluded without mention, and for reporting special classes of studies such as clinical trials.

Reporting standards, like the APA Ethics Code, are not static; changes are continually made to improve how researchers report results. One of the more recent and important changes for quantitative research reporting is that

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hypotheses should now be stated in three groupings: preplanned–primary, preplanned–secondary, and exploratory (post hoc). Exploratory hypotheses are allowable, and there should be no pressure to disguise them as if they were preplanned. Similarly, qualitative researchers should transparently describe their expectations at the outset of the research as part of their research reporting.

1.13 Errors, Corrections, and Retractions After Publication

Careful preparation of manuscripts for publication is essential, but errors can still appear in the final published article. When errors are substantive enough to affect readers' understanding of the research or their interpretation of the results, authors are responsible for making such errors public.

Corrections. When a correction is needed, the first step is to inform the editor and the publisher of the journal so that a formal correction notice (erratum) can be published. The goal of such a notice is to openly and transparently correct the knowledge base for current and future users of the information in the published article. A correction notice is usually appended to the original article's record in research databases so that readers will retrieve it when they access either the article or a database's record for the article; at times, the article itself may also be corrected. See also APA Ethics Code Standard 8.10b, Reporting Research Results, as well as Section 12.22 of this manual for further information on when and how to write a correction notice.

Retractions. Occasionally, the problems with an article are so great (e.g., plagiarism, fabrication or falsification of data, belatedly discovered calculation or measurement errors that change the interpretation of the findings) that the entire article is retracted by the author or authors, their institution, or the publisher. Whatever the reason for the retraction, the intent is to remove the information from the scientific literature and thus avoid wasting the time and resources of other scientists who might rely on or attempt to replicate the compromised results. The retracted article may still be available in databases; however, a retraction notice will accompany it to notify readers of its status. Authors should avoid citing retracted articles

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unless the citation is essential; if authors do cite a retracted article, its reference list entry should reflect that the article has been retracted (see the APA Style website at https://apastyle.apa.org for an example).

1.14 Data Retention and Sharing

Data Retention. Authors are expected to retain the data associated with a published article in accordance with institutional requirements; funder requirements; participant agreements; and, when publishing in an APA journal, the APA Ethics Code (Standard 8.14, Sharing Research Data for Verification). When planning a research study and before beginning data collection, authors are encouraged to consider how the data will be retained (and shared) and to outline clear data-handling procedures in the study protocol submitted to an IRB or other ethics committee. During the informed consent process, authors should describe to study participants the data they intend to collect, save, and/or share with other researchers and obtain their approval. In qualitative studies, data sharing may not be appropriate because of confidentiality, consent, and other limitations (see Section 1.15).

Data Sharing. The APA Ethics Code prohibits authors from withholding data from qualified requesters for verification through reanalysis in most circumstances (see Standard 8.14, Sharing Research Data for Verification), as long as the confidentiality of the participants is protected. The APA Ethics Code permits psychologists to require that a requester be responsible for any costs associated with the provision of the data. Increasingly, funders are also requiring that data be shared in an open- or secured-access repository or that a data-management plan otherwise be spelled out. Authors publishing in an APA journal are invited to share their data on APA's portal on the Open Science Framework (https://osf.io/view/apa/).

Notably, incentives are offered to researchers who wish to share their data, such as Open Science Badges offered through the Center for Open Science. Open Science Badges are awarded for the open sharing of materials used by researchers in the process of data collection and analysis (e.g., instructions, stimuli, blank questionnaires, treatment manuals, software, interview protocols, details of procedures, code for mathematical models); source data, meaning the original written, electronic, or audiovisual records of the study

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participants' responses (e.g., paper questionnaires, transcripts, output files, observational notes, video recordings); and analysis data, meaning the processed version of the source data used to produce the analyses reported in the paper.

Sharing During Review. Subject to the conditions and exceptions discussed next, authors are expected to share data, analyses, and/or materials during the review and publication process if questions arise with respect to the accuracy of the report. On request, the authors should share the raw data with the journal's editor and (if approved by the editor) with reviewers to verify the reported analyses and data and to assess their rigor. If questions arise about the integrity or processing of the source data, authors should also share access to them with the editor on request. Costs of sharing data requested during the review process should be borne by the authors. Similarly, students should expect to provide raw data to faculty reviewing their dissertation, thesis, or research project. A journal editor has the right to deny publication if the authors refuse to share requested materials or data during the review process. In the case of student work, refusal to share requested materials or data may result in a failing grade or defense. See Section 1.15 for additional considerations when sharing access to data from qualitative studies.

Sharing After Publication. Authors must make their data available after publication, subject to conditions and exceptions, within the period of retention specified by their institution, journal, funder, or other supporting organization. This permits other competent professionals to confirm the reported analyses using the data on which the authors' conclusions are based or to test alternative analyses that address the article's hypotheses (see APA Ethics Code Standard 8.14a, Sharing Research Data for Verification, and Standard 6.01, Documentation of Professional and Scientific Work and Maintenance of Records). Competent professionals are those who are currently accountable to a research institution or an educational employer and who demonstrate sufficient training and credentials to understand the research study's background, methods, and analyses. The journal editor may be asked to determine who qualifies as a competent professional given the topic of the research. See Section 1.15 for additional considerations when sharing qualitative research data.

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Typically, any additional costs of complying with a request for data beyond the general standards of internal data maintenance (e.g., anonymization, transfer of data, translation) should be borne by the requester, and these costs should be assessed at a reasonable local rate for the necessary services and materials. If it emerges that authors are unwilling or unable to share data for verification within the retention period, the journal's current editor may retract the article or issue an Expression of Concern about its findings according to the policy of the publisher.

Data and materials may sometimes be requested after publication for purposes beyond the ones outlined previously. Regardless of why the data and materials are requested, to avoid misunderstanding, it is important that the researcher requesting data and the researcher providing it come to a written agreement about the conditions under which the data are to be shared (see APA Ethics Code Standard 8.14b, Sharing Research Data for Verification). Generally, such an agreement specifies the limits on how the shared data may be used (e.g., for verification of already published results, for inclusion in meta-analytic studies, for secondary analysis), who may have access to the data (e.g., only the requester, the requester and direct supervisees, anyone interested with no limits on further sharing), and how the requester will store and dispose of the data. Furthermore, the agreement should specify any limits on the dissemination of the results of analyses performed on the data (e.g., whether they can be published in conference presentations, internal reports, journal articles, or book chapters) and any expectations for authorship of publications based on shared data. Data-sharing arrangements must be entered into with proper consideration of the rights of the copyright owner (see Section 12.20), participants' consent, requirements of funding agencies, requirements of IRBs and other ethics committees that provided permission to conduct the study, and rules promulgated by the employer of the holder of the data.

Authors may choose or be required to share data and/or materials openly by posting them online. Journal editors may set a policy to encourage open sharing, to require it, and/or to require authors to give a reason why data and materials cannot be shared (e.g., risk to participant privacy). A permanent link to any data or materials to be shared openly should be included in the article, such as in an Open Practices section in the author note (see Section 2.7); the reference for the data set should also be included in the reference list

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of the article (see Section 10.9 for how to cite). Federally funded or grant-funded research is often subject to requirements for data sharing; see, for example, the data-sharing policies of the National Institutes of Health (n.d.).

Conditions and Exceptions to Data Sharing. Before sharing or posting data and materials for any purpose, researchers must remove any personally identifiable information or code that would make it possible to reestablish a link to an individual participant's identity. Sometimes, a unique combination of demographic or other public information can be used to establish a participant's identity, and this possibility must be kept in mind and avoided as well. Researchers should consult the relevant policies of their institution or country (e.g., the European Union General Data Protection Regulation [GDPR], the Health Insurance Portability and Accountability Act [HIPAA]) for regulations and guidance on conditions for sharing data and deidentifying protected health information.

In addition to protecting the confidentiality of research participants, some proprietary arrangements may prohibit the sharing of data and materials (e.g., data provided in confidence by a business entity, a coding scheme developed commercially by the authors). Editors are responsible for setting policy for their journal about the acceptability for publication of research resting on proprietary arrangements, given that its accuracy and veracity cannot be checked in the usual way. This policy may depend on the availability of alternative ways to satisfy concerns about scientific integrity. For example, research using a proprietary personality scale may be acceptable if enough qualified researchers subscribe to it that someone can be found to help with independent verification.

1.15 Additional Data-Sharing Considerations for Qualitative Research

The sharing of qualitative data with editors, peers, and other researchers has distinct considerations in addition to those described in Section 1.14. The APA Committee on Human Research and numerous qualitative researchers have expressed concerns about sharing qualitative research data (Data Sharing Working Group, 2015; DuBois et al., 2018; Guishard, 2018). Although consensus on how to navigate this issue has not yet been

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established, this section highlights several points that contraindicate or suggest alternates to data sharing.

Presentation of Raw Data in Research Reports. Data are typically reproduced in qualitative research reports. Segments of data (e.g., quotations from interviews) are presented to exemplify the process of analysis and to demonstrate the grounding of the findings in the data. Because these raw data are available for examination in the text of the article, they provide a basis by which readers, as well as editors and reviewers during the manuscript review process, can evaluate (and perhaps question) the appropriateness of the conclusions reached.

Confidentiality Limitations. The obligation to protect participants' confidentiality can present special ethical issues for qualitative data sharing. For instance, raw data from a qualitative study involving multiple detailed stories about participants' lives may contain details that are necessary to make the data meaningful but that can be revealing in compromising ways when triangulated. Qualitative research may also involve intensive case studies of people who were selected because of their unique attributes. Although the researchers may try to mask participants' identities within a manuscript, it may not be possible to retain all that is meaningful to evaluate an analysis and at the same time protect participants' confidentiality if the complete data set is shared. The high burden on the researchers to remove all information that can lead to the identification of a participant is unjustifiable if it produces a set of data that is stripped of meaning. As a result, the researchers may instead need to withhold data to ensure participant confidentiality (see McCurdy & Ross, 2018, on the sometimes prohibitive complications of this process).

Consent Limitations. There is also the consideration that participants may give consent to participate in a study to a specific group of researchers and may not extend that consent to other researchers. This may be of particular concern with vulnerable populations. For instance, lesbian participants may consent to have their data analyzed by researchers who are in their community and who seek to support their rights, but that consent may not apply to other researchers with different motivations. Likewise, some

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researchers spend years developing the trust to collect and analyze data from a community, and community members may not extend that trust to other groups of researchers. Indeed, communities may be owners or co-owners of the data themselves and may refuse to share the data (DuBois et al., 2018; Tuck & Yang, 2014). As a result, the relationship between the researchers and the participants is an important ethical consideration and one that may contraindicate data sharing.

Researchers' Perspective Limitations. Many qualitative researchers view their own history and epistemological perspectives as legitimate influences on the process of inquiry. Thus, when sharing data from qualitative research, the researchers' perspectives and experiences must be taken into account. Research can be compromised if researchers are unreflective or not purposeful or explicit about this influence. However, when researchers are aware, they can deliberately elaborate on the investigative attitudes (e.g., phenomenological bracketing), personal experiences (e.g., ethnographic study), research teams (e.g., including researchers from the communities under analysis), or analytic lenses (e.g., critical theories) that enrich their research and thereby deepen the acuity they bring to the analytic task (Guishard et al., 2018). These qualitative researchers would not necessarily expect editors or external researchers to interpret their research in the same way when evaluating their analysis because they may not share their perspectives.

In qualitative inquiry, the researchers are the analytic tool, so those who have developed an intimate understanding of a data set or who have developed a perspective to enhance their sensitivity to the data typically are better attuned to nuances, implicit meanings, and systemic connections. This means that an editor or external researcher should not expect replication of the findings and should articulate an appropriate purpose and rationale for review of the shared data prior to the data being shared. Also, the approach to investigation selected may signify epistemological commitments of researchers and their participants, and these values need to be considered and honored in data-sharing efforts. In any case, a review of the data would need to be conducted with a keen awareness of the distinct epistemological positions and analytic processes within qualitative research.

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1.16 Duplicate and Piecemeal Publication of Data

Reports in the literature must accurately reflect the independence of separate research efforts. Both duplicate and piecemeal publication of data misrepresent the amount of original research in the repository of scientific knowledge. Duplicate publication is the publication of the same data or ideas in two separate works. Piecemeal publication is the unnecessary splitting of the findings from one research effort into multiple works.

Duplicate Publication. Misrepresentation of data as original when they have been published previously is specifically prohibited by the APA Ethics Code (Standard 8.13, Duplicate Publication of Data). Duplicate publication distorts the knowledge base by making it appear that more information is available than actually exists. It also wastes scarce resources (journal pages and the time and efforts of editors and reviewers). The prohibition against duplicate publication is especially critical for the cumulative knowledge of the field. Duplicate publication can give the erroneous impression that findings are more replicable than is the case or that particular conclusions are more strongly supported than is warranted by the cumulative evidence. Duplicate publication can also lead to copyright violations; authors cannot assign the copyright for the same material to more than one publisher. When submitting a manuscript for publication, authors are obligated to disclose whether they have posted the manuscript online, either in full or in substantial part; some editors may consider such posting to be prior publication.

Examples of and Exceptions to Duplicate Publication. Authors should not submit manuscripts that have been published in whole or in substantial part elsewhere, including manuscripts with substantially similar form or content to their previously published works. This policy also applies to translations; authors are not permitted to publish research in one language and then translate the article into another language and publish it again. Authors in doubt about what constitutes prior publication should consult the editor of the journal to which they are submitting their manuscript.

The policy regarding duplicate publication also means that the same or overlapping material that has appeared in a publication offered for public sale, such as conference proceedings or a book chapter, should not be republished elsewhere because these sources are considered widely available.

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For example, a brief report is published in an APA journal with the understanding that an extended report will not be published elsewhere because APA brief reports include sufficient descriptions of methodology to allow for replication; the brief report is the archival record for the work.

The policy regarding duplicate publication has some exclusions. Manuscripts previously published in abstracted form (e.g., in conference proceedings) or in a periodical with limited circulation or availability (e.g., report by a university department or government agency, dissertation) can be published again in a venue of wide circulation (e.g., in a journal). Consult a journal editor to determine whether a study reported in a dissertation or thesis or posted in a preprint repository could benefit from peer review and publication as a journal article.

Similarly, it is not considered duplicate publication to reanalyze already published data in light of new theories or methodologies, if the reanalysis is clearly labeled as such and provides new insights into the phenomena being studied. The policy also does not apply to follow-up studies; for example, researchers may first report the initial findings from a clinical trial and subsequently report results of a follow-up assessment 2 years after the trial's completion.

Acknowledging and Citing Previous Work. Authors sometimes want to publish what is essentially the same material in more than one venue to reach different audiences. Such duplicate publication can rarely be justified, given the ready accessibility of published works online. If authors think it is justified, the article must include a reference to the original report—both to inform editors, reviewers, and readers and to fulfill the authors' obligations to the copyright holder of the previous work.

If it is deemed scientifically necessary to represent previously published material—for instance, to report new analyses or to frame new research that follows up on previous work from the authors' laboratory—the following conditions must be met:

1. The amount of duplicated material must be small relative to the total length of the text.
2. The authors must clearly acknowledge in the author note and in all

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relevant sections of the article (e.g., Method, Results) that the information was reported previously, and the previous work must be cited.

3. The authors must provide a copyright attribution for any reprinted or adapted tables and figures and may need to secure permission from the copyright holder as well (see Sections 12.14–12.18).
4. The original work must be clearly and accurately cited in the reference list (see also the discussion on self-plagiarism in Sections 1.17 and 8.3).

When the original work has multiple authors and the authorship of the new work is not identical, all authors of the original work must provide appropriate copyright permission (see Section 12.20) and receive agreed-upon credit (e.g., in an author note; see Section 2.7) for their contributions in the later publication.

Piecemeal Publication. Authors are obligated to present work as parsimoniously and completely as possible within the space constraints of journal articles. Data that can be meaningfully combined within a single article should be presented together to enhance effective communication.

Piecemeal, or fragmented, publication of research findings can be misleading if multiple reports appear to represent independent instances of data collection or analyses; distortion of the scientific literature, especially in reviews or meta-analyses, may result. Piecemeal publication of the results from a single study is therefore undesirable unless there is a clear reason for doing so. It may be quite difficult to determine whether a valid reason exists; therefore, authors who submit manuscripts based on studies or data presented in other published or submitted works should inform the journal editor of the source and extent of the overlap, and they should detail how their submission builds on the previous reports. Whether the publication of two or more reports based on the same or on closely related research constitutes fragmented publication is a matter of editorial judgment.

Multiple Publications From Large-Scale, Longitudinal Projects and Qualitative and Mixed Methods Research. There are times when it is both

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necessary and appropriate to publish multiple reports. Multidisciplinary projects often address diverse topics and answer different questions; thus, publishing the results in a single article may be inappropriate. Similarly, researchers sometimes design studies with the purpose of addressing distinct theoretical questions using the same instruments; if written as separate research reports, each report should make a unique contribution and not overlap substantially with the others or with previously published material. Researchers should consider at the outset of data collection how the data will be presented (e.g., in one report vs. multiple reports); although new research questions or analyses may arise in the process of analyzing the data, researchers should not fish through the data for the sole purpose of extracting additional studies. Although all reports stem from the same overall project, the introduction, Results, and Discussion sections of each report would be unique, and at least some aspects of the Method section would be unique as well.

Longitudinal or large-scale studies are another instance when multiple publications are often appropriate because the data at different time points make independent scientific contributions. Further, useful knowledge should be made available to others as soon as possible, which is precluded if publication is delayed until all the studies are complete.

Multiple reports may be needed in some qualitative and mixed methods research when qualitative data collection and analysis produce volumes of findings that are not appropriate for publication in a single article—for instance, when investigators conduct interviews to explore questions that have distinct purposes and are meaningful in relation to separate literatures and concerns. With mixed methods studies, authors might publish multiple articles, such as a qualitative study, a quantitative study, and a mixed methods overview study, each focusing on new insights based on findings across the methods.

When authors create multiple reports from studies of this sort, they are obligated to cite prior reports on the project to help readers understand the work accurately. For example, in the early years of a longitudinal study, the authors might cite all previous publications from it. For a well-known or long-term longitudinal study, the authors might cite the original publication, a more recent summary, and earlier articles that focused on the same or related scientific questions addressed in the current report. It is useful to distinguish

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between data sets that are complete and data sets that are still in collection. It is not necessary to repeat the description of the design and methods of prior reports in their entirety; authors may refer readers to an earlier publication for this detailed information. It is important, however, to provide sufficient information so that readers can evaluate the current report. It is also important to clarify the degree of sample overlap in multiple reports from large studies. Again, authors should inform and consult with the journal editor before submitting a manuscript of this type.

Whether the publication of two or more reports based on the same or closely related research constitutes piecemeal publication is a matter of editorial judgment, as is the determination of whether the manuscript meets other publication criteria. Authors should note in the manuscript all prior works related to the study by including them in the reference list and citing them in the text (see the previous section on acknowledging and citing previous work). When submitting the manuscript, authors must inform the journal editor in a cover letter of any similar manuscripts that have already been published, accepted for publication, or submitted for concurrent consideration to the same journal or elsewhere. The editor can then make an informed judgment as to whether the submitted manuscript includes sufficient new information to warrant consideration. If the authors' identities are masked for review, references to previous work should be concealed as well until after the review process.

If, during the review or production process, a manuscript is discovered to be in violation of duplicate or piecemeal publication policies and the authors failed to inform the editor of the potential for violation, then the manuscript can be rejected without further consideration. If such a violation is discovered after publication in an APA journal, appropriate action, such as retraction by the publisher or notice of duplicate publication, can be taken.

Republication of an Article as a Book Chapter. Journal articles sometimes are revised for publication as book chapters. Authors have a responsibility to reveal to readers that portions of the new work were previously published and to cite and reference the source. If copyright is owned by a publisher or by another person, authors must obtain permission to reprint or adapt the work and include a copyright attribution in the chapter (see Sections 12.14–12.18).

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1.17 Implications of Plagiarism and Self-Plagiarism

Plagiarism is the act of presenting the words, ideas, or images of another as one's own; it denies authors credit where credit is due. Whether deliberate or unintentional, plagiarism violates ethical standards in scholarship (see APA Ethics Code Standard 8.11, Plagiarism) and has profound real-world effects. Authors who try to publish plagiarized work face rejection from publication, as well as possible sanction by professional bodies, censure in their place of employment, and/or exclusion from applying for federal funding. Students who turn in a plagiarized assignment face a failing grade, as well as possible censure from a student or university honor board, suspension, or expulsion. Self-plagiarism is the act of presenting one's own previously published work as original; it misleads readers and falsely inflates the number of publications on a topic. Like plagiarism, self-plagiarism is unethical. To learn more about what constitutes plagiarism and self-plagiarism and how to avoid both, see Sections 8.2 and 8.3.

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Protecting the Rights and Welfare of Research Participants and Subjects

1.18 Rights and Welfare of Research Participants and Subjects

The APA Ethics Code (Sections 3 and 8) specifies the standards psychologists are to follow when conducting research with human participants and nonhuman animal subjects. Both humans and nonhuman animals in research studies have the right to ethical and humane treatment. Research with human participants involves additional rights and welfare protections; for example, researchers are required to

- obtain informed consent, assent, or permission, as appropriate, using language that is reasonably understood by research participants;
- avoid or minimize participants' exposure to
  - physical, emotional, or psychological harm;
  - exploitative relationships;
  - undue influence based on the researchers' status, power, or authority;
  - excessive or inappropriate inducements to participate; and
  - unjustified or unduly delayed deception or debriefing procedures; and
- take adequate measures to prevent unauthorized access to or release of participant data to the public or other researchers not specified in the informed consent (e.g., by obtaining prior written agreement for sharing of research data).

Nonhuman animal subjects are to be cared for humanely and provided with healthful conditions during their stay in research facilities. The protocol for research with nonhuman animals must be reviewed by an appropriate animal care committee (e.g., an IACUC) before it is conducted to ensure that the procedures are appropriate and humane (APA, 2012a).

Researchers who are APA members, regardless of field, are required to certify that they have followed ethical standards as a precondition of publishing their articles in most journals, including APA journals (see Section 12.13). We encourage authors to include in the text of their

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manuscripts certifications that their research followed ethical and institutional guidelines, as described in the APA journal article reporting standards in Chapter 3. For instance, if research participants consented to having their identifying information disclosed (e.g., their name), the authors should indicate in the Method section of the article that consent was given. Failure to follow these standards can be grounds for rejecting a manuscript for publication or for retracting a published article.

1.19 Protecting Confidentiality

When authors describe their research, they are prohibited from disclosing "confidential, personally identifiable information concerning their clients/patients, students, research participants, organizational clients, or other recipients of their services" (APA Ethics Code Standard 4.07, Use of Confidential Information for Didactic or Other Purposes) unless participants give documented consent to disclose their identities. The exact requirements for documentation vary depending on the nature of the consent obtained and the type of study.

Confidentiality in case studies can, at times, be difficult to achieve. For example, the researcher might obtain written consent from the subject of the report to publish the study. The researcher must be careful not to exploit the subject—for example, when the researcher has supervisory, evaluative, or other authority over them, as in the case of a client, patient, supervisee, employee, or organizational client (see APA Ethics Code Standard 3.08, Exploitative Relationships, and Standard 3.05, Multiple Relationships).

In some types of qualitative research (e.g., participatory action research, autoethnography), the participants may be investigators and authors, meaning they will be personally identifiable. Participant-authors or participant-investigators should retain control over what information about them is presented in the report (see Section 1.15 for more on sharing data from qualitative research).

Strategies to Disguise Identifying Material. Researchers can protect confidentiality by disguising some aspects of the data so that neither the subject nor third parties (e.g., family members, employers) are identifiable. Four main strategies are used: (a) altering specific characteristics, (b) limiting

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the description of specific characteristics, (c) obfuscating case detail by adding extraneous material, and (d) using composite descriptions. Disguising identifying information must be done carefully because it is essential not to change variables in a way that would lead readers to draw false conclusions (Sweeney et al., 2015). For example, altering a person's gender in a case illustrating a promising therapy for sexual assault trauma might compromise its educative value if the person's gender played a significant role in the treatment. Subject details should be omitted only if they are not essential to the phenomenon being described. Confidentiality, however, should never be sacrificed for clinical or scientific accuracy. Reports that cannot adequately disguise identifiable subject information should not be submitted for publication. For examples of how to incorporate case material (e.g., quotations from research participants) into the text, see Section 8.36.

Data Deidentification. Extra steps may be needed to protect participants' confidentiality when working with data sets containing multiple forms of data or protected health information. The HIPAA website provides guidance on deidentifying data (see https://www.hhs.gov/hipaa/for-professionals/privacy/special-topics/de-identification/index.html). Researchers have also developed methods for deidentifying various kinds of data; see, for example, the work of the Data Privacy Lab (https://dataprivacylab.org/projects/index.html).

1.20 Conflict of Interest

In the APA Ethics Code (Standard 3.06, Conflict of Interest), conflict of interest is defined broadly as involving "personal, scientific, professional, legal, financial, or other interests or relationships" that could negatively affect professional conduct or cause harm to persons with whom a professional interacts (see also Sections 2.7 and 12.13). Thus, the main concerns when a conflict of interest arises in publishing are the impairment of objectivity in both performing and evaluating research and the potential for harm to or exploitation of research participants.

Author Interest. In all scientific disciplines, professional communications are presumed to be based on objective and unbiased interpretations of

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evidence. Transparency about researchers' positions in relation to their evidence and interpretations is central. For example, authors' economic and commercial interests in products or services used in a study or discussed in a manuscript may color their ability to collect evidence and interpret it with fidelity. Although the presence of such interests does not necessarily constitute an unethical conflict of interest per se, the integrity of the field requires open and honest disclosure of the possibilities of such influences when they may exist. In general, an author's safest and most transparent course of action is to disclose in an author note activities and relationships that, if known to others, might be viewed as a conflict of interest, even if the author does not believe that any conflict or bias exists.

Whether an interest is significant depends on individual circumstances and cannot be defined by a threshold amount. Holdings in a company through a mutual fund are not ordinarily sufficient to warrant disclosure, whereas salaries, research grants, consulting fees, and personal stock holdings should be disclosed. Participation on a board of directors or any other relationship with an entity that is in some way part of the research project should also be carefully considered for possible disclosure.

In addition to disclosing possible influences that might lead authors to support certain findings, authors should also consider disclosing when circumstances could influence them against a product, service, facility, or person. For example, having a copyright or royalty interest in a competing psychological test or assessment protocol might be seen as a possible source of negative bias against another test instrument (American Educational Research Association et al., 2014).

Editor and Reviewer Interest. For editors and reviewers who evaluate a given manuscript for publication, conflicts of interest are defined more broadly than economic interests and are usually dealt with by recusal rather than disclosure. It is the responsibility of editors and reviewers to recognize their conflicts of interest, disclose these conflicts to the person who assigned them the manuscript, and either decline the request or ask the assigning person to make a decision.

For editors and reviewers, conflicts of interest may be economic, as described previously for authors. If the main topic of an article has direct implications for a commercial interest of the editor or reviewer, that

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individual should decline the request to review the article. Any other economic conflicts that bear on the review are for the person who assigned the manuscript to decide.

Conflicts of interest for editors and reviewers may also take the form of personal connections. Having a family tie, marital relationship, close friendship, or romantic connection with an author is generally seen as a conflict of interest. Professional relationships also may constitute a conflict of interest if, for example, one of the authors is a coauthor, past or current collaborator, past doctoral student or supervisor, or current colleague of the editor or reviewer. Editors-in-chief should set policy for their journal about whether collaboration-based conflicts extend for a lifetime or elapse after a certain number of years have passed. If an editor or reviewer guesses the identity of an anonymized author, and there is potential for a personal conflict, the editor or reviewer should make the assigning person aware of this.

Although differences of scientific or political opinion may influence evaluation of a manuscript, it is impractical to define any opinion-based agreement or disagreement as constituting a disqualifying conflict of interest. However, if an editor or reviewer finds that their point of view is fundamentally opposed to the rationale or approach of a manuscript, they should let the assigning person know this. For their part, editors should seek opinions from reviewers with a variety of positions when evaluating a manuscript known to be controversial.

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Protecting Intellectual Property Rights

1.21 Publication Credit

Authorship is reserved for persons who make a substantial contribution to and who accept responsibility for a published work. Individuals should take authorship credit only for work they have performed or to which they have substantially contributed (APA Ethics Code Standard 8.12a, Publication Credit). Authorship encompasses, therefore, not only persons who do the 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 study design, organizing and conducting the analysis, or interpreting the results and findings. Those who so contribute are listed as authors in the byline. Lesser contributions, which do not constitute authorship, may be acknowledged in the author note (see Section 2.7; see also a taxonomy of authorship in the natural sciences called CRediT at https://casrai.org/credit). Lesser contributions may include such supportive functions as designing or building the study apparatus, suggesting or advising about the analysis, collecting or entering the data, modifying or structuring a computer program, recruiting participants, and 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.

As early as practicable in a research project, the collaborators should decide which tasks are necessary for the project's completion, how the work will be divided, which tasks or combination of tasks merits authorship credit, and on what level credit will be given (first author, second author, etc.). Collaborators may need to reassess authorship credit and order if relative contributions change in the course of the project (and its publication). This is especially true in faculty–student collaborations when students need more intensive supervision than originally anticipated, when additional analyses are required beyond the scope of a student's current level of training, or when the level of the student's contribution exceeds what was originally anticipated.

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When a manuscript is accepted for publication, each person listed in the byline must verify in writing that they (a) agree to serve as an author, (b) approve the order of authorship presented in the byline, and (c) accept the responsibilities of authorship.

1.22 Order of Authors

Professional Authors. Authors are responsible for determining authorship and for specifying the order in which two or more authors' names appear in the byline. 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 (e.g., department chair, junior faculty member, student) should not determine the order of authorship. The general rule is that the name of the principal contributor appears first, with subsequent names appearing in order of decreasing contribution. In some cases, another principal contributor appears last. These conventions can vary from field to field and from journal to journal. Novice authors are advised to contact the editor of the journal to which they are submitting a manuscript for guidance. 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 2.7).

Professional–Student Collaborations. Because doctoral work is expected to result in an independent and original contribution to the field by the student, except under rare circumstances, the student should be listed as the principal author of any papers with multiple authors that are substantially based on their dissertation (APA Ethics Code Standard 8.12c, Publication Credit). Unusual exceptions to doctoral student first authorship might occur when the dissertation is published as part of a collection of studies involving other researchers or when work on a final manuscript was performed substantially by a coauthor. Whether students merit principal authorship on papers based on master's-level or other predoctoral research will depend on their specific contributions to the research. When master's-level students make the primary contribution to a study, they should be listed as the first author. Students may also collaborate with a faculty member on a faculty-originated project as a way to acquire the skills to make a primary scientific contribution in their

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master's thesis. In such cases, authorship should be determined by the relative contributions of the student and faculty member to the project (Fisher, 2017).

Student Assignments. When students contribute equally to a group project that will be submitted to an instructor (not for publication), students may put their names in any order in the byline (e.g., alphabetical order, reverse alphabetical order).

1.23 Authors' Intellectual Property Rights During Manuscript Review

Editorial review of a manuscript requires that the editors and reviewers circulate and discuss the manuscript. During the review process, the manuscript is a confidential and privileged document. Editors and reviewers may not, without the authors' explicit permission, quote from a manuscript under review or circulate copies of it to others, including graduate or postdoctoral students, for any purpose other than editorial review (APA Ethics Code Standard 8.15, Reviewers; see Section 12.7 for a detailed discussion of the peer review process). If a reviewer wishes to consult with a colleague about some aspect of the manuscript, the reviewer must request permission from the editor prior to approaching the colleague. Publishers have different policies on how editorial review works, and reviewers should consult the editor for any questions. In addition, editors and reviewers may not use material from an unpublished manuscript to advance their own or others' work without the authors' consent.

1.24 Authors' Copyright on Unpublished Manuscripts

Authors are protected by federal statute against unauthorized use of their unpublished manuscripts. Under the Copyright Act of 1976 (Title 17 of the United States Code), an unpublished work is copyrighted "automatically from the moment the original work of authorship is fixed" (U.S. Copyright Office, 2017, p. 1), referring to the moment in which a work exists in any tangible form—for example, typed on a page. Until authors formally transfer copyright (see Section 12.20), they own the copyright on an unpublished manuscript; all exclusive rights due the copyright owner of a published work

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are also due the authors of an unpublished work. To ensure copyright protection, publishers include the copyright notice on all published works (e.g., Copyright [year] by [name of copyright holder]). The notice need not appear on unpublished works; nonetheless, it is recommended that authors include a copyright notice on all works, whether published or not. Registration of copyright (e.g., with the U.S. Copyright Office at https://www.copyright.gov/registration/) provides a public record and is usually a prerequisite for any legal action.

1.25 Ethical Compliance Checklist

The following checklist provides general guidance for ensuring compliance with ethics requirements.

Ethical Compliance Checklist

- Have you obtained written permission for use of unpublished instruments, procedures, or data that other researchers might consider theirs (proprietary)?
- Have you properly cited all published works, unpublished works, and ideas and creations of others presented in your manuscript? Have you secured needed permissions and written copyright attributions for items that require them?
- Have you reported institutional review of your study or studies in the Method section of your manuscript?
- Are you prepared to answer editorial questions about the informed consent, assent, and/or debriefing procedures you used?
- If your study involved nonhuman animal subjects, are you prepared to answer editorial questions about the humane care and treatment of such animals?
- Have all authors reviewed the manuscript and agreed on responsibility for its content?
- Have you adequately protected the confidentiality of research participants, clients/patients, organizations, third parties, or others who were a source of information presented in the manuscript?
- Have you released or shared participant data only in accordance with

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the agreement specified in the informed consent for your study?

- If your study was a clinical trial and has been registered, have you reported its registration in the author note and in the text?

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2

PAPER ELEMENTS AND FORMAT

Consistency in the order, structure, and format of paper elements allows readers to focus on a paper's content rather than its presentation. Following APA Style guidelines to achieve consistency in the presentation of paper elements is essential to crafting an effective scholarly work.

In this chapter, we provide an overview of the elements of a paper, including how to structure, format, and organize them. These guidelines apply broadly to any APA Style paper and may be especially useful to students or researchers who are not familiar with APA Style. For researchers preparing manuscripts for publication, more in-depth guidelines on journal article reporting standards (JARS) for quantitative, qualitative, and mixed methods research are discussed in Chapter 3. Students can find guidance on dissertations and theses in Sections 1.10 and 12.1. Sample APA Style papers are included at the end of this chapter; additional sample papers are available on the APA Style website (https://apastyle.apa.org).

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Required Elements

2.1 Professional Paper Required Elements

Paper elements appear in various combinations depending on the nature of the work. Manuscripts submitted for publication (see Sections 1.1–1.9) should always include a title page (see Section 2.3), which contains the paper title (see Section 2.4), author names and affiliations (see Sections 2.5–2.6), and author note (see Section 2.7); page headers with a running head and page numbers (see Sections 2.8 and 2.18); an abstract (see Section 2.9); text (see Section 2.11); and a reference list (see Section 2.12). Papers may also include keywords (see Section 2.10), footnotes (see Section 2.13), tables (see Chapter 7), figures (see Chapter 7), appendices (see Section 2.14), and/or supplemental materials (see Section 2.15). Authors seeking publication should refer to the journal's instructions for authors or manuscript submission guidelines for any requirements that are different from or in addition to those specified by APA Style.

2.2 Student Paper Required Elements

Student papers (e.g., narrative essays, reaction or response papers, literature review papers; see Section 1.10) usually include, at minimum, a title page (see Sections 2.3–2.6), page numbers (see Section 2.18), text (see Section 2.11), and a reference list (see Section 2.12). They may also have tables (see Chapter 7), figures (see Chapter 7), and/or appendices (see Section 2.14). Student papers do not typically include a running head, an author note, or an abstract, unless specifically requested by the instructor or institution. Student papers have a student-specific version of the title page (see Section 2.3).

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Paper Elements

2.3 Title Page

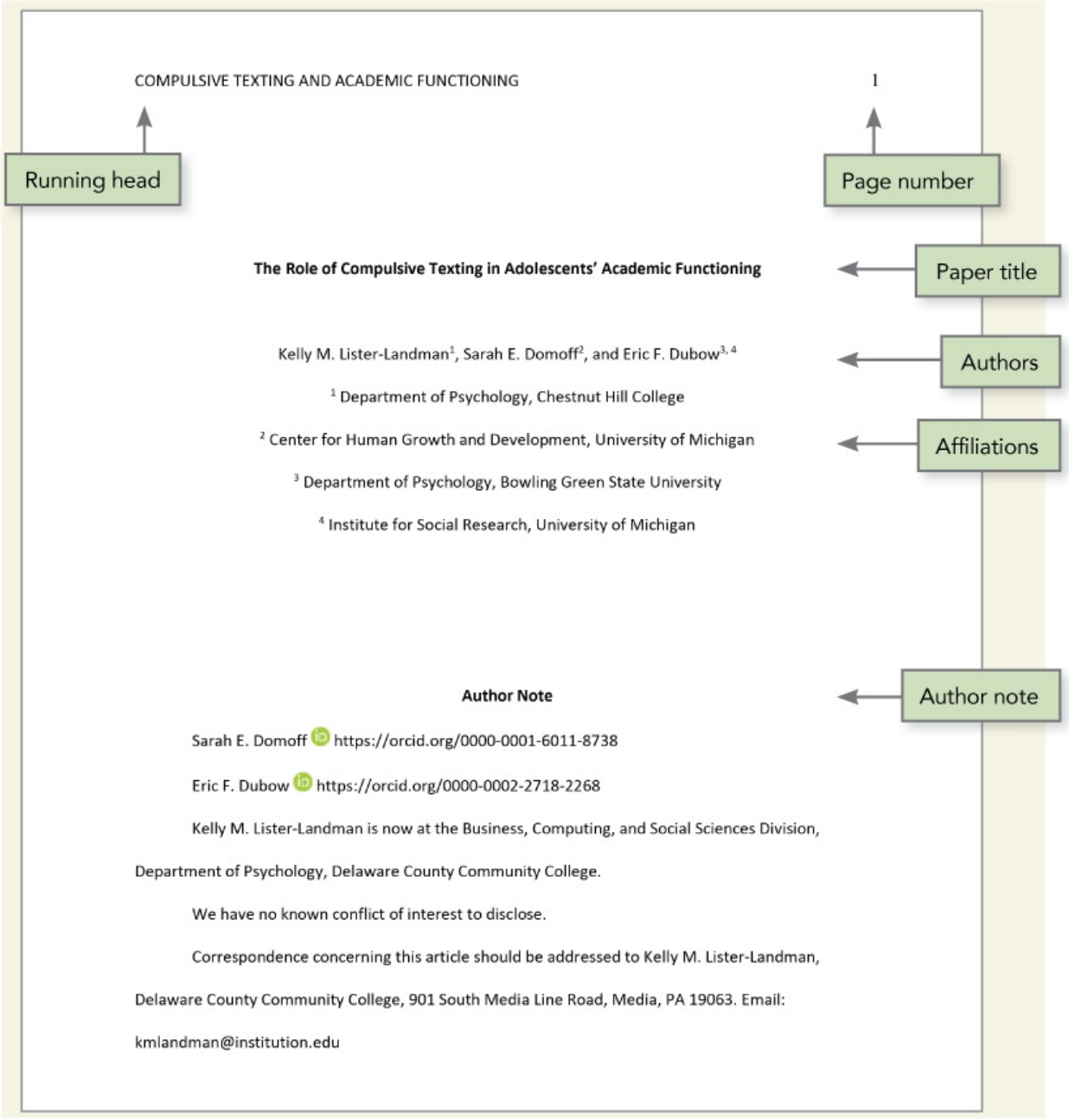
A title page is required for all APA Style papers. There are both professional and student versions of the title page.

Professional Title Page. The professional title page (see Figure 2.1) includes the following elements:

- title of the paper (see Section 2.4),
- name of each author of the paper (the byline; see Section 1.22 for determining the order of authorship and Section 2.5 for formatting the byline),
- affiliation for each author (see Section 2.6),
- author note (see Section 2.7),
- running head (also included on all pages; see Section 2.8), and
- page number (also included on all pages; see Section 2.18).

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Figure 2.1 Sample Professional Title Page



See the section indicated for each element for formatting instructions.

Student Title Page. Students should follow the guidelines of their instructor or institution when determining which title page format is most appropriate to

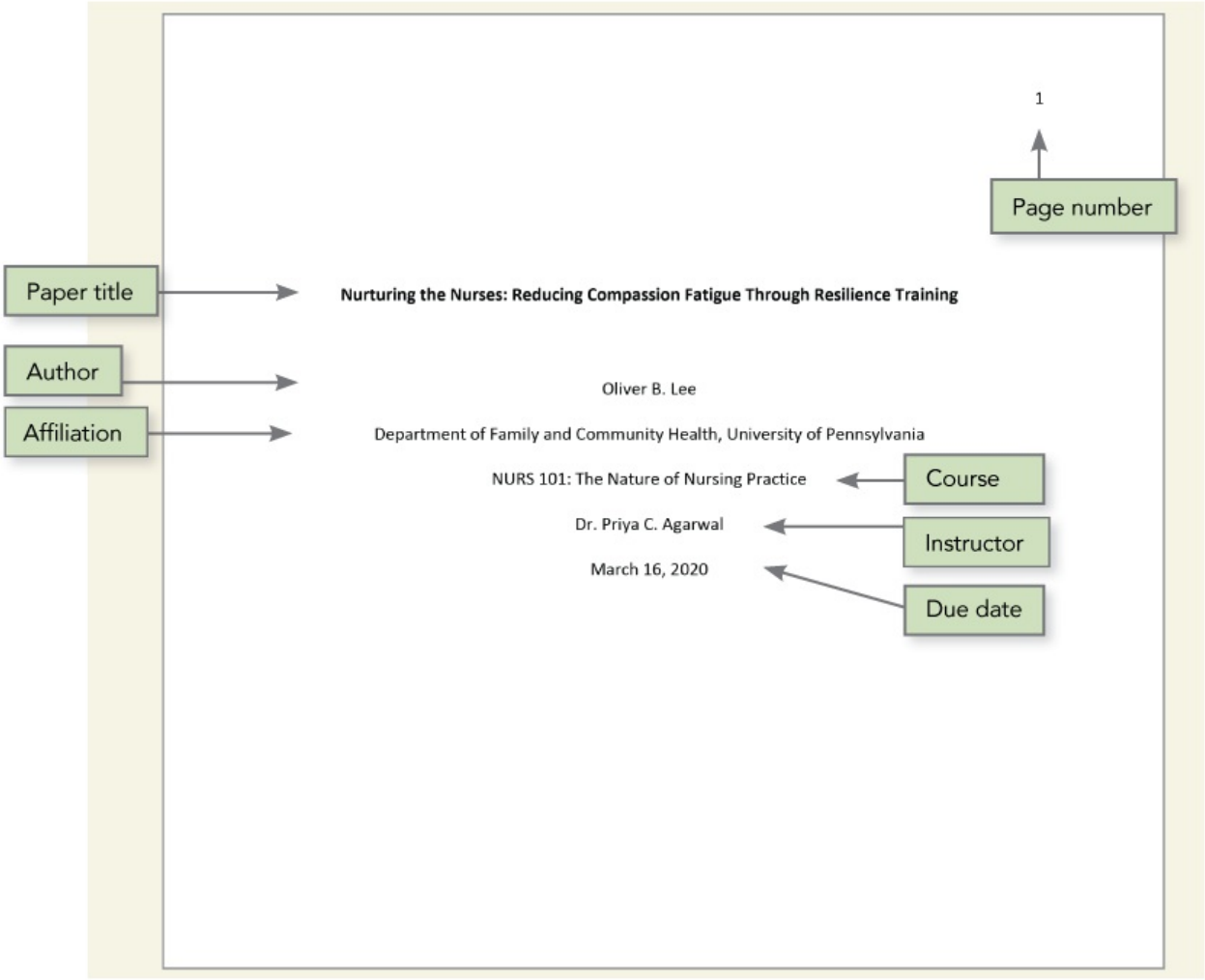
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use. If not instructed otherwise, students should include the following elements on the title page (see Figure 2.2):

- title of the paper (see Section 2.4);
- name of each author of the paper (the byline; see Section 1.22 for determining the order of authorship and Section 2.5 for formatting the byline);
- affiliation for each author, typically the university attended (including the name of any department or division; see Section 2.6);
- course number and name for which the paper is being submitted (use the format shown on institutional materials; e.g., PSY204, PSYC 4301, NURS 303);
- instructor name (check with the instructor for the preferred form; e.g., Dr. Hülya F. Akış; Professor Levin; Kwame Osei, PhD; Mariam Sherzai, RN);
- assignment due date, written in the month, date, and year format used in your country (usually November 4, 2020, or 4 November 2020; we recommend spelling out the month, although 2020-11-04 is the format in countries that use the international standard date); and
- page number (also included on all pages; see Section 2.18).

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Figure 2.2 Sample Student Title Page



See the sections for the title, byline, affiliation, and page numbers for formatting instructions for these elements. Place the course number and name, instructor name, and assignment due date on separate lines, centered and in that order, below the affiliation (see Section 2.21 for more on line spacing).

2.4 Title

The title should summarize the main idea of the paper simply and, if possible, in a way that is engaging for readers. For research papers, it should be a

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concise statement of the main topic of the research and should identify the variables or theoretical issues under investigation and the relationship between them. Although there is no prescribed limit for title length in APA Style, authors are encouraged to keep their titles focused and succinct. Research has shown an association between simple, concise titles and higher numbers of article downloads and citations (Hallock & Dillner, 2016; Jamali & Nikzad, 2011).

Include essential terms in the title to enhance readers' ability to find your work during a search and to aid abstracting and indexing in databases if the work is published. Avoid words that serve no purpose; they increase the title length and can mislead indexers. For example, the words "method" and "results" do not normally appear in a title, nor should such phrases as "a study of" or "an experimental investigation of." Occasionally terms such as "research synthesis," "meta-analysis," or "fMRI study" convey important information for potential readers and are included in the title. Avoid using abbreviations in a title; spelling out all terms helps ensure accurate, complete indexing of the article and allows readers to more readily comprehend its meaning. When an animal name—for example, "Rat"—is in the title, also include the scientific name in italics and parentheses—(Rattus norvegicus). See Table 2.1 for examples of effective versus ineffective paper titles.

Table 2.1 Effective and Ineffective Paper Titles

Effective title	Ineffective title	Rationale
Effect of Depression on the Decision to Join a Clinical Trial	A Study of the Effect of Depression on the Decision to Join a Clinical Trial	More direct: Unnecessary words have been cut.
Why and When Hierarchy Impacts Team Effectiveness: A Meta-Analytic Integration	Hierarchy and Team Effectiveness	More precise: The relationship between variables has been clarified; the type of research (meta-analysis) has been specified.
Closing Your Eyes to Follow Your Heart: Avoiding Information to Protect a Strong Intuitive Preference	Closing Your Eyes to Follow Your Heart	More informative: A creative title has been balanced with a substantive subtitle.

Format. The paper title should be in title case (see Section 6.17), bold, centered, and positioned in the upper half of the title page (e.g., three or four

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lines down from the top margin of the page). Move the title up to accommodate a longer author note if necessary. If the title is longer than one line, the main title and the subtitle can be separated on double-spaced lines if desired. Note that the paper title also appears at the top of the first page of text (see Sections 2.11 and 2.28).

2.5 Author Name (Byline)

Every paper includes the name of the author or authors—the byline. The preferred form of an author's name is first name, middle initial(s), and last name; this form reduces the likelihood of mistaken identity (e.g., that authors with the same first and last names are the same person). To assist researchers and librarians, use the same form of your name for publication throughout your career when possible; for example, do not use a middle initial on one paper and omit the initial on a different paper. Determining whether, for example, Marisol G. Rodríguez is the same person as M. G. Rodríguez can be difficult, particularly when citations span years and institutional affiliations change. If you change your name during your career, present your new name in a consistent form as well. Omit all professional titles (e.g., Dr., Professor) and academic degrees or licenses (e.g., PhD, EdD, MD, MA, RN, MSW, LCSW) from the byline.

Format. Write the byline on the title page after the paper title. Include one blank double-spaced line between the paper title and the byline. Follow these guidelines for byline formatting:

- If the paper has one author, write the author name centered and in standard (i.e., nonbold, nonitalic) font.
- If the paper has multiple authors, order the names of the authors according to their contributions. Write all names on the same line (flowing onto additional lines if needed), centered, and in standard font. For two authors, separate the names with the word "and"; for three or more authors, separate the names with commas and include "and" before the final author's name.
- For names with suffixes, separate the suffix from the rest of the name with a space, not a comma (e.g., Roland J. Thorpe Jr.).

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See Table 2.2 for examples of how to set up author bylines and affiliations.

Table 2.2 Examples of Author Bylines and Affiliations

Variation	Example
One author, one affiliation	Maggie C. Leonard Department of Psychology, George Mason University
One author, two affiliations	Andrew K. Jones-Willoughby School of Psychology, University of Sydney Center for Behavioral Neuroscience, American University
One author, no institutional affiliation	Isabel de Vries Rochester, New York, United States
Two authors, shared affiliation	Mackenzie J. Clement and Talia R. Cummings College of Nursing, Michigan State University
Two authors, different affiliations	Wilhelm T. Weber[1] and Latasha P. Jackson[2] [1] Max Planck Institute for Human Development, Berlin, Germany [2] College of Education, University of Georgia
Three or more authors, shared affiliation	Madina Wahab, DeAndre L. Washington Jr., and Julian H. Lee School of Public Health, University of California, Berkeley
Three or more authors, different affiliations	Savannah C. St. John[1], Fen-Lei Chang[2, 3], and Carlos O. Vásquez III[1] [1] Educational Testing Service, Princeton, New Jersey, United States [2] MRC Cognition and Brain Sciences Unit, Cambridge, England [3] Department of Psychology, University of Cambridge

2.6 Author Affiliation

The affiliation identifies where the author(s) worked (or studied, in the case of student authors) when the work was conducted, which is usually a university or other institution. Include a dual affiliation only if two institutions contributed substantial support to the study. Include no more than two affiliations per author. If the affiliation has changed since the work was completed, give the current affiliation in the author note (see Section 2.7). Abide by these guidelines when presenting affiliations:

- Academic affiliations (e.g., universities, teaching hospitals affiliated with a university) should include the name of any department or division and the name of the institution, separated by a comma. It is not necessary to

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include the location of the institution unless the location is part of the institution's name.

- Nonacademic institutional affiliations (e.g., hospitals not affiliated with a university, independent laboratories, other organizations) should include the name of any department or division, the name of the institution, and the location of the institution, separated by commas.
- Authors who are in private practice or who have no institutional affiliation should include their location.
- When providing a location (as for nonacademic institutions and private practices), give the city; state, province, or territory as applicable; and country. Spell out state, province, and territory names rather than abbreviating them.

Format. The format of the affiliation depends on the number of authors and whether different authors have different affiliations, as follows. Begin the affiliation(s) on a new line after the byline. Place different affiliations on their own lines. Do not add blank lines between affiliations or between the byline and the first affiliation. See Table 2.2 for examples of how to set up author bylines and affiliations.

All Authors Share One Affiliation. If the paper has one author with one affiliation, or if all authors of a multiauthored paper share one affiliation, include the affiliation centered and in standard font on its own line, beginning one line below the byline. Do not include a superscript numeral.

All Authors Share Two Affiliations. If the paper has one author with two affiliations, or if all authors of a multiauthored paper share the same two affiliations, include each affiliation centered and in standard font on its own line, beginning one line below the byline. Do not include superscript numerals.

Multiple Authors With Different Affiliations. If the paper has two or more authors with different affiliations (even if only the department is different within the same university), use superscript Arabic numerals to connect author names to the appropriate affiliation(s). List authors' affiliations in the order the authors appear in the byline; for example, for a paper with two

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authors who have different affiliations, list the affiliation of the first author first, followed by the affiliation of the second author, with each affiliation centered and in standard font on its own line, beginning one line below the byline. Place a superscript numeral 1 after the first author's surname, without a space between the name and the numeral (when a paper has three or more authors and thus commas appear after author names, put the numeral after the surname and before the comma). Then put a corresponding superscript numeral 1 before the corresponding affiliation (with a space between the numeral and the start of the affiliation). Repeat this process for the second author using the numeral 2 (and so on when a paper has more authors).

If some, but not all, authors share an affiliation, list the affiliation once and reuse the superscript numeral in the byline. Identify authors with two affiliations in the byline by separating the appropriate superscript numerals with a superscript comma and space.

If the paper has only one author, or if there are multiple authors but all authors share the same one or two affiliations, then superscript numerals are not used.

Group Authors. For group authors (e.g., task forces, working groups, organizations), superscript numerals are not usually used because the group is essentially its own affiliation.

2.7 Author Note

An author note provides additional information about authors, study registration, data sharing, disclaimers or statements regarding conflicts of interest, and help or funding that supported the research. It also provides a point of contact for interested readers. Student papers do not typically include an author note.

Arrange the author note into separate paragraphs; if a paragraph is not applicable to your manuscript, omit it from the author note. Also, the following requirements apply for manuscripts submitted to APA journals; other publishers may have different requirements (e.g., some journals require authors to provide disclosures and acknowledgments on a separate page at the end of the manuscript rather than in the author note).

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First Paragraph: ORCID iDs. Authors may include their ORCID identification number (iD), if they have one (see the ORCID website at https://orcid.org/ for more information). ORCID iDs help authors who have changed names or who share the same name ensure publications are correctly attributed to them. Provide the author's name, the ORCID iD symbol, and the full URL for the ORCID iD, listing each author on a separate, indented line. The iD symbol should be included in the link, per ORCID's recommendation.

Josiah S. Carberry https://orcid.org/0000-0002-1825-0097
Sofia Maria Hernandez Garcia https://orcid.org/0000-0001-5727-2427

Include only the names of authors who have ORCID iDs. If no authors have ORCID iDs, omit this paragraph.

Second Paragraph: Changes of Affiliation. Identify any changes in author affiliation subsequent to the time of the study. Use the following wording: "[Author's name] is now at [affiliation]." This paragraph may also be used to acknowledge the death of an author.

Third Paragraph: Disclosures and Acknowledgments. If the disclosures and acknowledgments are short, combine them into one paragraph; if they are long, separate them into multiple paragraphs.

Study Registration. If the study was registered, provide the registry name and document entry number in the author note. Clinical trials and meta-analyses are often registered. For example, write "This study was registered with ClinicalTrials.gov (Identifier NCT998877)." For more information on study registration information as it pertains to JARS, see Section 3.9.

Open Practices and Data Sharing. If the study data and/or materials are to be shared openly as part of the publication of the article (see also Section 1.14), acknowledge this in the author note. Cite the data set in the author note, and include the reference for the data set in the reference list (see Section 10.9).

Disclosure of Related Reports and Conflicts of Interest. If the article is based on data used in a previously published report (e.g., a longitudinal study), doctoral dissertation, or conference presentation, disclose this information, and include an in-text citation. For example, write "This article is based on

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data published in Pulaski (2017)" or "This article is based on the dissertation completed by Graham (2018)" and include an entry for Pulaski (2017) or Graham (2018) in the reference list. Also acknowledge the publication of related reports (e.g., reports on the same data). In addition, indicate in this paragraph whether any author has a possible or perceived conflict of interest (e.g., ownership of stock in a company that manufactures a drug used in the study); if not, state that no conflict of interest exists. If your employer or granting organization requires a disclaimer stating, for example, that the research reported does not reflect the views of that organization, include such a statement in this paragraph and follow the format or wording prescribed by that organization.

Acknowledgments of Financial Support and Other Assistance. Complete and accurate funding information for your article should be included in the author note. Report the names of all funding organizations; all grant, fellowship, or award numbers and/or names; the names of the funding recipients; and the names of principal investigators (if any) for the funded research. Do not precede grant numbers by "No." or "#" (e.g., write "We received funding from Grant A-123 from the National Science Foundation" or "National Science Foundation Grant A-123 funded this work," not "Grant No. A-123" or "Grant #A-123"). Next, acknowledge colleagues who assisted in conducting the study or critiquing the manuscript but who are not authors of the work. Study participants may be acknowledged for exceptional contributions if desired. Then provide any thanks for personal assistance, such as in manuscript preparation or copyediting. End this paragraph by explaining any special agreements concerning authorship, such as if authors contributed equally to the study. Do not acknowledge the people routinely involved in the review and acceptance of manuscripts in this paragraph, such as peer reviewers, editors, associate editors, and consulting editors of the journal to which you are submitting the manuscript. If you would like to acknowledge a specific idea raised by a reviewer or journal editor, do so in a footnote in the text where the idea is discussed.

Fourth Paragraph: Contact Information. The corresponding author answers queries regarding the work after it is published and ensures that any data are retained for the appropriate amount of time. Any author can serve as

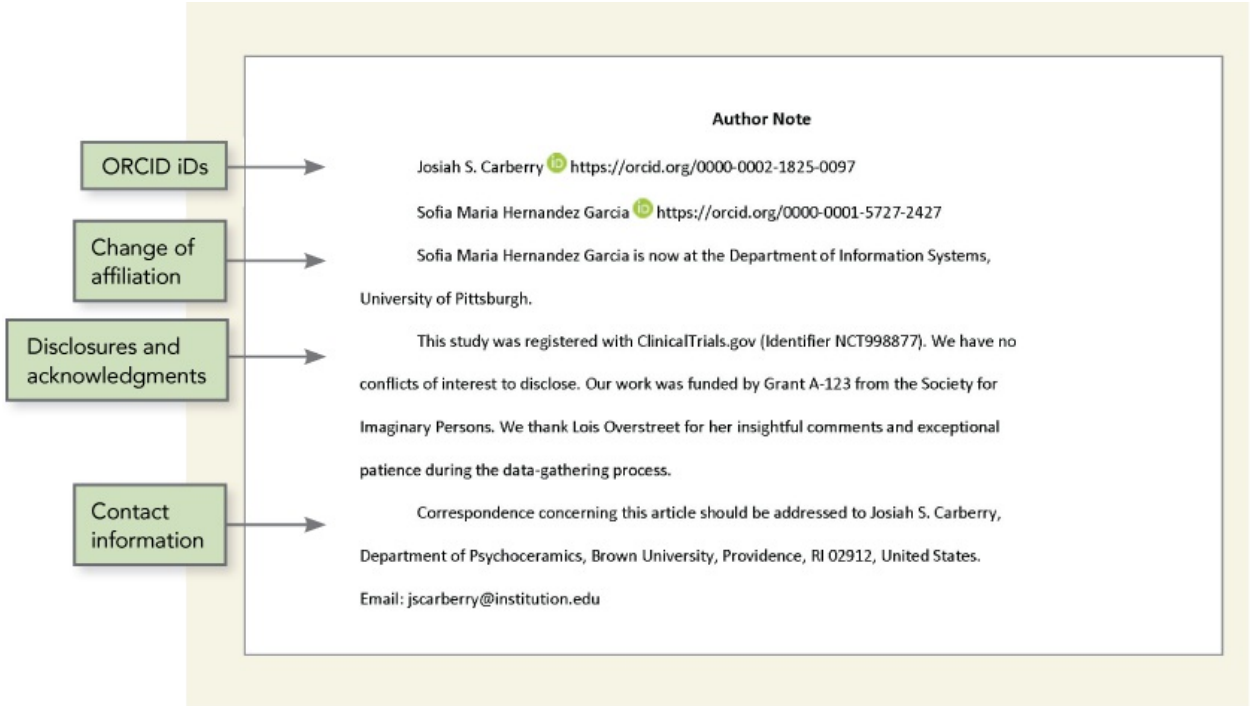
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the corresponding author. Provide the full name and complete mailing address for the corresponding author, with the name and address separated by a comma and a period after the address. Then provide the corresponding author's email address, with no period after it. Use the following format:

> Correspondence concerning this article should be addressed to [author's name], [complete mailing address]. Email: author@institution.edu

Format. Place the author note in the bottom half of the title page, below the title, byline, and affiliation. Leave at least one blank line between the affiliation and the author note label. Center the label "Author Note" (in bold). Indent each paragraph of the author note and align paragraphs to the left. Although the paragraphs of the author note are labeled in this section to help explain them, do not label the paragraphs of the author note in your paper. See Figure 2.3 for a sample author note.

Figure 2.3 Sample Author Note



2.8 Running Head

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The running head is an abbreviated version of the paper title that appears at the top of every page to identify it for readers, especially readers of a print copy of the published article. Running heads are required only for manuscripts being submitted for publication. Running heads are not required for student papers unless the instructor or institution requests them; thus, the header for a student paper includes only the page number.

Authors should supply the running head rather than leave this task to the publisher because authors are best able to select the most important words for an abbreviated title. The running head does not have to consist of the same words in the same order as the title; rather, the idea of the title should be conveyed in a shortened form. For example, an article titled "Restless Nights: Sleep Latency Increases and Sleep Quality Decreases With Caffeine Intake" can have a running head of "CAFFEINE-INDUCED REDUCTIONS IN SLEEP EFFICIENCY."

The running head should contain a maximum of 50 characters, counting letters, punctuation, and spaces between words as characters. If the title is already 50 characters or fewer, the full title can be used as the running head. Avoid using abbreviations in the running head; however, the ampersand symbol (&) may be used rather than "and" if desired.

Format. Write the running head in the page header, flush left, in all-capital letters, across from the right-aligned page number. Use the same running head on every page, including the title page; do not include the label "Running head" to identify the running head on any page (see the sample papers at the end of this chapter).

2.9 Abstract

An abstract is a brief, comprehensive summary of the contents of the paper. Authors writing for publication should follow the reporting standards for abstracts presented in Section 3.3. Most scholarly journals require an abstract. For any journal-specific instructions, consult the instructions for authors or the webpage of the journal to which you plan to submit your article. For example, some journals publish a public significance statement, which summarizes the significance of the study for a general audience, along with

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the abstract. An abstract is not usually required for student papers unless requested by the instructor or institution.

Format. Abstracts typically are limited to no more than 250 words. If you are submitting a work for publication, check the journal's instructions for authors for abstract length and formatting requirements, which may be different from those of APA journals. Place the abstract on its own page after the title page (i.e., page 2). Write the section label "Abstract" in bold title case, centered at the top of the page, and place the abstract below the label.

Abstracts may appear in paragraph or structured format. Abstracts in paragraph format are written as a single paragraph without indentation of the first line. Structured abstracts are also written as a single paragraph without indentation, and labels are inserted to identify various sections (e.g., Objective, Method, Results, Conclusions); use the labels and formatting prescribed by the journal to which you are submitting your manuscript (e.g., APA journals use bold italic for the labels).

2.10 Keywords

Keywords are words, phrases, or acronyms that describe the most important aspects of your paper. They are used for indexing in databases and help readers find your work during a search. For manuscripts being submitted to APA journals, provide three to five keywords describing the content. Keywords are not required for student papers unless requested by the instructor or institution.

Format. Write the label "Keywords:" (in italic) one line below the abstract, indented 0.5 in. like a regular paragraph, followed by the keywords in lowercase (but capitalize proper nouns; see Section 6.14), separated by commas. The keywords can be listed in any order. Do not use a period or other punctuation after the last keyword (see the sample professional paper at the end of this chapter). If the keywords run onto a second line, the second line is not indented.

2.11 Text (Body)

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The text, or body of the paper, contains the authors' main contribution to the literature. Both professional and student authors should follow the content and formatting guidelines described in this chapter and the citation principles described in Chapters 8 and 9; researchers preparing manuscripts for publication should also review the reporting standards for quantitative, qualitative, or mixed methods research, as appropriate, described in Chapter 3. For guidance on the contents of various types of papers, see Sections 1.1 to 1.10.

The text can be organized in many ways, and the organization generally depends on the paper type (see also Sections 1.1–1.10). Most papers include an introduction that addresses the importance of the work, contextualizes the work within the existing literature, and states the aims of the work. Beyond the introduction, the paper should include paragraphs or sections explaining the main premises of the paper. There are many possible formats for the rest of the text; for example, a quantitative research paper typically includes sections called "Method," "Results," and "Discussion," whereas a qualitative research paper may include a section called "Findings" instead of "Results," or it may have different section headings altogether, depending on the nature of the inquiry. A brief student paper (e.g., a response paper) may not have section headings or may have sections with headings different from those described in this manual. See Section 2.26 for more on organization.

Format. The text should start on a new page after the title page and abstract (if the paper includes an abstract). On the first line of the first page of the text, write the title of the paper in title case, bold, and centered. The text should be left-aligned, double-spaced paragraphs, with the first line of each paragraph indented by one tab key (0.5 in.; see Sections 2.23–2.24). Use headings as needed and appropriate within the text to separate sections and to reflect the organizational structure of the content (see Sections 2.26–2.27). Do not start a new page or add extra line breaks when a new heading occurs; each section of the text should follow the next without a break.

2.12 Reference List

The reference list provides a reliable way for readers to locate the works authors cite to acknowledge previous scholarship. References are used to

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document and substantiate statements made about the literature, just as data in the paper are used to support interpretations and conclusions. The references cited in the paper do not need to be exhaustive but should be sufficient to support the need for your research and to enable readers to place it in the context of previous research and theorizing. For detailed guidance on citing sources in the text and preparing the reference list, consult Chapters 8 and 9, respectively.

Format. Start the reference list on a new page after the text and before any tables, figures, and/or appendices. Label the reference list "References," capitalized, in bold, and centered. Double-space all reference list entries (including between and within references). Use a hanging indent for all references, meaning that the first line of each reference is flush left and subsequent lines are indented by 0.5 in. Use the paragraph-formatting function of your word-processing program to automatically apply the hanging indent. For the order of works in the reference list, see Sections 9.44 to 9.49.

2.13 Footnotes

A footnote is a brief note that provides additional content or copyright attribution. Any type of paper may include footnotes.

Content Footnotes. Content footnotes supplement or enhance substantive information in the text; they should not include complicated, irrelevant, or nonessential information. Because they can be distracting to readers, content footnotes should be included only if they strengthen the discussion. A content footnote should convey just one idea; if you find yourself creating paragraphs or displaying equations as you are writing a footnote, then the main text or an appendix would likely be a more suitable place to present the information. Another alternative is to indicate in a short footnote that supplemental material is available online (see Section 2.15). In most cases, authors integrate an idea into an article best by presenting important information in the text, not in a footnote.

Copyright Attribution. When authors reproduce lengthy quotations and/or test or scale items in the text, a copyright attribution is usually required and

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should be presented in a footnote. A reproduced table or figure also requires a copyright attribution, but this attribution appears in the table or figure note. Further directions on seeking permission to reproduce material and appropriate wording for the copyright attribution appear in Sections 12.14 to 12.18.

Footnote Callout Numbering and Format. Number all footnotes consecutively in the order in which their callouts appear in the text with superscript Arabic numerals. Footnote callouts should be superscripted, like this,[1] following any punctuation mark except a dash. A footnote callout that appears with a dash—like this[2]—always precedes the dash. (The callout falls inside a closing parenthesis if it applies only to matter within the parentheses, like this.[3]) Do not put a space before the footnote callout in text. Do not place footnote callouts in headings. To refer to a footnote again after it has been called out, identify it in the text by the footnote number (e.g., write "see Footnote 3"); do not repeat the footnote callout or the whole footnote.

Place each footnote at the bottom of the page on which it is discussed using the footnote function of your word-processing program (see the sample professional paper at the end of this chapter for examples). Footnotes may alternatively be placed in consecutive order on a separate page after the references; in this case, put the section label "Footnotes" in bold, centered at the top of the page; then write the footnotes themselves as double-spaced indented paragraphs that begin with a superscript footnote number, and put a space between the footnote number and the text that follows. Be sure that the number of the footnote callout corresponds with the number that appears with the footnoted text.

2.14 Appendices

Sometimes authors wish to include material that supplements the paper's content but that would be distracting or inappropriate in the text of the paper. Such material can often be included in an appendix, which is included in the print and electronic versions of the article, or in supplemental materials (see Section 2.15), which are available in an online-only supplemental archive that the publisher maintains.

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Include an appendix only if it helps readers understand, evaluate, or replicate the study or theoretical argument being made. Be sure that all relevant ethical standards have been followed for materials placed in the appendices, including copyright attribution, accurate representation of data, and protection of human participants (e.g., as the standards apply to images or videos of identifiable people; see Sections 1.18 and 12.17).

In general, an appendix is appropriate for materials that are relatively brief and easily presented in print format. Some examples of material suitable for an appendix are (a) lists of stimulus materials (e.g., those used in psycholinguistic research); (b) instructions to participants; (c) tests, scales, or inventories developed for the study being reported; (d) detailed descriptions of complex equipment; (e) detailed demographic descriptions of subpopulations in the study; and (f) other detailed or complex reporting items described in Chapter 3. Student papers may include appendices.

Format. Begin each appendix on a separate page after any references, footnotes, tables, and figures. Give each appendix a label and a title. If a paper has one appendix, label it "Appendix"; if a paper has more than one appendix, label each appendix with a capital letter (e.g., "Appendix A," "Appendix B") in the order in which it is mentioned in the text. Each appendix should be mentioned (called out) at least once in the text by its label (e.g., "see Appendix A"). The appendix title should describe its contents. Place the appendix label and title in bold and centered on separate lines at the top of the page on which the appendix begins. Use title case (see Section 6.17) for the appendix label and title.

The appendix may consist of text, tables, figures, or a combination of these. A text appendix may contain headings and displayed equations. If an appendix contains text, write the paragraphs as regular indented paragraphs the same as in the body of the paper. If a text appendix contains tables, figures, footnotes, and/or displayed equations, give each one a number preceded by the letter of the appendix in which it appears (e.g., Table A1 is the first table within Appendix A or of a sole appendix that is not labeled with a letter; Equation B1 is the first equation within Appendix B; Figure C2 is the second figure of Appendix C). In a sole text appendix, which is not labeled with a letter, precede all table, figure, footnote, and equation numbers with the letter "A" to distinguish them from those of the main text. All tables

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and figures within a text appendix must be mentioned in the appendix and numbered in order of mention. The tables and figures within a text appendix should be embedded within the text, as described in Section 7.6.

If an appendix consists of a table only or a figure only, then the appendix label takes the place of the table or figure number, and the appendix title takes the place of the table or figure title. Thus, if Appendix B is a table-only appendix, the table is referred to as Appendix B rather than as Table B1. Likewise, if Appendix C is a figure-only appendix, the figure is referred to as Appendix C rather than as Figure C1. If multiple tables and/or figures (but no text) are combined into one appendix, label and title the appendix and also number and title the tables and/or figures within the appendix (e.g., Tables D1 and D2 are two tables in Appendix D).

2.15 Supplemental Materials

Supplemental materials to a journal article are published online only. These materials enrich readers' experience and understanding of the content of the article. Online-only publication tends to be appropriate for materials that are more useful when available as downloadable files and for materials that are not easily presented in print. Student papers do not typically include supplemental materials.

Some examples of content provided as supplemental materials are

- video clips, audio clips, or animations
- lengthy computer code
- details of mathematical or computational models
- oversized tables
- detailed intervention protocols
- expanded methodology descriptions
- color figures or other images (see Section 7.26)
- printable templates and worksheets
- data files (e.g., generated using SPSS or other software)

Supplemental materials should include enough information to make their content interpretable when accompanied by the published text. Also keep in mind accessibility guidelines as they pertain to online or interactive materials to ensure that your files are not only openable but also accessible to all

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readers.[1] Complete data sets should be made available, as appropriate, in online repositories or archives (see Section 10.9 for the reference format) or in supplemental materials. See Sections 1.14 and 1.15 for more on data retention and sharing.

Because this content may be useful to the field, APA and many other publishers make it possible to provide supplemental materials to a wide audience by posting them online and placing a link with the published article. These files (like appendices) then become part of the primary journal record and cannot be augmented, altered, or deleted. As such, materials for inclusion in supplemental materials should be submitted in formats that are widely accessible. We recommend checking with the journal publisher for preferred file types and any limitations.

Less widely used file formats, including TeX, LaTeX, any client- or server-side scripting (e.g., Java, CGI), executable files, and software applications, might be acceptable but of less use to readers who do not have access to specialized programs. Because of the risk of downloading embedded viruses or malware, many uncommon file types or executable files may be blocked by firewalls and antivirus protection programs, system administrators, or users. Therefore, we do not recommend using such file types unless they are critical to understanding or using your material (e.g., syntax from a methodological paper such as an SPSS macro might be saved with an SPS extension so that it can be used directly by other researchers). Briefly describe any supplemental materials in the text or a footnote to the text as appropriate (see Section 2.13).

Most journals make supplemental materials subject to peer review and require that they be submitted with the initial manuscript. Once accepted, the supplemental materials are typically posted with no editing, formatting, or typesetting. For APA journals, a link to the supplemental materials appears in the published article and leads readers to a landing page that includes a bibliographic citation, a link to the published article, and a context statement and link for each supplemental file (see an example of a landing page at https://on.apa.org/2CmDGd6). Other journals may include links in the article that directly open the supplemental files. See Chapter 3 for more details on the role of supplemental materials in JARS. See the APA website

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(https://on.apa.org/2Qo7OhX) for additional information about supplemental materials.

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Format

2.16 Importance of Format

Use the guidelines in this section to format all APA Style papers. The physical appearance of a paper can enhance or detract from it. A well-prepared paper encourages editors and reviewers, as well as instructors in the case of student work, to view authors' work as professional. In contrast, mechanical flaws can lead reviewers or instructors to misinterpret content or question the authors' expertise or attention to detail, and students may receive a lower grade because of formatting errors. For manuscripts being submitted for publication, publishers will use your word-processing file to produce the typeset version of your article, so it is important that you properly format your article.

2.17 Order of Pages

Arrange the pages of the paper in the following order:

- title page (page 1)
- abstract (start on a new page after the title page)
- text (start on a new page after the abstract, or after the title page if the paper does not have an abstract)
- references (start on a new page after the end of the text)
- footnotes (start on a new page after the references)
- tables (start each on a new page after the footnotes)
- figures (start each on a new page after the tables)
- appendices (start each on a new page after the tables and/or figures)

APA Style provides options for the display of footnotes, tables, and figures. Footnotes may appear either in the footer of the page where they are first mentioned (see Section 2.13) or on a separate page after the references. Tables and figures may be embedded within the text after they have been mentioned, or each table and figure can be displayed on a separate page after the footnotes (or after the references if there is no footnotes page; see Section 7.6).

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2.18 Page Header

All papers should contain the page number, flush right, in the header of every page. Use the automatic page-numbering function of your word-processing pro-gram to insert page numbers in the top right corner; do not type page numbers manually. The title page is page number 1.

Manuscripts being submitted for publication should contain the running head (see Section 2.8) in the page header in addition to the page number. When both elements appear, the running head should be flush left and the page number should be flush right. Student papers need only the page number in the page header, unless the instructor or institution also requires a running head.

2.19 Font

APA Style papers should be written in a font that is accessible to all users. Historically, sans serif fonts have been preferred for online works and serif fonts for print works; however, modern screen resolutions can typically accommodate either type of font, and people who use assistive technologies can adjust font settings to their preferences. Thus, a variety of font choices are permitted in APA Style; also check with your publisher, instructor, or institution for any requirements regarding font.

Use the same font throughout the text of the paper. Options include

- a sans serif font such as 11-point Calibri, 11-point Arial, or 10-point Lucida Sans Unicode or
- a serif font such as 12-point Times New Roman, 11-point Georgia, or normal (10-point) Computer Modern (the latter is the default font for LaTeX).

We recommend these fonts because they are legible and widely available and because they include special characters such as math symbols and Greek letters.

An APA Style paper may contain other fonts or font sizes under the following circumstances:

- Within figure images, use a sans serif font with a type size between 8 and 14 points.

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- When presenting computer code, use a monospace font, such as 10-point Lucida Console or 10-point Courier New.
- When presenting a footnote in a page footer, the default footnote settings of your word-processing program are acceptable (e.g., 10-point font with single line spacing).

Because different fonts take up different amounts of space on the page, we recommend using word count rather than page count to gauge paper length (see Section 2.25). See the APA Style website (https://apastyle.apa.org) for further discussion of font and accessible typography.

2.20 Special Characters

Special characters are accented letters and other diacritical marks, Greek letters, math signs, and symbols. Type special characters using the special character functions of your word-processing program or a plug-in such as MathType. Characters that are not available should be presented as images. For more information on Greek letters and mathematical symbols, see Sections 6.44 and 6.45.

2.21 Line Spacing

Double-space the entire paper, including the title page, abstract, text, headings, block quotations, reference list, table and figure notes, and appendices, with the following exceptions:

- **title page:** Elements of the title page are double-spaced, and an additional double-spaced blank line appears between the title and byline. At least one double-spaced blank line also appears between the final affiliation and any author note (see Figure 2.1).
- **table body and figure image:** The table body (cells) and words within the image part of a figure may be single-spaced, one-and-a-half-spaced, or double-spaced, depending on what format creates the most effective presentation of the data. If text appears on the same page as a table or figure, insert a double-spaced blank line between the text and the table or figure (for more information on placement of tables and figures, see Section 7.6).

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- **footnotes:** Footnotes that appear at the bottom of the page on which they are called out should be single-spaced and formatted with the default settings of your word-processing program. Footnotes that appear on their own page after the references should be formatted like regular paragraphs of text—that is, indented and double-spaced.
- **displayed equations:** It is permissible to apply triple- or quadruple-spacing in special circumstances, such as before and after a displayed equation.

It is not necessary to add blank lines before or after headings, even if a heading falls at the end of a page. Do not add extra spacing between paragraphs.

2.22 Margins

Use 1-in. (2.54-cm) margins on all sides (top, bottom, left, and right) of the page. This is the default page margin in most word-processing programs. Dissertations and theses may have different requirements if they are to be bound (e.g., 1.5-in. left margins).

2.23 Paragraph Alignment

Align the text to the left and leave the right margin uneven ("ragged"). Do not use full justification, which adjusts the spacing between words to make all lines the same length (flush with the margins). Do not manually divide words at the end of a line, and do not use the hyphenation function to break words at the ends of lines. Do not manually insert line breaks into long DOIs or URLs; however, breaks in DOIs or URLs applied automatically by a word-processing program are permissible.

2.24 Paragraph Indentation

Indent the first line of every paragraph 0.5 in. For consistency, use the tab key or the automatic paragraph-formatting function of your word-processing program. The default settings in most word-processing programs are acceptable. The remaining lines of the paragraph should be left-aligned.

Exceptions to these paragraph indentation requirements are as follows:

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- For professional papers, the title (in bold), byline, and affiliations on the title page should be centered (see Figure 2.1).
- For student papers, the title (in bold), byline, affiliations, course number and name, instructor, and assignment date should be centered (see Figure 2.2).
- Section labels should be centered (and bold; see Section 2.28).
- The first line of the abstract should be flush left (not indented; see Section 2.9).
- The entirety of a block quotation should be indented from the left margin 0.5 in. If the block quotation spans more than one paragraph, the first line of the second and any subsequent paragraphs of the block quotation should be indented another 0.5 in., such that those first lines are indented a total of 1 in. (see Section 8.27).
- Level 1 headings should be centered (and in bold), and Level 2 and 3 headings should be left-aligned (and in bold or bold italic, respectively; see Section 2.27).
- Table and figure numbers (Sections 7.10 and 7.24, respectively), titles (Sections 7.11 and 7.25), and notes (Sections 7.14 and 7.28) should be flush left.
- Reference list entries should have a hanging indent of 0.5 in. (see Section 2.12).
- Appendix labels and titles should be centered (and bold; see Section 2.14).

2.25 Paper Length

Journals differ in the average length of articles they publish; consult the journal's instructions for authors to determine the appropriate length for the type of article you are submitting. The length for student papers is determined by the assignment guidelines.

If a paper exceeds the target length, shorten it by stating points clearly and directly, confining discussion to the specific problem under investigation, deleting or combining data displays, eliminating repetition across sections, and writing in the active voice. For guidance on improving sentence and paragraph length, see Section 4.6. A professional paper that is still too long

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may need to be divided into two or more papers, each with a more specific focus (however, see Section 1.16 on piecemeal publication).

Paper length targets may be specified by either page count or word count; we recommend word count because different fonts are slightly different sizes and may produce variations in the number of pages. In general, to determine the page count, count every page, including the title page and reference list. Likewise, to determine word count, count every word from beginning to end, including all in-text citations, reference entries, tables, figures (other than words in a figure image, which may not be captured by word count), and appendices. The default settings of the word-count function of your word-processing program are acceptable for determining the word count. Do not count text in the page header (i.e., running head and/or page numbers) or manually add any words within figure images to the word count (these words are generally not included in the automatic word count in programs such as Microsoft Word, Academic Writer, or Google Docs). If the journal to which you are submitting has different specifications for determining the page count or word count, follow the instructions of the journal.

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Organization

2.26 Principles of Organization

In scholarly writing, sound organizational structure is the key to clear, precise, and logical communication. Before beginning to write, consider the best paper length and structure for your findings. Ordering your thoughts logically at both sentence and paragraph levels will also strengthen the impact of your writing.

Headings in a document identify the topic or purpose of the content within each section. Headings help readers become familiar with how a paper's content is organized, allowing them to easily find the information they seek. Headings should be succinct yet long enough to describe the content; see the sample papers at the end of this chapter for examples of effective headings. Concise headings help readers anticipate key points and track the development of your argument. Headings that are well formatted and clearly worded aid both visual and nonvisual readers of all abilities. Headings must be clearly distinguishable from the text. For a deeper discussion of how to effectively create and use headings (and related text) for all users (including those using assistive technologies), visit the APA Style website (https://apastyle.apa.org).

There are five possible levels of heading in APA Style (see Section 2.27), and all topics of equal importance should have the same level of heading. For example, in a multiexperiment paper, the headings for the Method and Results sections for Experiment 1 should be the same level as the headings for the Method and Results sections for Experiment 2, with parallel wording. In a single-experiment paper, the Method, Results, and Discussion sections should all have the same heading level. Avoid having only one subsection heading within a section, just like in an outline; use at least two subsection headings within a section, or use none (e.g., in an outline, a section numbered with a Roman numeral would be divided into either a minimum of A and B subsections or no subsections; an A subsection could not stand alone).

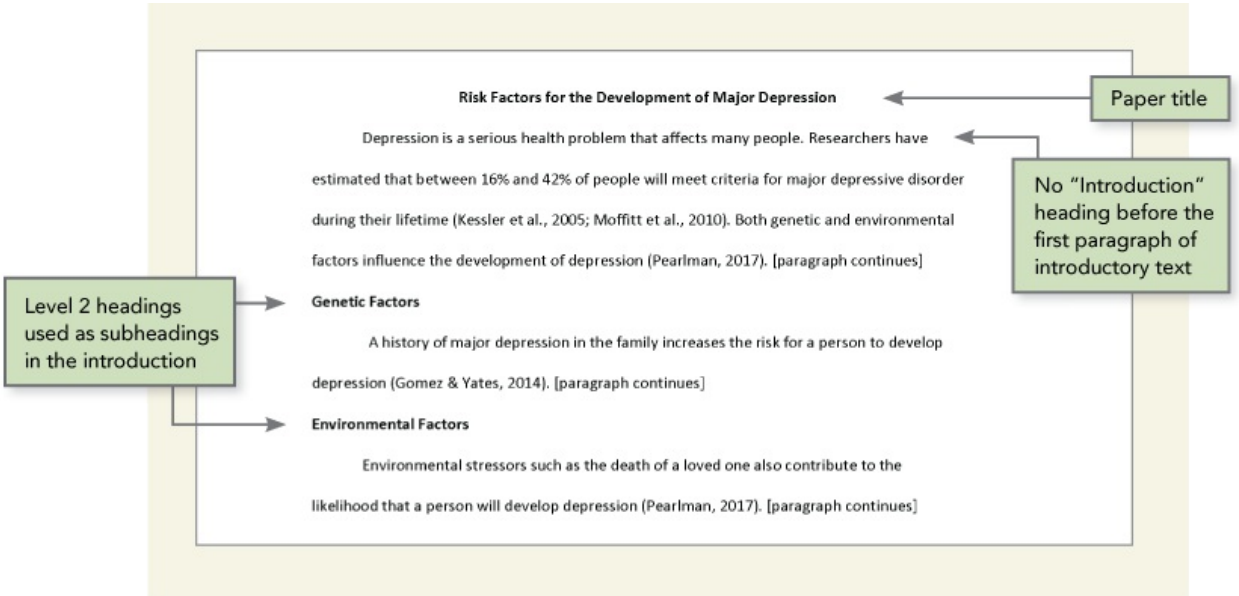
2.27 Heading Levels

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APA Style headings have five possible levels: Level 1 headings are used for top-level or main sections, Level 2 headings are subsections of Level 1, and so on. Regardless of the number of levels of subheading within a section, the heading structure for all sections follows the same top-down progression. Each section starts with the highest level of heading, even if one section has fewer levels of subheading than another section. For example, in a paper with Level 1 Method, Results, and Discussion headings, the Method and Results sections may each have two levels of subheading (Levels 2 and 3), and the Discussion section may have only one level of subheading (Level 2). Thus, there would be three levels of heading for the paper overall.

Headings in the Introduction. Because the first paragraphs of a paper are understood to be introductory, the heading "Introduction" is not needed. Do not begin a paper with an "Introduction" heading; the paper title at the top of the first page of text acts as a de facto Level 1 heading (see Figure 2.4). For subsections within the introduction, use Level 2 headings for the first level of subsection, Level 3 for subsections of any Level 2 headings, and so on. After the introduction (regardless of whether it includes headings), use a Level 1 heading for the next main section of the paper (e.g., Method).

Figure 2.4 Use of Headings in a Sample Introduction



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Number of Headings in a Paper. The number of levels of heading needed for a paper depends on its length and complexity; three is average. If only one level of heading is needed, use Level 1; if two levels are needed, use Levels 1 and 2; if three levels are needed, use Levels 1, 2, and 3; and so forth. Use only the number of headings necessary to differentiate distinct sections in your paper; short student papers may not require any headings. Do not label headings with numbers or letters.[2]

Format. Table 2.3 shows how to format each level of heading, Figure 2.4 demonstrates the use of headings in the introduction, and Figure 2.5 lists all the headings used in a sample paper in correct format. The sample papers at the end of this chapter also show the use of headings in context.

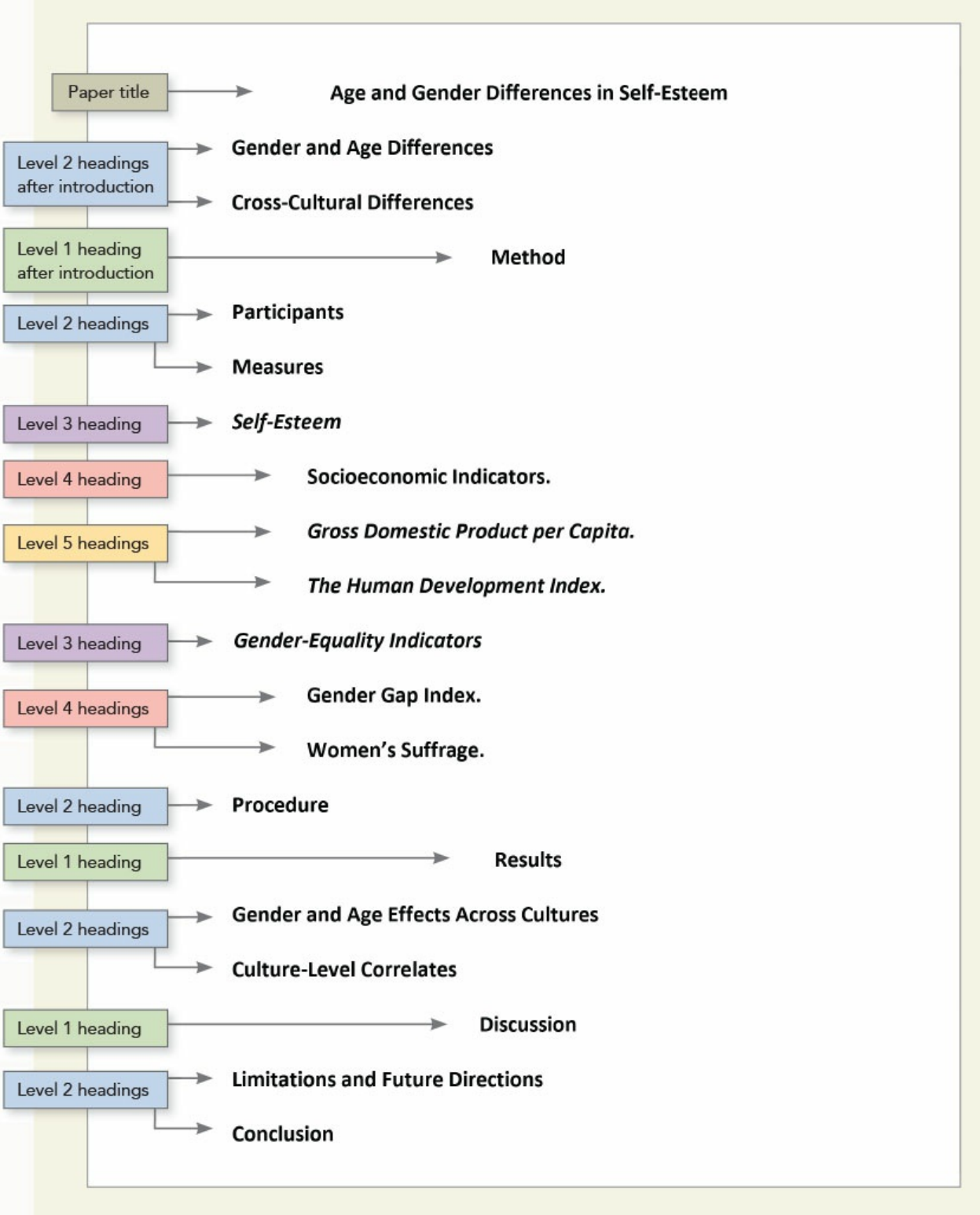
Table 2.3 Format for the Five Levels of Heading in APA Style

Level	Format
1	**Centered, Bold, Title Case Heading** Text begins as a new paragraph.
2	**Flush Left, Bold, Title Case Heading** Text begins as a new paragraph.
3	**Flush Left, Bold Italic, Title Case Heading** Text begins as a new paragraph.
4	**Indented, Bold, Title Case Heading, Ending With a Period.** Text begins on the same line and continues as a regular paragraph.
5	**Indented, Bold Italic, Title Case Heading, Ending With a Period.** Text begins on the same line and continues as a regular paragraph.

Note. In title case, most words are capitalized (see Section 6.17).

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Figure 2.5 Format of Headings in a Sample Paper



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2.28 Section Labels

Section labels include “Author Note,” “Abstract,” the paper title at the top of the first page of text, “References,” “Footnotes,” and “Appendix A” (and other appendix labels). Place section labels on a separate line at the top of the page on which the section begins, in bold and centered.

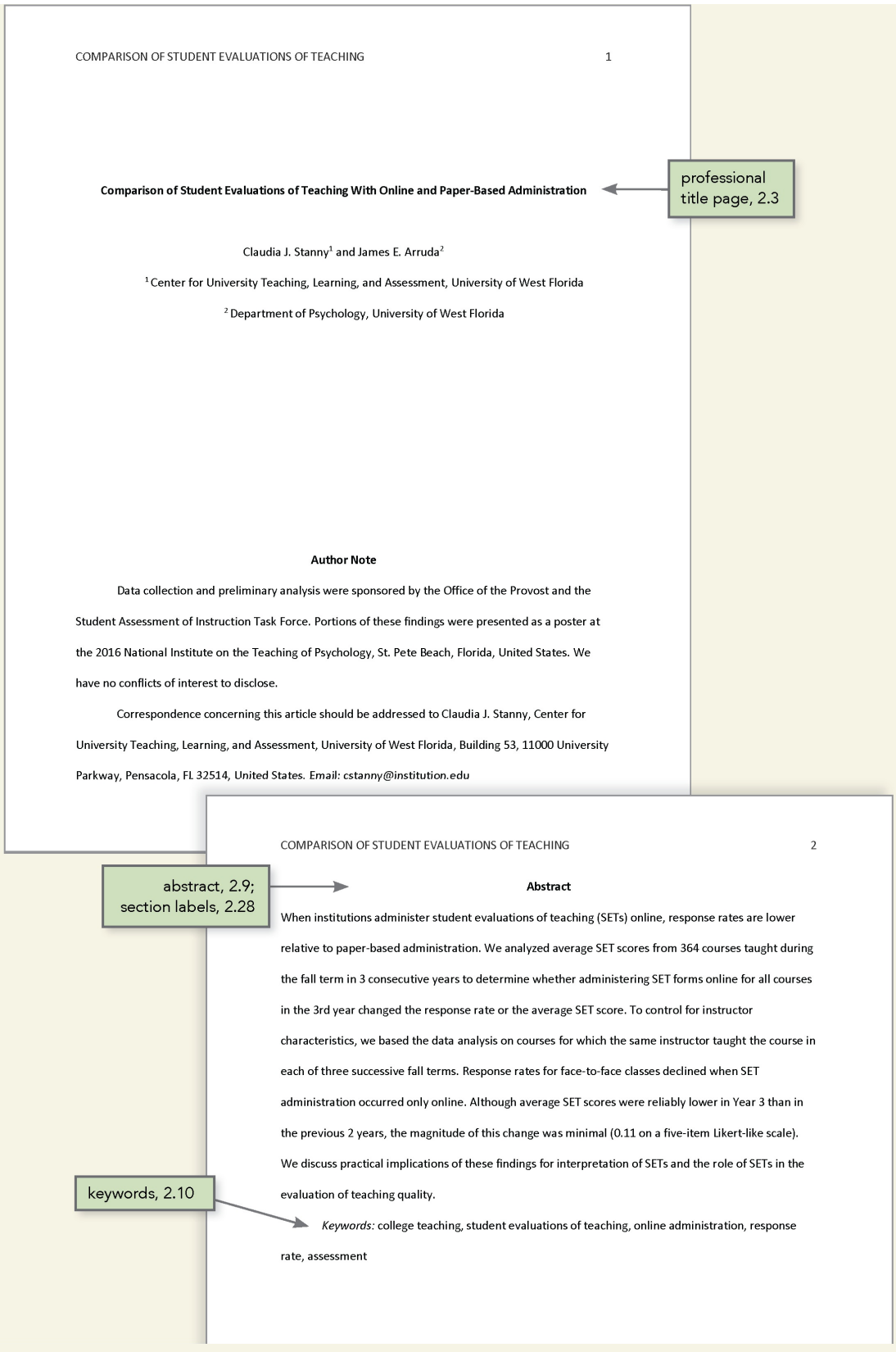
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Sample Papers

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Sample Professional Paper

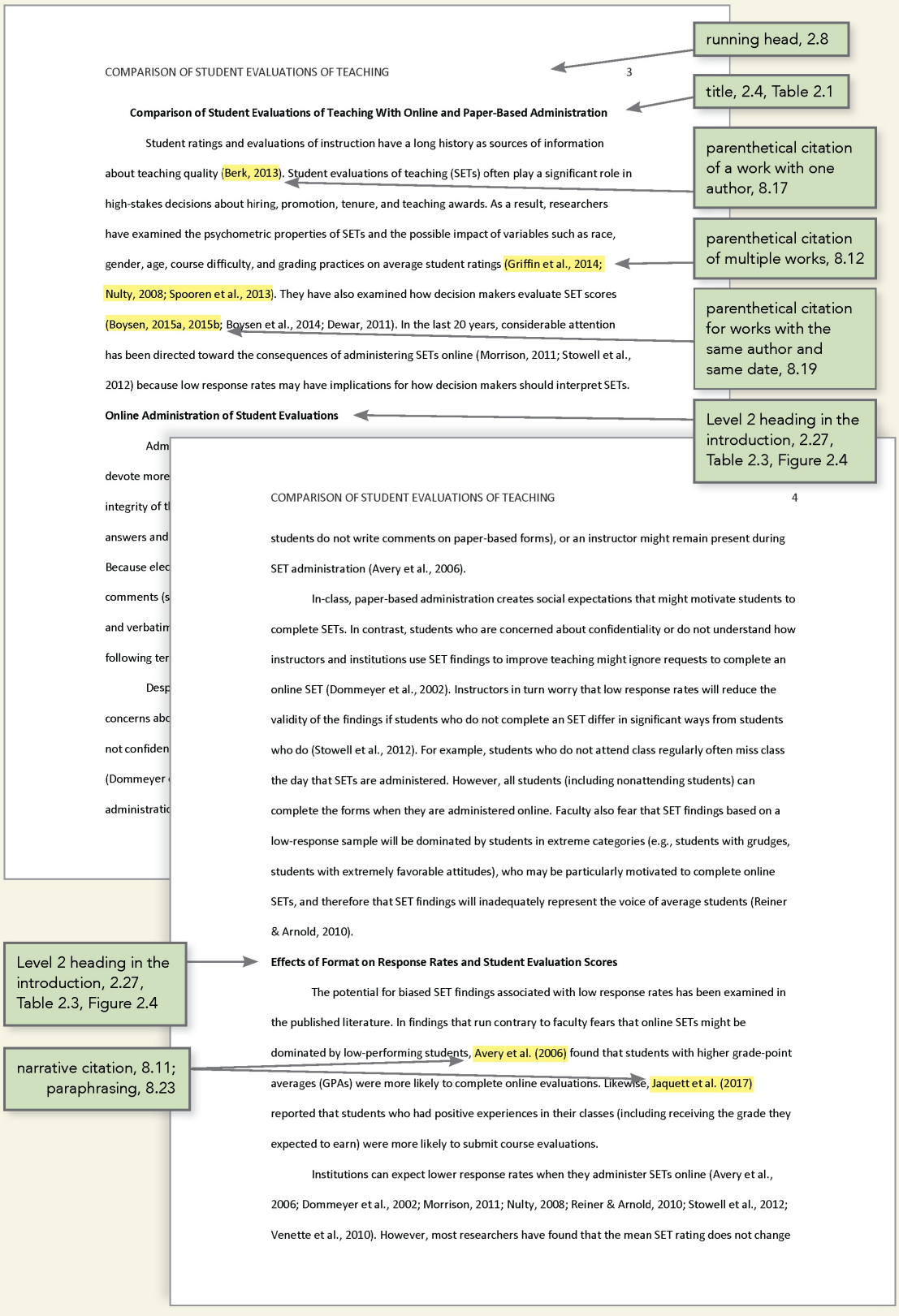
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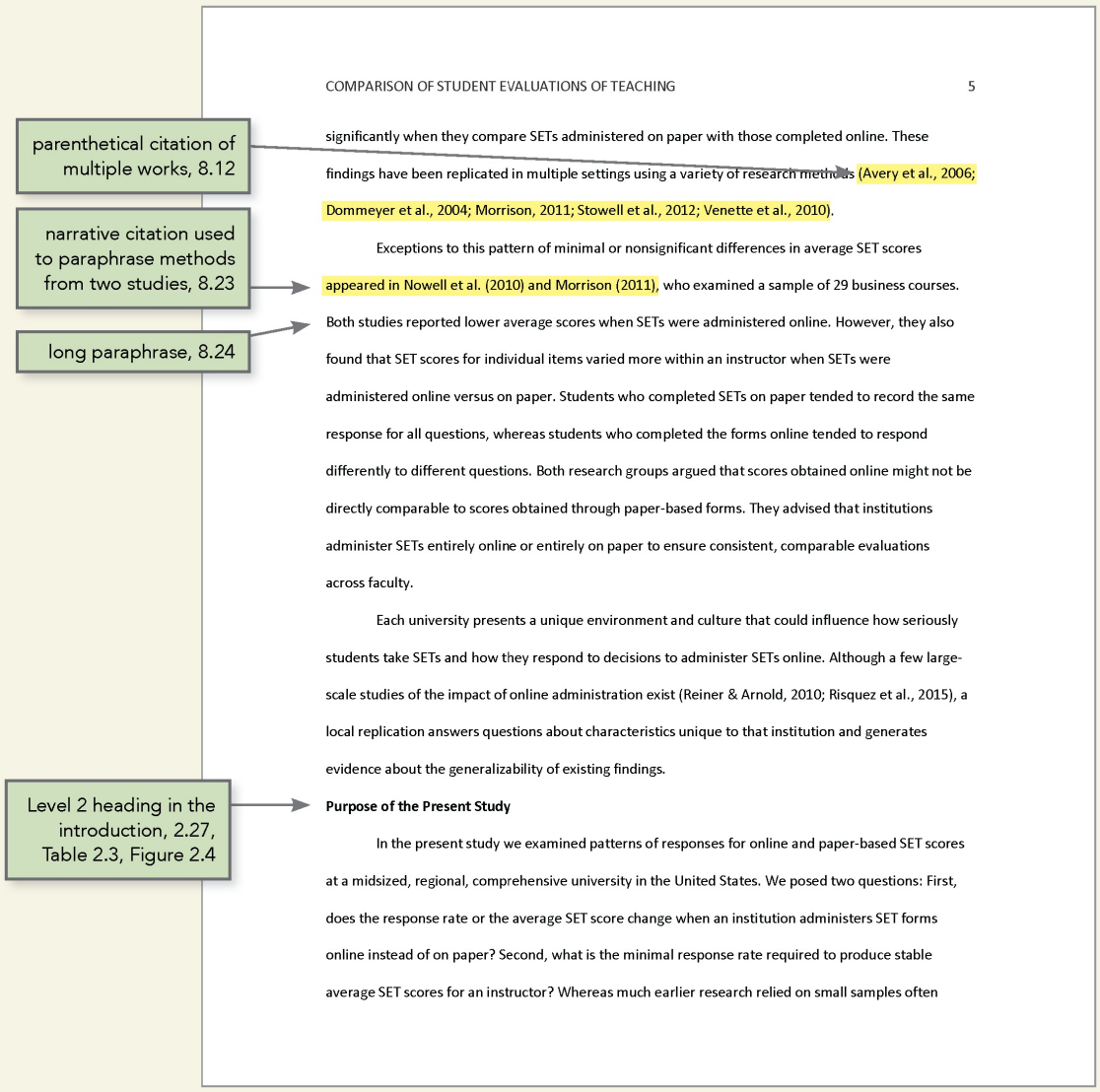
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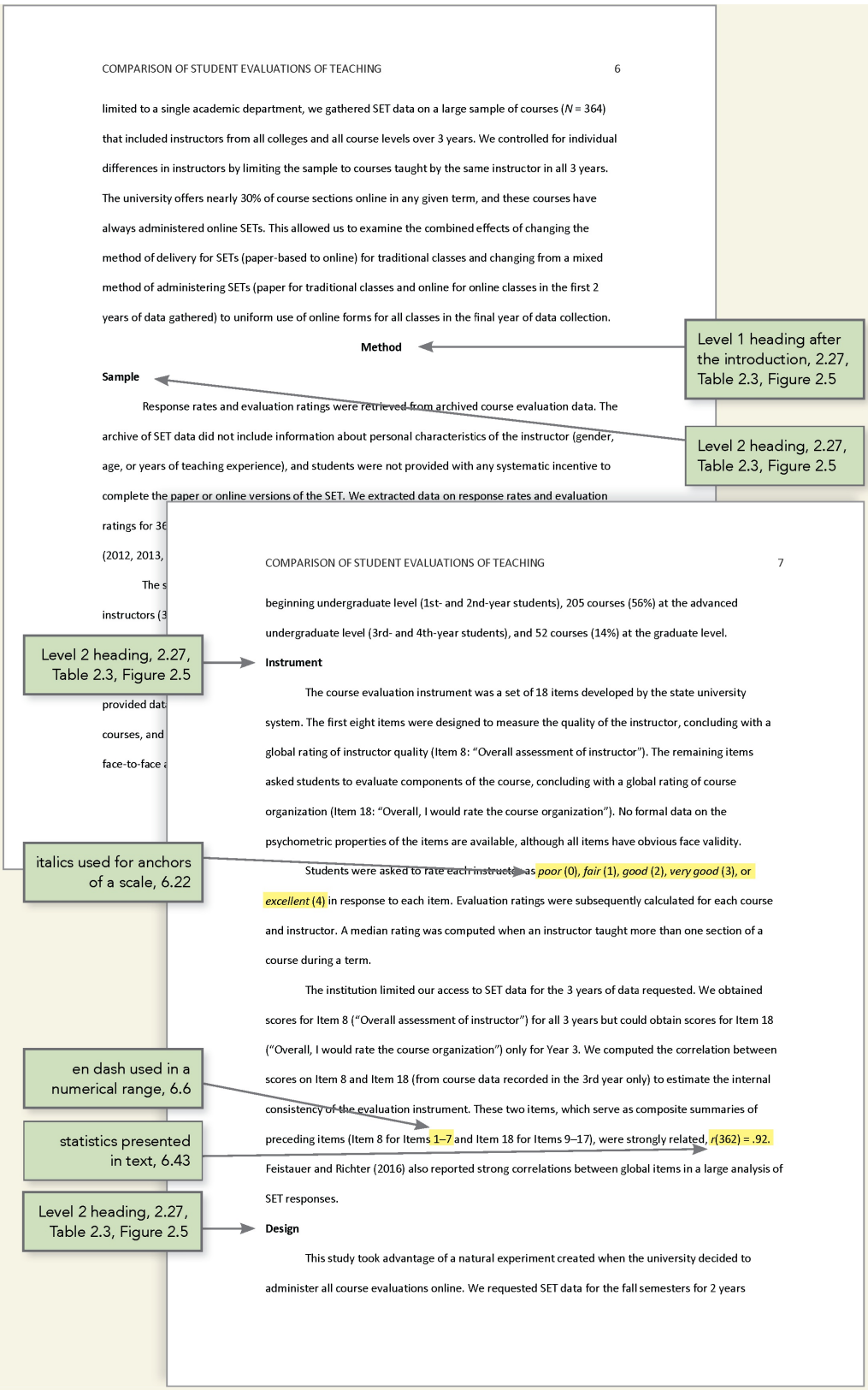
Sample Professional Paper (continued)



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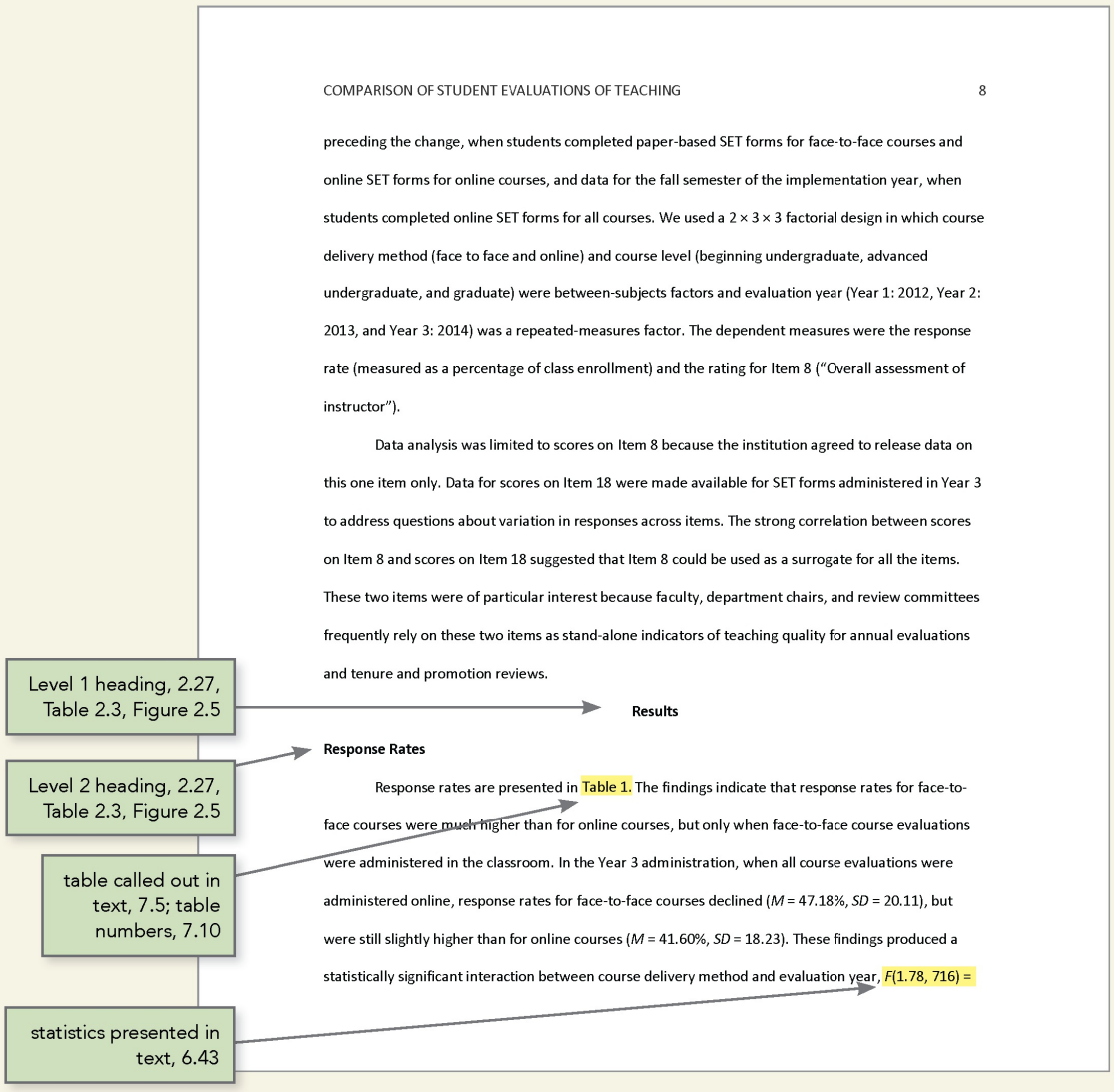
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Sample Professional Paper (continued)



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Sample Professional Paper (continued)

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101.34, *MSE* = 210.61, $p < .001$.[1] The strength of the overall interaction effect was .22 (η_p^2). Simple main-effects tests revealed statistically significant differences in the response rates for face-to-face courses and online courses for each of the 3 observation years.[2] The greatest differences occurred during Year 1 ($p < .001$) and Year 2 ($p < .001$), when evaluations were administered on paper in the classroom for all face-to-face courses and online for all online courses. Although the difference in response rate between face-to-face and online courses during the Year 3 administration was statistically reliable (when both face-to-to-face and online courses were evaluated with online surveys), the effect was small ($\eta_p^2 = .02$). Thus, there was minimal difference in response rate between face-to-face and online courses when evaluations were administered online for all courses. No other factors or interactions included in the analysis were statistically reliable.

Evaluation Ratings

The same 2 × 3 × 3 analysis of variance model was used to evaluate mean SET ratings. This analysis produced two statistically significant main effects. The first main effect involved evaluation year, $F(1.86, 716) = 3.44$, *MSE* = 0.18, $p = .03$ ($\eta_p^2 = .01$; see Footnote 1). Evaluation ratings associated with the Year 3 administration (*M* = 3.26, *SD* = 0.60) were significantly lower than the evaluation ratings associated with both the Year 1 (*M* = 3.35, *SD* = 0.53) and Year 2 (*M* = 3.38, *SD* = 0.54) administrations. Thus, all courses received lower SET scores in Year 3, regardless of course delivery method and course level. However, the size of this effect was small (the largest difference in mean rating was 0.11 on a five-item scale).

[1] A Greenhouse–Geisser adjustment of the degrees of freedom was performed in anticipation of a sphericity assumption violation.
[2] A test of the homogeneity of variance assumption revealed no statistically significant difference in response rate variance between the two delivery modes for the 1st, 2nd, and 3rd years.

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Stability of Ratings

The scatterplot presented in Figure 1 illustrates the relation between SET scores and response rate. Although the correlation between SET scores and response rate was small and not statistically significant, $r(362) = .07$, visual inspection of the plot of SET scores suggests that SET ratings became less variable as response rate increased. We conducted Levene's test to evaluate the variability of SET scores above and below the 60% response rate, which several researchers have recommended as an acceptable threshold for response rates (Berk, 2012, 2013; Nulty, 2008). The variability of scores above and below the 60% threshold was not statistically reliable, $F(1, 362) = 1.53$, $p = .22$.

Discussion

Online administration of SETs in this study was associated with lower response rates, yet it is curious that online courses experienced a 10% increase in response rate when all courses were evaluated with online forms in Year 3. Online courses had suffered from chronically low response rates in previous years, when face-to-face classes continued to use paper-based forms. The benefit to response rates observed for online courses when all SET forms were administered online might be attributed to increased communications that encouraged students to complete the online course evaluations. Despite this improvement, response rates for online courses continued to lag behind those for face-to-face courses. Differences in response rates for face-to-face and online courses might be

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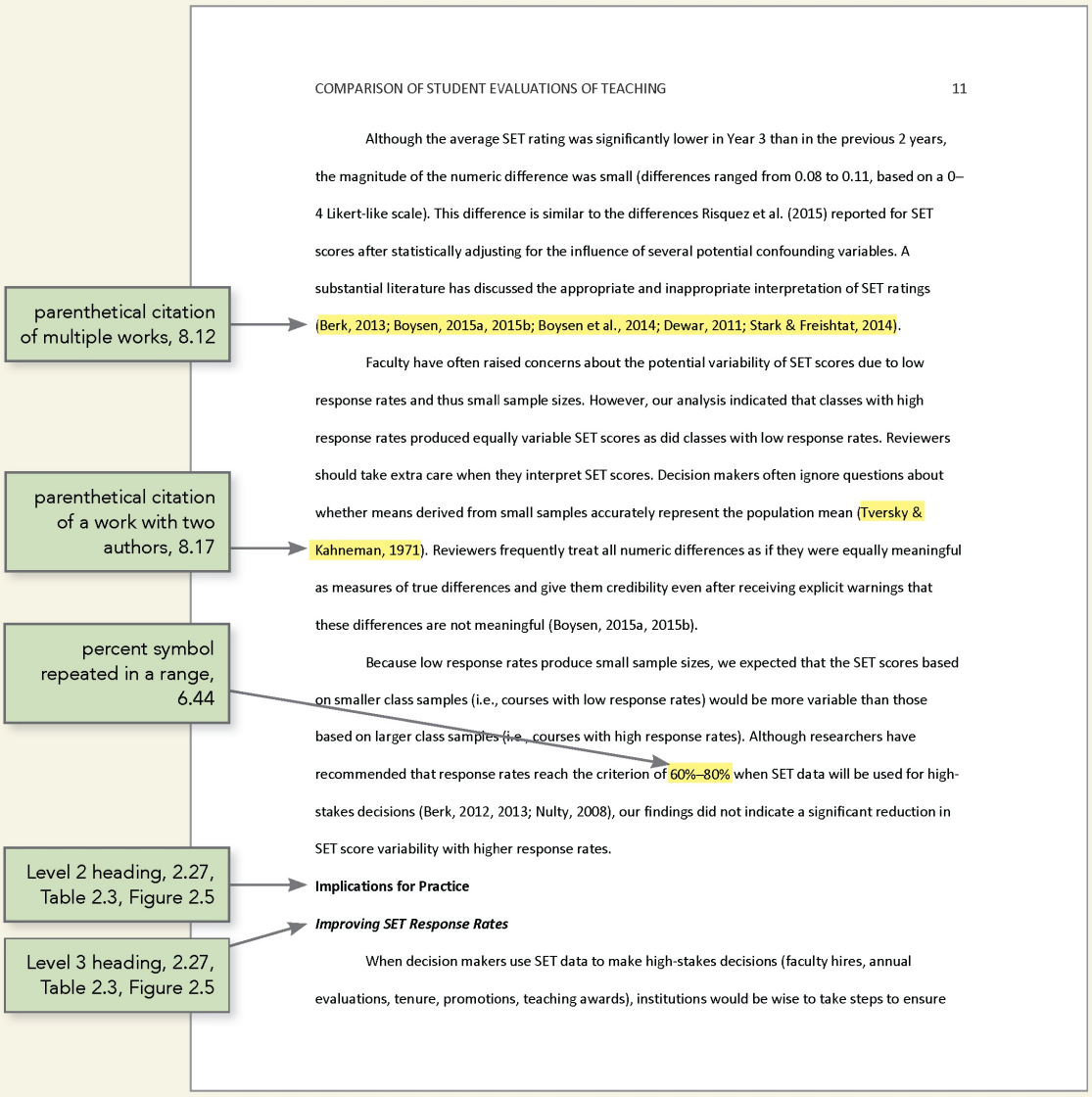
figure called out in text, 7.5; figure numbers, 7.24

parenthetical citation of multiple papers by the same author, 8.12

Level 1 heading, 2.27, Table 2.3, Figure 2.5

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Sample Professional Paper (continued)



COMPARISON OF STUDENT EVALUATIONS OF TEACHING 11

Although the average SET rating was significantly lower in Year 3 than in the previous 2 years, the magnitude of the numeric difference was small (differences ranged from 0.08 to 0.11, based on a 0–4 Likert-like scale). This difference is similar to the differences Risquez et al. (2015) reported for SET scores after statistically adjusting for the influence of several potential confounding variables. A substantial literature has discussed the appropriate and inappropriate interpretation of SET ratings (Berk, 2013; Boysen, 2015a, 2015b; Boysen et al., 2014; Dewar, 2011; Stark & Freishtat, 2014).

Faculty have often raised concerns about the potential variability of SET scores due to low response rates and thus small sample sizes. However, our analysis indicated that classes with high response rates produced equally variable SET scores as did classes with low response rates. Reviewers should take extra care when they interpret SET scores. Decision makers often ignore questions about whether means derived from small samples accurately represent the population mean (Tversky & Kahneman, 1971). Reviewers frequently treat all numeric differences as if they were equally meaningful as measures of true differences and give them credibility even after receiving explicit warnings that these differences are not meaningful (Boysen, 2015a, 2015b).

Because low response rates produce small sample sizes, we expected that the SET scores based on smaller class samples (i.e., courses with low response rates) would be more variable than those based on larger class samples (i.e., courses with high response rates). Although researchers have recommended that response rates reach the criterion of 60%–80% when SET data will be used for high-stakes decisions (Berk, 2012, 2013; Nulty, 2008), our findings did not indicate a significant reduction in SET score variability with higher response rates.

Implications for Practice

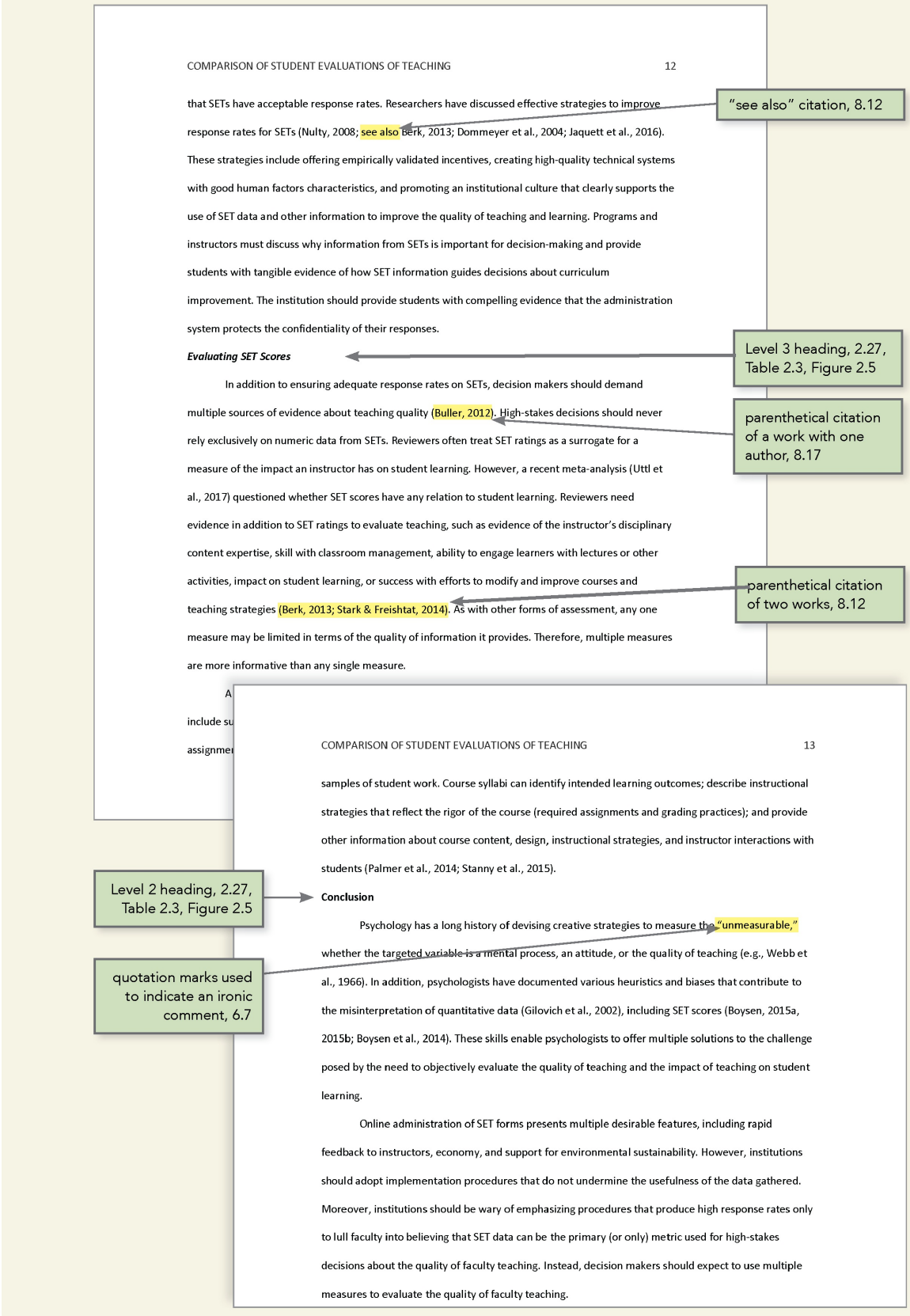
Improving SET Response Rates

When decision makers use SET data to make high-stakes decisions (faculty hires, annual evaluations, tenure, promotions, teaching awards), institutions would be wise to take steps to ensure

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Sample Professional Paper (continued)

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Sample Professional Paper (continued)

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reference list, 2.12, Chapter 9; section labels, 2.28

journal article reference, 10.1

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book reference, 10.2

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Jaquett, C. M., VanMaaren, V. G., & Williams, R. L. (2016). The effect of extra-credit incentives on student submission of end-of-course evaluations. *Scholarship of Teaching and Learning in Psychology*, *2*(1), 49–61. https://doi.org/10.1037/stl0000052

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Sample Professional Paper (continued)

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Uttl, B., White, C. A., & Gonzalez, D. W. (2017). Meta-analysis of faculty's teaching effectiveness: Student evaluation of teaching ratings and student learning are not related. *Studies in Educational Evaluation*, *54*, 22–42. https://doi.org/10.1016/j.stueduc.2016.08.007

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Sample Professional Paper (continued)

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table number, 7.10

table title, 7.11

table note, 7.14

Table 1

Means and Standard Deviations for Response Rates (Course Delivery Method by Evaluation Year)

Administration year	Face-to-face course		Online course	
	M	*SD*	*M*	*SD*
Year 1: 2012	71.72	16.42	32.93	15.73
Year 2: 2013	72.31	14.93	32.55	15.96
Year 3: 2014	47.18	20.11	41.60	18.23

Note. Student evaluations of teaching (SETs) were administered in two modalities in Years 1 and 2: paper based for face-to-face courses and online for online courses. SETs were administered online for all courses in Year 3.

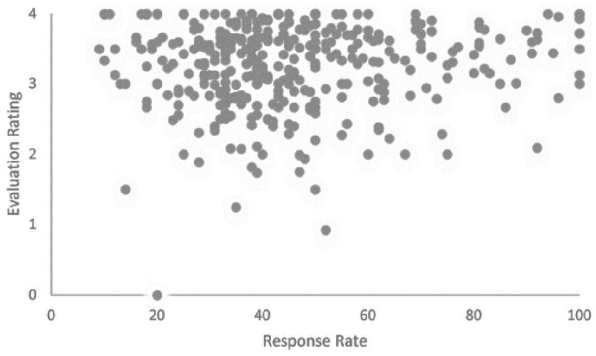
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Figure 1

Scatterplot Depicting the Correlation Between Response Rates and Evaluation Ratings

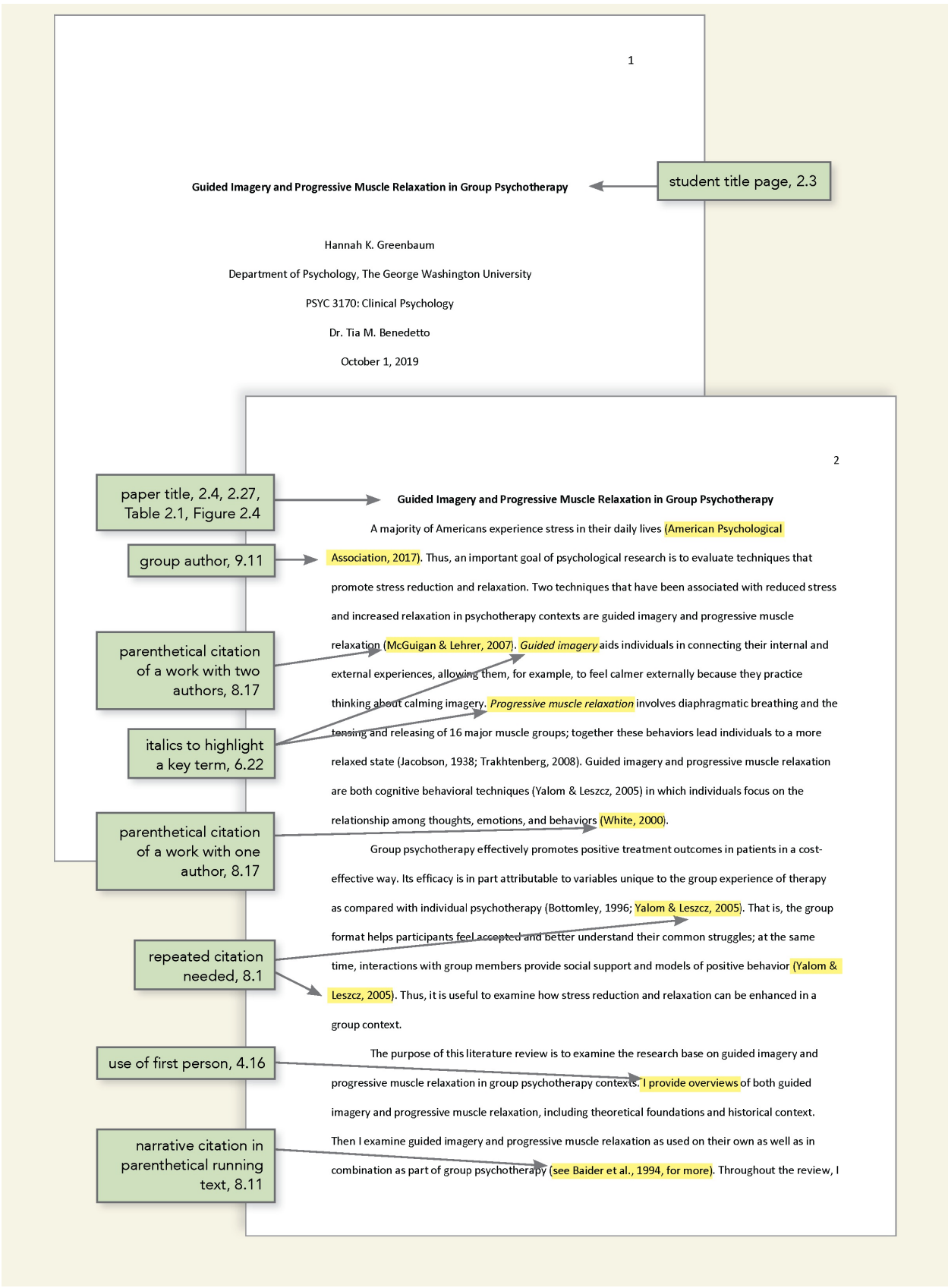


Note. Evaluation ratings were made during the 2014 fall academic term.

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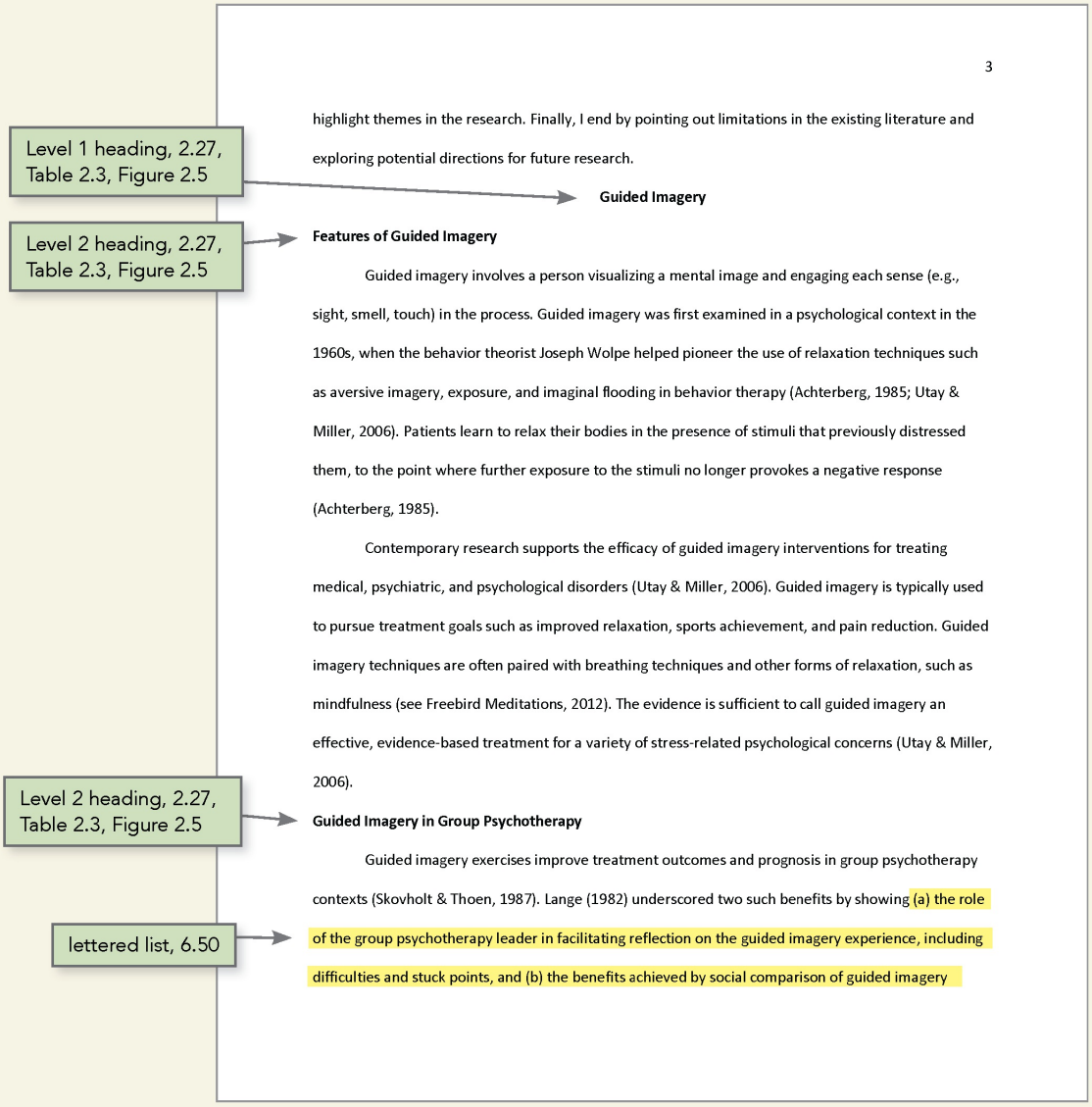
Sample Student Paper

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Sample Student Paper (continued)



3

highlight themes in the research. Finally, I end by pointing out limitations in the existing literature and exploring potential directions for future research.

Level 1 heading, 2.27, Table 2.3, Figure 2.5

Guided Imagery

Level 2 heading, 2.27, Table 2.3, Figure 2.5

Features of Guided Imagery

Guided imagery involves a person visualizing a mental image and engaging each sense (e.g., sight, smell, touch) in the process. Guided imagery was first examined in a psychological context in the 1960s, when the behavior theorist Joseph Wolpe helped pioneer the use of relaxation techniques such as aversive imagery, exposure, and imaginal flooding in behavior therapy (Achterberg, 1985; Utay & Miller, 2006). Patients learn to relax their bodies in the presence of stimuli that previously distressed them, to the point where further exposure to the stimuli no longer provokes a negative response (Achterberg, 1985).

Contemporary research supports the efficacy of guided imagery interventions for treating medical, psychiatric, and psychological disorders (Utay & Miller, 2006). Guided imagery is typically used to pursue treatment goals such as improved relaxation, sports achievement, and pain reduction. Guided imagery techniques are often paired with breathing techniques and other forms of relaxation, such as mindfulness (see Freebird Meditations, 2012). The evidence is sufficient to call guided imagery an effective, evidence-based treatment for a variety of stress-related psychological concerns (Utay & Miller, 2006).

Level 2 heading, 2.27, Table 2.3, Figure 2.5

Guided Imagery in Group Psychotherapy

Guided imagery exercises improve treatment outcomes and prognosis in group psychotherapy contexts (Skovholt & Thoen, 1987). Lange (1982) underscored two such benefits by showing (a) the role of the group psychotherapy leader in facilitating reflection on the guided imagery experience, including difficulties and stuck points, and (b) the benefits achieved by social comparison of guided imagery

lettered list, 6.50

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Sample Student Paper (continued)

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experiences between group members. Teaching techniques and reflecting on the group process are unique components of guided imagery received in a group context (Yalom & Leszcz, 2005).

Empirical research focused on guided imagery interventions supports the efficacy of the technique with a variety of populations within hospital settings, with positive outcomes for individuals diagnosed with depression, anxiety, and eating disorders (Utay & Miller, 2006). Guided imagery and relaxation techniques have even been found to "reduce distress and allow the immune system to function more effectively" (Trakhtenberg, 2008, p. 850). For example, Holden-Lund (1988) examined effects of a guided imagery intervention on surgical stress and wound healing in a group of 24 patients. Patients listened to guided imagery recordings and reported reduced state anxiety, lower cortisol levels following surgery, and less irritation in wound healing compared with a control group. Holden-Lund concluded that the guided imagery recordings contributed to improved surgical recovery. It would be interesting to see how the results might differ if guided imagery was practiced continually in a group context.

Guided imagery has also been shown to reduce stress, length of hospital stay, and symptoms related to medical and psychological conditions (Scherwitz et al., 2005). For example, Ball et al. (2003) conducted guided imagery in a group psychotherapy format with 11 children (ages 5–18) experiencing recurrent abdominal pai
psychotherapy sessions
diaries and parent and ch
pain. Despite a small san
that guided imagery in a

short quotation, 8.25, 8.26

repeated narrative citation with the year omitted, 8.16

"et al." citations for works with three or more authors, 8.17

met once in a group to learn guided imagery and then practiced guided imagery individually on their own (see Menzies et al., 2014, for more). Thus, it is unknown whether guided imagery would have different effects if implemented on an ongoing basis in group psychotherapy.

Progressive Muscle Relaxation

Features of Progressive Muscle Relaxation

Progressive muscle relaxation involves diaphragmatic or deep breathing and the tensing and releasing of muscles in the body (Jacobson, 1938). Edmund Jacobson developed progressive muscle relaxation in 1929 (as cited in Peterson et al., 2011) and directed participants to practice progressive muscle relaxation several times a week for a year. After examining progressive muscle relaxation as an intervention for stress or anxiety, Joseph Wolpe (1960; as cited in Peterson et al., 2011) theorized that relaxation was a promising treatment. In 1973, Bernstein and Borkovec created a manual for helping professionals to teach their clients progressive muscle relaxation, thereby bringing progressive muscle relaxation into the fold of interventions used in cognitive behavior therapy. In its current state, progressive muscle relaxation is often paired with relaxation training and described within a relaxation framework (see Freebird Meditations, 2012, for more).

Research on the use of progressive muscle relaxation for stress reduction has demonstrated the efficacy of the method (McGuigan & Lehrer, 2007). As clients learn how to tense and release different muscle groups, the physical relaxation achieved then influences psychological processes (McCallie et al., 2006). For example, progressive muscle relaxation can help alleviate tension headaches, insomnia, pain, and irritable bowel syndrome. This research demonstrates that relaxing the body can also help relax the mind and lead to physical benefits.

Progressive Muscle Relaxation in Group Psychotherapy

Limited, but compelling, research has examined progressive muscle relaxation within group psychotherapy. Progressive muscle relaxation has been used in outpatient and inpatient hospital

Level 1 heading, 2.27, Table 2.3, Figure 2.5

Level 2 heading, 2.27, Table 2.3, Figure 2.5

secondary source citation, 8.6

narrative citation with the year in the narrative, 8.11

"for more" citation, 8.11

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Sample Student Paper (continued)

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settings to reduce stress and physical symptoms (Peterson et al., 2011). For example, the U.S. Department of Veterans Affairs integrates progressive muscle relaxation into therapy skills groups (Hardy, 2017). The goal is for group members to practice progressive muscle relaxation throughout their inpatient stay and then continue the practice at home to promote ongoing relief of symptoms (Yalom & Leszcz, 2005).

long paraphrase, 8.24

Yu (2004) examined the effects of multimodal progressive muscle relaxation on psychological distress in 121 elderly patients with heart failure. Participants were randomized into experimental and control groups. The experimental group received biweekly group sessions on progressive muscle relaxation, as well as tape-directed self-practice and a revision workshop. The control group received follow-up phone calls as a placebo. Results indicated that the experimental group exhibited significant improvement in reports of psychological distress compared with the control group. Although this study incorporated a multimodal form of progressive muscle relaxation, the experimental group met biweekly in a group format; thus, the results may be applicable to group psychotherapy.

Progressive muscle relaxation has also been examined as a stress-reduction intervention with large groups, albeit not therapy groups. Rausch et al. (2006) exposed a group of 387 college students to 20 min of either meditation, progressive muscle relaxation, or waiting as a control condition. Students exposed to meditation and progressive muscle relaxation recovered more quickly from subsequent stressors than did students in the control condition. Rausch et al. (2006) concluded the following:

time abbreviation, 6.28

block quotation, 8.25, 8.27

> A mere 20 min of these group interventions was effective in reducing anxiety to normal levels . . . merely 10 min of the interventions allowed [the high-anxiety group] to recover from the stressor. Thus, brief interventions of meditation and progressive muscle relaxation may be effective for those with clinical levels of anxiety and for stress recovery when exposed to brief, transitory stressors. (p. 287)

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anxiety.

Guided

Combinations

muscle relaxation, have been shown to improve psychiatric and medical symptoms when delivered in a group psychotherapy context (Bottomley, 1996; Cunningham & Tocco, 1989). The research supports the existence of immediate and long-term positive effects of guided imagery and progressive muscle relaxation delivered in group psychotherapy (Baider et al., 1994). For example, Cohen and Fried (2007) examined the effect of group psychotherapy on 114 women diagnosed with breast cancer. The researchers randomly assigned participants to three groups: (a) a control group, (b) a relaxation psychotherapy group that received guided imagery and progressive muscle relaxation interventions, or (c) a cognitive behavioral therapy group. Participants reported less psychological distress in both intervention groups compared with the control group, and participants in the relaxation psychotherapy group reported reduced symptoms related to sleep and fatigue. The researchers concluded that relaxation training using guided imagery and progressive muscle relaxation in group psychotherapy is effective for relieving distress in women diagnosed with breast cancer. These results further support the utility of guided imagery and progressive muscle relaxation within the group psychotherapy modality.

narrative citation, 8.11; paraphrasing, 8.23

Level 1 heading, 2.27, Table 2.3, Figure 2.5

Conclusion

Limitations of Existing Research

Research on the use of guided imagery and progressive muscle relaxation to achieve stress reduction and relaxation is compelling but has significant limitations. Psychotherapy groups that implement guided imagery and progressive muscle relaxation are typically homogeneous, time limited, and brief (Yalom & Leszcz, 2005). Relaxation training in group psychotherapy typically includes only one

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Sample Student Paper (continued)

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usually expected to practice the techniques by themselves (see Menzies et al., 2014). Future research should address how these relaxation techniques can assist people in diverse groups and how the impact of relaxation techniques may be amplified if treatments are delivered in the group setting over time.

Future research should also examine differences in inpatient versus outpatient psychotherapy groups as well as structured versus unstructured groups. The majority of research on the use of guided imagery and progressive muscle relaxation with psychotherapy groups has used unstructured inpatient groups (e.g., groups in a hospital setting). However, inpatient and outpatient groups are distinct, as are structured versus unstructured groups, and each format offers potential advantages and limitations (Yalom & Leszcz, 2005). For example, an advantage of an unstructured group is that the group leader can reflect the group process and focus on the "here and now," which may improve the efficacy of the relaxation techniques (Yalom & Leszcz, 2005). However, research also has supported the efficacy of structured psychotherapy groups for patients with a variety of medical, psychiatric, and psychological disorders (Hashim & Zainol, 2015; see also Baider et al., 1994; Cohen & Fried, 2007). Empirical research assessing these interventions is limited, and further research is recommended.

"see also" citation, 8.12

Directions for Future Research

Level 2 heading, 2.27, Table 2.3, Figure 2.5

There are additional considerations when interpreting the results of previous studies and planning for future studies of these techniques. For example, a lack of control groups and small sample sizes have contributed to low statistical power and limited the generalizability of findings. Although the current data support the efficacy of psychotherapy groups that integrate guided imagery and progressive muscle relaxation, further research with control groups and larger samples would bolster confidence in the efficac

participants over time, re

attrition. These factors a

rates and changes in me

participation (L. Plum, personal communication, March 17, 2019). Despite these challenges, continued research examining guided imagery and progressive muscle relaxation interventions within group psychotherapy is warranted (Scherwitz et al., 2005). The results thus far are promising, and further investigation has the potential to make relaxation techniques that can improve people's lives more effective and widely available.

personal communication, 8.9

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Sample Student Paper (continued)

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book reference, 10.2

report reference, 10.4

journal article reference, 10.1

YouTube video reference, 10.12

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blog post reference, 10.1

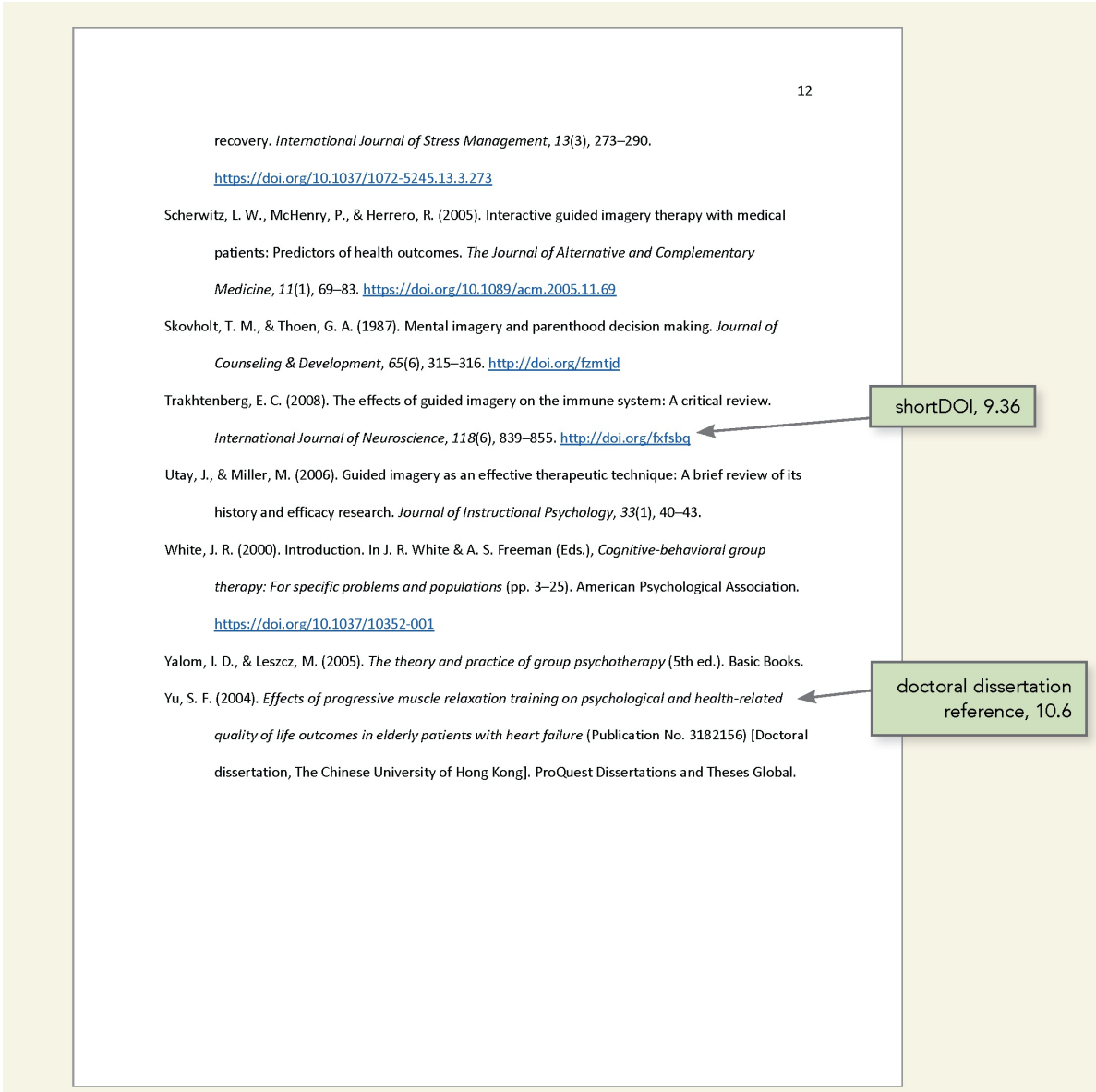
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conference presentation reference, 10.5

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edited book chapter reference, 10.3

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[1]The Web Content Accessibility Guidelines (WCAG) describe how to make online content accessible to people with disabilities (Web Accessibility Initiative, 2018).

[2]The sections and headings in the Publication Manual are numbered to aid indexing and cross-referencing.

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3

JOURNAL ARTICLE REPORTING STANDARDS

This chapter orients readers to a specialized set of guidelines developed by APA referred to as journal article reporting standards, or JARS. These standards provide guidelines for authors on what information should be included, at minimum, in journal articles. By using JARS, authors can make their research clearer, more accurate, and more transparent for readers. Writing clearly and reporting research in a way that is easier to comprehend helps ensure scientific rigor and methodological integrity and improves the quality of published research. Reporting standards are closely related to the way studies are designed and conducted, but they do not prescribe how to design or execute studies, and they are not dependent on the topic of the study or the particular journal in which the study might be published. Comprehensive, uniform reporting standards make it easier to compare research, to understand the implications of individual studies, and to allow techniques of meta-analysis to proceed more efficiently. Decision makers in policy and practice have also emphasized the importance of understanding how research was conducted and what was found.

This chapter contains practical guidance for authors who will use JARS when reporting their research—primarily, authors seeking professional

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publication as well as undergraduate or graduate students conducting advanced research projects. Undergraduate students who are writing less complicated research papers may also find the standards on the abstract and introduction helpful (see Sections 3.3–3.4). Note that the information available regarding JARS is substantial and detailed; this chapter is only an introduction. The APA Style JARS website (https://apastyle.apa.org/jars) contains a wealth of resources (links to many appear throughout this chapter). JARS may also be revised and expanded in the future as new standards are developed; any such changes will be reflected on the website. The sections that follow discuss the application of the principles of JARS, including why the standards exist and how they have evolved; terminology used to discuss JARS, with a link to a glossary on the JARS website; reporting standards for abstracts and introductions that pertain to all types of research articles; and specific standards for quantitative, qualitative, and mixed methods research.

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Overview of Reporting Standards

3.1 Application of the Principles of JARS

By adopting and following JARS in their articles, researchers

- help readers fully understand the research being reported and draw valid conclusions from the work,
- allow reviewers and editors to properly evaluate manuscripts submitted for publication for their scientific value,
- enable future researchers to replicate the research reported,
- foster transparency (for more on the ethic of transparency in JARS, see the JARS website at https://apastyle.apa.org/jars/transparency), and
- improve the quality of published research.

Within these guidelines for reporting standards, however, is flexibility in how the standards are applied across different types of research studies. Guidelines on where to include information recommended in JARS within an article are flexible in most cases (exceptions are information that must appear in the title page, abstract, or author note; see Tables 3.1–3.3 later in this chapter). In general, any information that is necessary to comprehend and interpret the study should be in the text of the journal article, and information that might be needed for replication can be included in supplemental materials available online with few barriers to readers. Authors should consult with journal editors to resolve questions regarding what information to include and where, keeping readability of the article as a prime consideration. Reviewers and editors are encouraged to learn to recognize whether reporting standards have been met regardless of the rhetorical style of the research presentation.

Reporting standards are evolving to reflect the needs of the research community. The original JARS, published in American Psychologist (APA Publications and Communications Board Working Group on Journal Article Reporting Standards, 2008) as well as in the sixth edition of the Publication Manual (APA, 2010), addressed only quantitative research. The updated

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JARS, published in 2018 (see Appelbaum et al., 2018; Levitt et al., 2018), expands on the types of quantitative research (JARS–Quant) addressed and now includes standards for reporting qualitative (JARS–Qual) and mixed methods (JARS–Mixed) research. As research approaches continue to evolve, authors should use these standards to support the publication of research; they should not allow these standards to restrict the development of new methods.

3.2 Terminology Used in JARS

Researchers use many methods and strategies to meet their research goals, and the guidelines in JARS were developed to facilitate the reporting of research across a range of research traditions (Appelbaum et al., 2018; Levitt et al., 2018). These methods fall into either quantitative (Sections 1.1 and 3.5–3.8), qualitative (Sections 1.2 and 3.13–3.16), or mixed methods (Sections 1.3 and 3.18) traditions; separate reporting standards exist for each tradition. There are also specialized standards for particular quantitative (see Sections 3.9–3.12) and qualitative methodologies (see Section 3.17), such as meta-analysis.

Given this diversity, the terms used in this chapter may be unfamiliar to some readers. See the JARS website (https://apastyle.apa.org/jars/glossary) for a glossary of related terms, including "approaches to inquiry," "data-analytic strategies," "data-collection strategies," "methodological integrity," "research design," and "trustworthiness." Because researchers do not always agree on terminology, we encourage authors to translate these terms to reflect their own preferred approaches, taking care to define terms for readers. We recognize that our language inevitably carries philosophical implications (e.g., do researchers "discover," "understand," or "co-construct" findings?). We also encourage reviewers and editors to view our terms as placeholders that may be usefully varied by authors to reflect the values of their research traditions.

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Common Reporting Standards Across Research Designs

Many aspects of the scientific process are common across quantitative, qualitative, and mixed methods approaches. This section reviews reporting standards that have considerable overlap for the two initial elements of journal articles—the abstract and the introduction. We present the common reporting standards for the abstract and introduction as well as some distinctive features for each approach. For descriptions of and formatting guidelines for the title, byline and institutional affiliation, author note, running head, abstract, keywords, text (the body of a paper), reference list, footnotes, appendices, and supplemental materials, see Chapter 2 (Sections 2.4–2.15).

3.3 Abstract Standards

An abstract is a brief, comprehensive summary of the contents of the paper. A well-prepared abstract can be the most important paragraph in an article. Many people have their first contact with an article by reading the title and abstract, usually in comparison with several others, as they conduct a literature search. Readers frequently decide on the basis of the abstract whether to read the entire article. The abstract needs to be dense with information. By embedding essential terms in your abstract, you enhance readers' ability to find the article. This section addresses the qualities of a good abstract and standards for what to include in abstracts for different paper types (see Sections 1.1–1.10). Requirements for abstract length and instructions on formatting the abstract are presented in Section 2.9.

Qualities of a Good Abstract. A good abstract is

- **accurate:** Ensure that the abstract correctly reflects the purpose and content of the paper. Do not include information that does not appear in the paper body. If the study extends or replicates previous research, cite the relevant work with an author–date citation.

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- **nonevaluative:** Report rather than evaluate; do not add to or comment on what is in the body of the paper.
- **coherent and readable:** Write in clear and deliberate language. Use verbs rather than their noun equivalents and the active rather than the passive voice (e.g., "investigated" instead of "an investigation of"; "we present results" instead of "results are presented"; see Section 4.13). Use the present tense to describe conclusions drawn or results with continuing applicability; use the past tense to describe specific variables manipulated or outcomes measured. If presenting statistical or mathematical information, see Sections 6.40 to 6.48 for the appropriate formats.
- **concise:** Be brief, and make each sentence maximally informative, especially the lead sentence. Begin the abstract with the most important points. Do not waste space by repeating the title. Include only the four or five most important concepts, findings, or implications. Use the specific words in your abstract that you think your audience will use in their searches.

Empirical Articles. The abstract for an empirical article (quantitative, qualitative, or mixed methods; see Sections 1.1–1.3) should describe the following:

- the problem under investigation, in one sentence, if possible; when presenting quantitative analyses, include the main hypotheses, questions, or theories under investigation
- participants or data sources, specifying pertinent characteristics (e.g., for nonhuman animal research, include the genus and species); participants will be described in greater detail in the body of the paper
- essential features of the study method, including
  - research design (e.g., experimental, observational, qualitative, mixed methods)
  - analytic strategy (e.g., ethnography, factor analysis)
  - data-gathering procedures
  - sample size (typically for quantitative analyses) or description of the volume of observations or number of participants (typically for qualitative analyses)

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    - materials or central measures used
    - a statement about whether the study is a secondary data analysis
- basic findings, including
    - for quantitative analyses, effect sizes and confidence intervals in addition to statistical significance levels when possible
    - for qualitative methods, main findings in relation to central contextual features
- conclusions and implications or applications of the research findings

Replication Articles. The abstract for a replication article (see Section 1.4) should describe the following:

- type of replication being reported (e.g., direct [exact, literal], approximate, conceptual [construct])
- scope of the replication in detail
- original study or studies that are being replicated
- general conclusions reached in the replication

Quantitative or Qualitative Meta-Analyses. The abstract for a quantitative or qualitative meta-analysis (see Section 1.5) should describe the following:

- research problems, questions, or hypotheses under investigation
- characteristics for the inclusion of studies, including
    - for quantitative meta-analyses, independent variables, dependent variables, and eligible study designs
    - for qualitative meta-analyses, criteria for eligibility in terms of study topic and research design
- methods of synthesis, including statistical or qualitative metamethods used to summarize or compare studies and specific methods used to integrate studies
- main results, including
    - for all studies, the number of studies; the number of participants, observations, or data sources; and their important characteristics
    - for quantitative analyses, the most important effect sizes and any

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important moderators of these effect sizes
    - for qualitative analyses, the most important findings in their context
- conclusions (including limitations)
- implications for theory, policy, and/or practice

Literature Review Articles. The abstract for a literature review article (also called a narrative literature review article; see Section 1.6) should describe the substantive content being reviewed, including the following:

- scope of the literature examined in the review (e.g., journals, books, unpublished abstracts) and the number of items included in the review
- period of time covered in the review (e.g., range of years)
- general conclusions reached in the review

Theoretical Articles. The abstract for a theoretical article (see Section 1.7) should describe the following:

- how the theory or model works and/or the principles on which it is based
- what phenomena the theory or model accounts for and linkages to empirical results

Methodological Articles. The abstract for a methodological article (see Section 1.8) should describe the following:

- general class, essential features, and range of applications of the methods, methodologies, or epistemological beliefs being discussed
- essential features of the approaches being reported, such as robustness or power efficiency in the case of statistical procedures or methodological integrity and trustworthiness in the case of qualitative methods

3.4 Introduction Standards

The body of a paper always opens with an introduction. The introduction contains a succinct description of the issues being reported, their historical antecedents, and the study objectives.

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Frame the Importance of the Problem. The introduction of an article frames the issues being studied. Consider the various concerns on which your issue touches and its effects on other outcomes (e.g., the effects of shared storybook reading on word learning in children). This framing may be in terms of fundamental psychological theory, potential application including therapeutic uses, input for public policy, and so forth. Proper framing helps set readers' expectations for what the report will and will not include.

Historical Antecedents. Review the literature succinctly to convey to readers the scope of the problem, its context, and its theoretical or practical implications. Clarify which elements of your paper have been subject to prior investigation and how your work differs from earlier reports. In this process, describe any key issues, debates, and theoretical frameworks and clarify barriers, knowledge gaps, or practical needs. Including these descriptions will show how your work builds usefully on what has already been accomplished in the field.

Articulate Study Goals. Clearly state and delimit the aims, objectives, and/or goals of your study. Make explicit the rationale for the fit of your design in relation to your aims and goals. Describe the goals in a way that clarifies the appropriateness of the methods you used.

Quantitative Goals. In a quantitative article, the introduction should identify the primary and secondary hypotheses as well as any exploratory hypotheses, specifying how the hypotheses derive from ideas discussed in previous research and whether exploratory hypotheses were derived as a result of planned or unplanned analyses.

Qualitative Goals. In a qualitative article, the introduction may contain case examples, personal narratives, vignettes, or other illustrative materials. It should describe your research goal(s) and approach to inquiry. Examples of qualitative research goals include developing theory, hypotheses, and deep understandings (e.g., Hill, 2012; Stiles, 1993); examining the development of a social construct (e.g., Neimeyer et al., 2008); addressing societal injustices (e.g., Fine, 2013); and illuminating social discursive practices—that is, the way interpersonal and public communications are enacted (e.g., Parker, 2015). The term approaches to inquiry refers to the philosophical

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assumptions that underlie research traditions or strategies—for example, the researchers' epistemological beliefs, worldview, paradigm, strategies, or research traditions (Creswell & Poth, 2018; Morrow, 2005; Ponterotto, 2005). For instance, you might indicate that your approach or approaches to inquiry are constructivist, critical, descriptive, feminist, interpretive, postmodern, postpositivist, pragmatic, or psychoanalytic. Note that researchers may define these philosophies differently, and some qualitative research is more question driven and pragmatic than theoretical. You might also address your approach to inquiry in the Method section (see Section 3.14).

Mixed Methods Goals. In a mixed methods or multimethod article, the introduction should describe the objectives for all study components presented, the rationale for their being presented in one study, and the rationale for the order in which they are presented within the paper (see Section 3.18). In all cases, clarify how the questions or hypotheses under examination led to the research design to meet the study aims.

Goals for Other Types of Papers. Introductions for other types of papers follow similar principles and articulate the specific motivation for the study. For instance, a replication study conducted as a quantitative study would have an introduction that follows the principles for the introduction of a quantitative study but that emphasizes the need to replicate a certain study or set of studies as well as the methods used to accomplish the desired replication.

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Reporting Standards for Quantitative Research

3.5 Basic Expectations for Quantitative Research Reporting

Whereas standards for reporting information in the abstract and introduction of a paper are common to all kinds of research (see Sections 3.3–3.4), there are specific reporting standards for quantitative research articles, including the Method, Results, and Discussion sections (see Sections 3.6–3.8). Note that this is a conceptual separation, but in practice, the information specified in these three sets of reporting standards may be intermixed in several sections of the paper to optimize readability. Standards specific to qualitative and mixed methods research are presented in Sections 3.13 to 3.17 and 3.18, respectively.

The basic expectations for reporting quantitative research are presented in Table 3.1.[1] This table describes minimal reporting standards that apply to all quantitative-based inquires. Additional tables describe other reporting features that are added because of particular design features or empirical claims. Consult Figure 3.1 to determine which tables to use for your quantitative research and for links to all tables on the JARS website (because this chapter is an orientation to JARS, only the main quantitative table is presented here). Every empirical study must include features from Table 3.1 plus features from at least one additional table. The content of Table 3.1 by itself is not sufficient as a description of reporting standards for quantitative studies. See Sections 3.9 to 3.12 for descriptions of each additional table.

Table 3.1 Quantitative Design Reporting Standards (JARS–Quant)

Title and Title Page
Title
• Identify main variables and theoretical issues under investigation and the relationships between them. • Identify the populations studied.
Author Note
• Provide acknowledgment and explanation of any special circumstances, including   ◦ registration information if the study has been registered   ◦ use of data also appearing in previous publications   ◦ prior reporting of the fundamental data in dissertations or conference papers

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- sources of funding or other support
- relationships or affiliations that may be perceived as conflicts of interest
- previous (or current) affiliation of authors if different from the location where the study was conducted
- contact information for the corresponding author
- additional information of importance to the reader that may not be appropriately included in other sections of the paper

Abstract

Objectives

- State the problem under investigation, including main hypotheses.

Participants

- Describe subjects (nonhuman animal research) or participants (human research), specifying their pertinent characteristics for the study; in animal research, include genus and species. Participants are described in greater detail in the body of the paper.

Study Method

- Describe the study method, including
  - research design (e.g., experiment, observational study)
  - sample size
  - materials used (e.g., instruments, apparatus)
  - outcome measures
  - data-gathering procedures, including a brief description of the source of any secondary data. If the study is a secondary data analysis, so indicate.

Findings

- Report findings, including effect sizes and confidence intervals or statistical significance levels.

Conclusions

- State conclusions, beyond just results, and report the implications or applications.

Introduction

Problem

- State the importance of the problem, including theoretical or practical implications.

Review of Relevant Scholarship

- Provide a succinct review of relevant scholarship, including
  - relation to previous work
  - differences between the current report and earlier reports if some aspects of this study have been reported on previously

Hypothesis, Aims, and Objectives

- State specific hypotheses, aims, and objectives, including
  - theories or other means used to derive hypotheses
  - primary and secondary hypotheses
  - other planned analyses
- State how hypotheses and research design relate to one another.

Method

Inclusion and Exclusion

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- Report inclusion and exclusion criteria, including any restrictions based on demographic characteristics.

Participant Characteristics

- Report major demographic characteristics (e.g., age, sex, ethnicity, socioeconomic status) and important topic-specific characteristics (e.g., achievement level in studies of educational interventions).
- In the case of animal research, report the genus, species, and strain number or other specific identification, such as the name and location of the supplier and the stock designation. Give the number of animals and the animals' sex, age, weight, physiological condition, genetic modification status, genotype, health–immune status, drug or test naïveté, and previous procedures to which the animal may have been subjected.

Sampling Procedures

- Describe procedures for selecting participants, including
  - sampling method if a systematic sampling plan was implemented
  - percentage of the sample approached that actually participated
  - whether self-selection into the study occurred (either by individuals or by units, such as schools or clinics)
- Describe settings and locations where data were collected as well as dates of data collection.
- Describe agreements and payments made to participants.
- Describe institutional review board agreements, ethical standards met, and safety monitoring.

Sample Size, Power, and Precision

- Describe the sample size, power, and precision, including
  - intended sample size
  - achieved sample size, if different from the intended sample size
  - determination of sample size, including
    - power analysis, or methods used to determine precision of parameter estimates
    - explanation of any interim analyses and stopping rules employed

Measures and Covariates

- Define all primary and secondary measures and covariates, including measures collected but not included in the report.

Data Collection

- Describe methods used to collect data.

Quality of Measurements

- Describe methods used to enhance the quality of measurements, including
  - training and reliability of data collectors
  - use of multiple observations

Instrumentation

- Provide information on validated or ad hoc instruments created for individual studies (e.g., psychometric and biometric properties).

Masking

- Report whether participants, those administering the experimental manipulations, and those assessing the outcomes were aware of condition assignments.
- If masking took place, provide a statement regarding how it was accomplished and whether and how the success of masking was evaluated.

Psychometrics

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- Estimate and report reliability coefficients for the scores analyzed (i.e., the researcher's sample), if possible. Provide estimates of convergent and discriminant validity where relevant.
- Report estimates related to the reliability of measures, including
  - interrater reliability for subjectively scored measures and ratings
  - test–retest coefficients in longitudinal studies in which the retest interval corresponds to the measurement schedule used in the study
  - internal consistency coefficients for composite scales in which these indices are appropriate for understanding the nature of the instruments being used in the study
- Report the basic demographic characteristics of other samples if reporting reliability or validity coefficients from those samples, such as those described in test manuals or in norming information for the instrument.

Conditions and Design

- State whether conditions were manipulated or naturally observed. Report the type of design as per the JARS–Quant tables:
  - experimental manipulation with participants randomized
    - Table 2 and Module A
  - experimental manipulation without randomization
    - Table 2 and Module B
  - clinical trial with randomization
    - Table 2 and Modules A and C
  - clinical trial without randomization
    - Table 2 and Modules B and C
  - nonexperimental design (i.e., no experimental manipulation): observational design, epidemiological design, natural history, and so forth (single-group designs or multiple-group comparisons)
    - Table 3
  - longitudinal design
    - Table 4
  - N-of-1 studies
    - Table 5
  - replications
    - Table 6
- Report the common name given to designs not currently covered in JARS–Quant.

Data Diagnostics

- Describe planned data diagnostics, including
  - criteria for post-data-collection exclusion of participants, if any
  - criteria for deciding when to infer missing data and methods used for imputation of missing data
  - definition and processing of statistical outliers
  - analyses of data distributions
  - data transformations to be used, if any

Analytic Strategy

- Describe the analytic strategy for inferential statistics and protection against experiment-wise error for
  - primary hypotheses
  - secondary hypotheses
  - exploratory hypotheses

Results

Participant Flow

- Report the flow of participants, including
  - total number of participants in each group at each stage of the study
  - flow of participants through each stage of the study (include figure depicting flow, when possible; see Figure 7.5)

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Recruitment

- Provide dates defining the periods of recruitment and repeated measures or follow-up.

Statistics and Data Analysis

- Provide information detailing the statistical and data-analytic methods used, including
  - missing data
    - frequency or percentages of missing data
    - empirical evidence and/or theoretical arguments for the causes of data that are missing—for example, missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR)
    - methods actually used for addressing missing data, if any
  - descriptions of each primary and secondary outcome, including the total sample and each subgroup, that includes the number of cases, cell means, standard deviations, and other measures that characterize the data used
  - inferential statistics, including
    - results of all inferential tests conducted, including exact p values if null hypothesis significance testing (NHST) methods were used, and reporting the minimally sufficient set of statistics (e.g., dfs, mean square [MS] effect, MS error) needed to construct the tests
    - effect-size estimates and confidence intervals on estimates that correspond to each inferential test conducted, when possible
    - clear differentiation between primary hypotheses and their tests–estimates, secondary hypotheses and their tests–estimates, and exploratory hypotheses and their test–estimates
  - complex data analyses—for example, structural equation modeling analyses (see Table 7 on the JARS website), hierarchical linear models, factor analysis, multivariate analyses, and so forth, including
    - details of the models estimated
    - associated variance–covariance (or correlation) matrix or matrices
    - identification of the statistical software used to run the analyses (e.g., SAS PROC GLM or the particular R package)
  - estimation problems (e.g., failure to converge, bad solution spaces), regression diagnostics, or analytic anomalies that were detected and solutions to those problems
  - other data analyses performed, including adjusted analyses, if performed, indicating those that were planned and those that were not planned (though not necessarily in the level of detail of primary analyses)
- Report any problems with statistical assumptions and/or data distributions that could affect the validity of findings.

Discussion

Support of Original Hypotheses

- Provide a statement of support or nonsupport for all hypotheses, whether primary or secondary, including
  - distinction by primary and secondary hypotheses
  - discussion of the implications of exploratory analyses in terms of both substantive findings and error rates that may be uncontrolled

Similarity of Results

- Discuss similarities and differences between reported results and work of others.

Interpretation

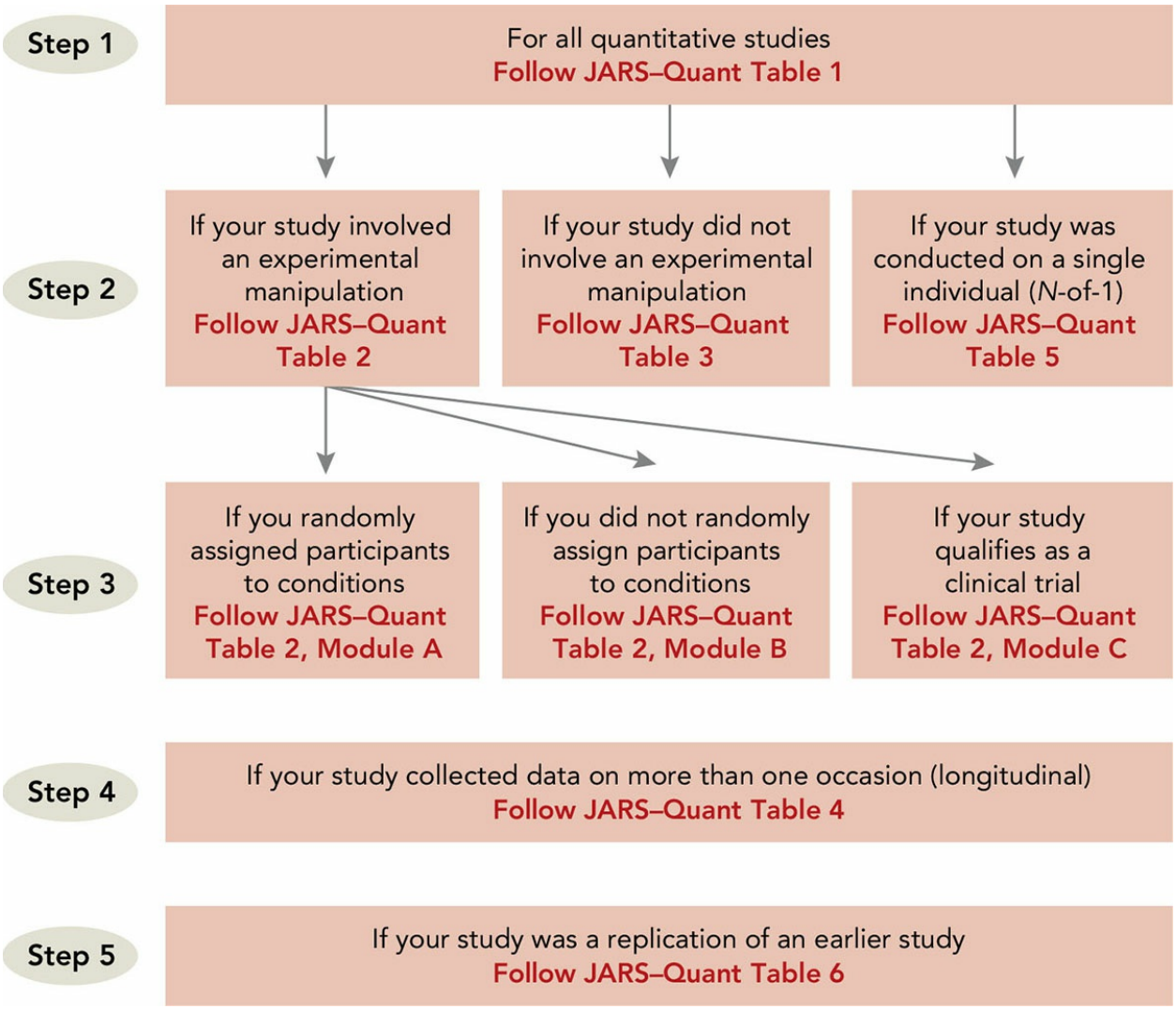
- Provide an interpretation of the results, taking into account
  - sources of potential bias and threats to internal and statistical validity
  - imprecision of measurement protocols
  - overall number of tests or overlap among tests

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- adequacy of sample sizes and sampling validity

Generalizability
• Discuss generalizability (external validity) of the findings, taking into account   ◦ target population (sampling validity)   ◦ other contextual issues (setting, measurement, time; ecological validity)
Implications
• Discuss implications for future research, programs, or policy.

Figure 3.1 Flowchart of Quantitative Reporting Standards to Follow Depending on Research Design



Note. JARS–Quant = quantitative journal article reporting standards. For more information, see the APA Style JARS website (https://apastyle.apa.org/jars).

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3.6 Quantitative Method Standards

The Method section of a paper provides most of the information that readers need to fully comprehend what was done in the execution of an empirical study. This section provides information that allows readers to understand the research being reported and that is essential for replication of the study, although the concept of replication may depend on the nature of the study. The basic information needed to understand the results should (as a rule) appear in the main article, whereas other methodological information (e.g., detailed descriptions of procedures) may appear in supplemental materials. Readability of the resulting paper must be part of the decision about where material is ultimately located. Details of what content needs to be presented in the Method section of a quantitative article are presented in Table 3.1 and must be used in conjunction with JARS–Quant Tables 2 to 9 on the JARS website (https://apastyle.apa.org/jars/quantitative).

Participant (Subject) Characteristics. Appropriate identification of research participants is critical to the science and practice of psychology, particularly for generalizing the findings, making comparisons across replications, and using the evidence in research syntheses and secondary data analyses.

Detail the major demographic characteristics of the sample, such as age; sex; ethnic and/or racial group; level of education; socioeconomic, generational, or immigrant status; disability status; sexual orientation; gender identity; and language preference, as well as important topic-specific characteristics (e.g., achievement level in studies of educational interventions). As a rule, describe the groups as specifically as possible, emphasizing characteristics that may have bearing on the interpretation of results. Participant characteristics can be important for understanding the nature of the sample and the degree to which results can be generalized. For example, the following is a useful characterization of a sample:

> The second group included 40 cisgender women between the ages of 20 and 30 years (M = 24.2, SD = 2.1, Mdn = 25.1), all of whom had emigrated from El Salvador; had at least 12 years of education; had been permanent residents of the United States for at least 10 years; and lived in Washington, DC.

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To help readers determine how far the data can be generalized, you may find it useful to identify subgroups.

> The Asian participants included 30 Chinese and 45 Vietnamese persons.
>
> Among the Latino and Hispanic American men, 20 were Mexican American and 20 were Puerto Rican.

Even when a characteristic is not used in analysis of the data, reporting it may give readers a more complete understanding of the sample and the generalizability of results and may prove useful in meta-analytic studies that incorporate the article's results. The descriptions of participant characteristics should be sensitive to the ways the participants understand and express their identities, statuses, histories, and so forth. Chapter 5 contains further guidance on writing without bias.

When nonhuman animal subjects are used, report the genus, species, and strain number or other specific identifier, such as the name and location of the supplier and the stock designation. Give the number of nonhuman animal subjects and their sex, age, weight, and physiological condition.

Sampling Procedures. Describe the procedures for selecting participants, including (a) the sampling method, if a systematic plan was implemented; (b) the percentage of the sample approached that participated; and (c) whether self-selection into the study occurred (either by individuals or by units such as schools or clinics) and the number of participants who selected themselves into the sample. Report inclusion and exclusion criteria, including any restriction based on demographic characteristics.

Describe the settings and locations in which the data were collected and provide the dates of data collection as a general range of dates, including dates for repeated measurements and follow-ups. Describe any agreements with and payments made to participants. Note institutional review board approvals, data safety board arrangements, and other indications of compliance with ethical standards.

Sample Size, Power, and Precision. Provide the intended size of the sample and number of individuals meant to be in each condition if separate conditions were used. State whether the achieved sample differed in known ways from the intended sample. Conclusions and interpretations should not

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go beyond what the achieved sample warrants. State how the intended sample size was determined (e.g., analysis of power or precision). If interim analysis and stopping rules were used to modify the desired sample size, describe the methodology and results of applying that methodology.

Measures and Covariates. Include in the Method section definitions of all primary and secondary outcome measures and covariates, including measures collected but not included in the current report. Provide information on instruments used, including their psychometric and biometric properties and evidence of cultural validity (Section 3.10 for how to cite hardware and apparatuses; see Section 10.11 for how to cite tests, scales, and inventories).

Data Collection. Describe the methods used to collect data (e.g., written questionnaires, interviews, observations). Provide information on any masking of participants in the research (i.e., whether participants, those administering the manipulations, and/or those assessing the outcomes were unaware of participants' assignment to conditions), how masking was accomplished, and how the masking was assessed. Describe the instrumentation used in the study, including standardized assessments, physical equipment, and imaging protocols, in sufficient detail to allow exact replication of the study.

Quality of Measurements. Describe methods used to enhance the quality of measurements, including training and reliability of data collectors, use of multiple observers, translation of research materials, and pretesting of materials on populations who were not included in the initial development of the instrumentation. Pay attention to the psychometric properties of the measurement in the context of contemporary testing standards and the sample being investigated; report the psychometric characteristics of the instruments used following the principles articulated in the Standards for Educational and Psychological Testing (American Educational Research Association et al., 2014). In addition to psychometric characteristics for paper-and-pencil measures, provide interrater reliabilities for subjectively scored measures and ratings. Internal consistency coefficients can be useful for understanding composite scales.

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Research Design. Specify the research design in the Method section. For example, were participants placed into conditions that were manipulated, or were they observed in their natural setting? If multiple conditions were created, how were participants assigned to conditions—through random assignment or some other selection mechanism? Was the study conducted as a between-subjects or a within-subjects design? Reporting standards vary on the basis of the research design (e.g., experimental manipulation with randomization, clinical trial without randomization, longitudinal design). Consult Figure 3.1 to determine which tables on the JARS website to use for your research design. See Sections 3.9 and 3.10 for a summary of design-specific reporting standards. See Section 3.11 for standards for particular analytic methods and Section 3.12 for quantitative meta-analysis standards.

Studies can be mixtures of various types; for instance, a study may involve an experimental manipulation with randomization with some factors repeated in a longitudinal fashion. For studies not currently covered by JARS, provide the commonly used name for that design. For more on mixed methods designs, see Section 3.18.

Experimental Manipulations or Interventions. If experimental manipulations or interventions were used in the study, describe their specific content. Include details of the interventions or manipulations intended for each study condition, including control groups (if any), and describe how and when interventions or experimental manipulations were administered. Describe the essential features of "treatment as usual" if that is included as a study or control condition.

Carefully describe the content of the specific interventions or experimental manipulations used. Often, this involves presenting a brief summary of instructions given to participants. If the instructions are unusual, or if the instructions themselves constitute the experimental manipulation, present them verbatim in an appendix or supplemental materials. If the text is brief, present it in the body of the paper if it does not interfere with the readability of the report.

Describe the methods of manipulation and data acquisition. If a mechanical apparatus was used to present stimulus materials or to collect data, include in the description of procedures the apparatus model number and manufacturer (when important, as in neuroimaging studies), its key settings or parameters

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