

Developing A Research Report

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Learning Objectives

1. Describe the purpose of the research report;
2. Describe the types of research reports and distinguish nuances within each type of report;
3. Discuss the discrete sections of the research report;
4. Identify the relevant content that fits within each section of the research report;
5. Identify common mistakes made in research report development; and
6. Describe the journal review process.

DEVELOPING A RESEARCH REPORT

- The research report is the permanent record of counseling research.
- If a research project is poorly designed and has serious methodological flaws, the quality of the write-up is irrelevant.
- A well-designed and implemented study that is reported ineffectually loses credibility.

Types of Research Reports

- Research reports can take different forms, depending on what point a counseling researcher is at in her or his career, and the audience for which the topic is best suited.
- Three common types are *journal articles*, *dissertations or theses*, and *dissertation or thesis proposals*.

Journal Article

- The most common and widely-accessed avenue for publishing research reports is through refereed journals.
- Each journal has an editorial staff and a large number of professionals in the field who serve as peer reviewers of submitted manuscripts.

Dissertation/Thesis

- Some master's students and all doctoral students are required to complete a research project culminating in a thesis or dissertation as a final requirement before graduating.
- Most theses and dissertations consist of four or five chapters, depending on whether the introduction and review of literature are included in different chapters.

Dissertation/Thesis Proposal

- Before proceeding with the study, graduate students typically write a research proposal that includes the first three chapters of the dissertation or thesis (introduction, literature review, and methodology).

Format of the Research Report

The format and organization of a research report can vary, however, you should expect to find the following basic components in a research report: *title page, abstract, introduction, review of literature, methods, results, discussion or conclusions, and references.*

Title Page

- Research is only useful to future researchers and practitioners if it can be accessed.
- The best titles are informative, catchy, and should provide details such as the independent and dependent variables, the population of the study, the design, and clues to the outcome of the study.

Abstract

- The abstract is intended to give readers a brief, but thorough, summary of the article.
- Readers often use the abstract to determine if they will read the rest of the article.
- The abstract should be succinct, well-organized, and should accurately represent the content of the article.

Abstract

- Most sections of the research report should be represented in the abstract: the introduction (purpose of the study, research questions or hypotheses), methods (participants, type of study, research design), results (what is the outcome?), and conclusion (what is the impact of the study?).

Introduction

- A clear and well-organized introduction provides the framework for the rest of a report.
- The introduction usually consists of a *statement of the problem, a brief overview of related research and theoretical underpinnings, and a list of the research questions and hypotheses.*

Statement of the Problem

- The statement of the problem is a description of the current state of knowledge related to the research topic.
- The problem statement should provide answers to the following questions: Why is this issue important? Who does this issue impact? What is the purpose of this study? What practical outcomes does the researcher hope will emerge from the study?

Overview of Relevant Research

- Provides a framework for how this particular study will address the problem.
- The overview of the literature is a brief, but thorough description of previous research findings, relevant methodological issues in previous research and important conclusions that inform the researcher's decisions about how to study the issues at hand.

Research Questions & Hypotheses

- After developing a rationale for the study, the next step is to state the research questions and/or hypotheses.
- The research questions focus the report, by centering on the purpose of the study.
- The questions should be specific, clearly worded, and an extension of the introduction and rationale.
- Clear, operationalized definitions for each variable should be provided.

Methods

- The methods section should be clear and detailed enough to provide information to critique the validity of the study and to replicate it.
- The methods section walks through each step of the research study.
- The four main areas in the methods section are *participants, instruments, research design, and procedures*.

Participants

- This section should answer the following questions:
 - Who are the participants of this study?
 - How were they selected?
 - How many participants make up the sample?
 - Are there different groups of participants (an experimental and control group, or other types of groups being compared)
 - How many participants are in each group?
 - What are the demographics of the sample, such as age, gender, ethnicity, region of residence, or other relevant characteristics?

Instruments or Measures

- Address each construct or variable and describe the instrument used to measure it.
- The instrument description should include, the full name of the instrument, authors, appropriate citations, previous evidence of reliability and validity, information about the sample on which it was normed, number and type of items (e.g., Likert scale).

Research Design

- Identify the research design that is being used.
- Indicate how the variables are organized in the study in order to answer the research questions? Is the design correlational, ex-post facto, causal-comparative, experimental, or quasi-experimental in nature?

Procedures

- Provides the reader with a detailed, step-by-step guide to how the study was conducted.
- Describes precisely what was done, and when, where, and how each step was completed.
- Includes how the participants were contacted, how informed consent and parental permission was addressed, how the instruments were administered and in what order, instructions that were given to the participants, how experimental conditions were manipulated.

Procedures

- Information that might impact the participant responses or investment in the study (e.g., what incentives, if any, were offered) should be disclosed.
- When possible, copies of the informed consent, instructions given to participants, and the actual instrumentation should be included in the appendixes of the document.

Results

- This is the section in which the actual findings of the study are presented.
- What statistical tests were run and the results of these analyses are presented.
- A summary of the statistical results, along with the statistical significance, effect size, and power should be provided.
- Connect the findings with the stated research questions and illuminate if findings support or refute your hypotheses.

Discussion

- Provides an opportunity to draw conclusions about the results of the study and connect the findings to the body of existing research described in the introduction.
- Address the following questions:
 - What limitations of the study impact the conclusions that can be drawn.
 - What ethical concerns impact the interpretation of results?
 - What are some implications of these results for practitioners?
 - What now, that is, what are some directions for future research?

Qualitative Research Reports

- The purpose of qualitative research is to understand personal experiences.
- Although an attempt to discover patterns and themes exists, excerpts of participant statements are often reported verbatim.
- If you conduct a qualitative research project, you will not attempt to condense your data into numbers or statistics, but allow access to the emotion and personal quality of the participants' voices.

Qualitative Research

- Qualitative research is interactive, subjective, and participatory and this is evident in the tone and style of writing in the report.
- Often reports are in first person and disclose personal investments in the research topic.
- The report addresses philosophy, purpose, methods, and presentation and reflects the values of constructivism and critical theory.

Building Skills for Effective Research Report Writing

- In addition the typical sections of the research report, there are a number of general guidelines to support research report development.
- These include three major sections entitled *Developing as a Writer, Preparing in Advance, and Writing Guidelines*.

Developing as a Writer

The skill of developing research reports is, like any other skill, one that is developed over time and through predictable processes. To hone your report writing skills over time, it is important to *practice with opportunities for feedback, anticipate opportunities to re-write, and avoid writer's block.*

Practice with Feedback

- Develop collaborative relationships that will provide candid report feedback.
- Reviewers without content expertise can be useful.
- Reviewers with expertise in research report writing may be particularly helpful.
- Reviewers with content expertise may add useful insights about targeting the report to a particular audience, and whether a report might be appropriate for the selected outlet.

Anticipate Opportunities to Rewrite

- Journals rarely accept research reports without requiring revisions.
- Even if a manuscript receives a favorable review, opportunities for revision and improvement often are available.
- Most editors do not assume that all suggested revisions will necessarily be implemented.
- It is useful to go through the reviews and carefully consider which suggestions will be implemented and which will not.

Avoiding Writers Block

- The process of developing a research report can be difficult to start and the ubiquitous *writer's block* may occur.
- A general guideline is, just write.
- It is much easier to edit and revise a first draft than it is to develop the first draft.
- By getting the ideas onto paper, you can begin to solicit the support of others who can provide an informal review to help refine your work.

Prepare in Advance

Specifically, it is important to *know your audience in advance, understand the guidelines for authors for your chosen outlet, and be familiar with publication guidelines for your profession*

Know Your Audience in Advance

- Starting well before the research report is begun, it is important to consider a target audience and a potential outlet for the research report.
- In this manner, it is possible to tailor language specifically to the audience of interest.

Publication Guidelines

- Most journals adhere to specific publication styles.
- In the counseling profession, this is most often based on the *Publication manual of the American Psychological Association* (APA, 2001).
- Prior to developing a research report, it is important to be familiar with these publication guidelines.

Guidelines for Authors

- In addition to the publication style used, there are often specific journal *Guidelines for Authors* for particular publications.
- Failure to follow these guidelines could preclude publication or make for extensive revisions.
- Particular guidelines, such as maximum page length and other formatting requirements should be closely adhered to in report preparation.

Writing Guidelines

- After developing the mindset that report writing is a skill developed over time with practice and feedback, and done the preparatory work necessary to know your targeted outlet and the guidelines for publication, three general guidelines that can strengthen the actual writing of the report:
 1. *Build a bridge to your study,*
 2. *Interpret and recommend within existing data,*
 3. *Be transparent in your writing.*

Build a Bridge

- The methodology of your study should leave no questions as to why this study was conducted and why it is important.
- This *bridge* occurs through an overview of the literature in which you build a clear argument for the study.
- The key question that has to be answered is, Why *this* study *now*? How does this study provide a logical extension of the current knowledge base?

Interpret and Recommend within the Current Data

- In the discussion section, the author(s) commonly interpret the results to make meaning of the results and provide recommendations for counseling practice and future research.
- These interpretations and recommendations are important aspects of the research report and should be consistent with the findings of this study and previous research on the topic.
- Making interpretations and recommendations that extend beyond the available data is a common problem in report writing.

Be Transparent

- Reports often omit limitations of their study, reframe limitations to suggest they are not *really* limitations, or minimize these limitations.
- All research projects have methodological limitations that exist *a priori* or evolve over the course of the study.
- Limitations should be addressed explicitly, as well as how interpretations of findings might be influenced by these limitations.

Common Mistakes in Research Reports

There are a number of common mistakes that routinely plague research reports. These can be categorized as *general writing problems, problems in the review of existing literature, problems in reporting methodology, and problems in writing discussion sections.*

General Writing Problems

Many common mistakes are made in the overall writing style and tone of the research report including:

- ✓ *failure to follow author guidelines*
- ✓ *failure to follow publication style guidelines*
- ✓ *use of discriminatory language*
- ✓ *transition and heading problems*
- ✓ *a weak abstract*

Failure to Follow Author Guidelines

- Virtually all journals publish author guidelines and are typically available in back issues and via the Internet.
- Common guidelines include maximum page length and restricting the use of Tables and Figures, both related to publication costs.
- Failure to adhere to guidelines may result in failure of acceptance for publication.

Failure to Follow Relevant Publication Manuals

- One detail that typically is chronicled in author guidelines is what publication style should be followed.
- APA style is most common for counselors.
- Minor style problems typically do not substantially hinder the review process but major style problems in the writing may negatively impact the review process (Miller, 2006).

Discriminatory Language

When research report authors include language, often inadvertently, that is discriminatory in nature it may be problematic if a reviewer has a strong reaction that may create a negative bias in the review process.

Transition and Heading Problems

- A common problem in reports is inattention to the overall flow of the report.
- If sections are written without sufficient attention to transitions individual sentences and paragraphs may be well written, but the report as a whole does not flow well.
- This can be corrected by attending to introductory sentences and phrases, and in using closing sentences and phrases in a section to segue into the next section.
- The appropriate application of headings also helps the reader transition to new sections.

Weak Abstract

- The abstract should follow the author guidelines, particularly for length, and briefly describe the study.
- The abstract will often be the only text available to make a decision about whether to download the full text of the article.
- Both hard copy and on-line full text articles, should find that the abstract accurately and fully describes the study.

Common Problems in the Literature Review

Problems also may emerge in the review of the literature.

Common problems in this section of the report include

- *failing to build a logical argument for the study*
- *bias in reviewing existing literature*

Failure to Build a Logical Argument for the Study

- Entering the methodology section of the report, it should be clearly understood “Why *this* study *now*?”
- The argument should be grounded in existing empirical and theoretical literature as to why this study was conducted.
- The argument should be clearly and explicitly delineated and is important as a context for the discussion section of the report, providing a foundation on which to discuss the results of the study and make recommendations for practitioners and future research.

Bias in Reviewing Existing Literature

- In some instances, report writers will only review studies that support the argument that they hope to make.
- Bias may be introduced by exaggerating limitations of studies with findings contradictory to the bias of the author(s), and minimizing or ignoring limitations of studies with findings consistent with this bias.
- It is the responsibility of the report writer to provide a balanced and fair review of existing literature, including an objective account of methodological limitations in previous research.

Common Problems in Methodology Sections

- The methods section of the report provides the blueprint of how the study was carried out.
- Common problems in reporting methodology include:
 - *insufficient detail*
 - *failure to provide evidence of validity and reliability*

Insufficient Detail In Methodology

- The goal of the methods section of the report is to provide sufficient detail to allow replication.
- Sufficient detail should be provided about participants, instrumentation, and procedures to be easily replicated by others.
- If page limitations preclude inclusion of all information necessary to allow replication, this should be noted explicitly in the report, along with contact information that allows a reader to obtain additional information.

Failure to Provide Evidence of Instrumentation Validity & Reliability

- A common mistake made in research reports is to provide inadequate evidence of instrumentation validity and reliability.
- Writers may fail to provide any evidence of validity and reliability.
- Writers may provide evidence of instrument validity and reliability *only* from previous research.
- Research instruments are valid and reliable only for a specific sample thus it is necessary to report psychometric information for the sample of *each* study.

Common Problems in Results Section

Common problems within the Results section include:

- Issues related to *statistical versus clinical significance*
- *Providing discussion within the Results section.*

Statistical Versus Clinical Significance

- Statistical significance is not the same as clinical significance
- Significance tests are influenced by sample size
- Researchers have turned to reporting effect size as an alternative to significance testing

Providing Discussion within the Results Section

- A common problem occurs when the report writer offers discussion content, including interpretations and implications of findings, within the results section.
- Unless guidelines request this, it is necessary to include all interpretations and implications of findings in the discussion section rather than the results section.

Common Problems in Discussion Sections

Problems frequently noted in these sections include:

- *failing to delineate limitations to the study*
- *going beyond the data*
- *failing to note implications for practitioners*
- *recommendations for future research.*

Failure to Delineate Limitations of the Study

- Discussion of the methodological limitations will inform future research and provide a context for the results of the study.
- Failing to discuss limitations of the study leaves the reviewer to determine
 - 1) whether the study is flawless
 - 2) if the writer intentionally chooses not to discuss limitations
 - 3) if the report writer is unsophisticated in the importance of discussing limitations

Going Beyond the Data

- It is important that the findings be consistent with the findings of the current study and previous research findings.
- It is a mistake to make interpretations or recommendations that go beyond the data or are inconsistent with existing data.
- It is indicative of limited rigor in the report and is a common “fatal flaw” in the report that precludes publication.

Failure to Discuss Implications & Recommendations

- The opposite of going beyond the data also may occur when the report writer fails to discuss implications for counseling practitioners and recommendations for future research.
- The implications for practitioners might be considered the “so what” of the study, and recommendations for future research the “now what” of the study.

Manuscript Review Process

- Once the manuscript is complete :
 - It is submitted to a journal editor
 - It is determined whether the manuscript will be distributed for peer review
 - Reviewers read and study the report, and provide a detailed review to the editor, including feedback on the merits of the study and the quality of the written report
 - The editor generates an *action letter*, detailing the adjudication of the manuscript and recommended changes

Manuscript Review Process

- The most common decisions are *Accept As Is*, *Accept Pending Minor Revisions*, *Revise and Resubmit*, and *Reject*.
- If revisions are requested, a time frame in which these should be received is provided.
- If a manuscript is rejected, it may be resubmitted to another journal, although ethically it may be under review by only one journal at a time.