

RESEARCH REPORT AND DISSEMINATION OF RESEARCH FINDINGS

Educational research is shared and communicated to others for dissemination of knowledge. After completion of research activities, the researcher has to report the entire activities that are involved in research process systematically in writing. For clear and easy understanding of readers, writing a good research report requires knowledge of the types of research reporting, rules for writing and typing, format and style of research reporting and the body of the report.

TYPES OF RESEARCH REPORT

Research reports mainly take the form of a thesis, dissertation, journal article and a paper to be prescribed at a professional meeting. Research reports vary in format and style. For example, there are difference found in a research report prepared as a thesis or dissertation and a research report prepared as a manuscript for publication. The dissertation and thesis are more elaborate and comprehensive. While research papers prepared for journal articles and professional meeting are more precise and concise.

Format

Format refers to the general pattern of organization and arrangement of the report. It is an outline that includes sections and subsections or chapters and subchapters or headings and subheadings followed to write research report. All research reports follow a format that is parallel to the steps involved in conducting a study. The format of a research report is generally well spelled out in contents. Different universities, institutions and organizations publishing professional journals follow style manual prepared on their own. Some institutions follow by style manuals prepared by other professional bodies like the American Psychological Associations, the University of Chicago and the Harvard Law Review Association. The Publication Manual of the American Psychological Association (APA), the Chicago Manual of Style, and A Uniform System of Citation (USC) published by Harvard Review Association are some of the worth mentioning style manuals that are followed by researchers to follow format and style while writing research reports.

The APA format is widely followed because it eliminates formal footnotes. It provides detailed information about research format for all types of research reports on various behavioural and social science disciplines. The CMC presents guidelines for use of quotations, abbreviations, names and terms and distinctive treatment of words, numbers, tables, mathematics in type and writing footnotes. Some historians and ethnographers prefer to use the CMC and USC.

The common format used to write research report of quantitative studies for a degree requirement is as follows.

Preliminary pages

1. Title Page
 - a. Title
 - b. Degree requirement
 - c. University or institution's name

- d. Author's name
 - e. Supervisor's name
 - f. University Department
 - g. Year
2. Acknowledgements
 3. Supervisor's Certificate
 4. Table of contents
 5. List of Tables
 6. List of Figures

Main Body the Report

1. Chapter – I : Introduction
 - a. Theoretical Framework
 - b. Rationale of the study
 - c. Statement of the problem
 - d. Operational definitions of the key terms
 - e. Objectives of the study
 - f. Hypothesis of the study
 - g. Scope and Delimitations of the study
 - h. Significance of the study
2. Chapter II : Review of Related Literature
3. Chapter III : Methodology and Procedures
 - a. Design and Research method
 - b. Population and sample
 - c. Tools and techniques of data collection
 - d. Techniques of data analysis
4. Data Analyses and Interpretation
5. Results and Discussions
6. Conclusions and Suggestions
7. Bibliography
8. Appendices

The common format followed for qualitative research including historical and analytical research is different from the format followed in quantitative research. The common format used usually to write research report of qualitative studies for degree requirements is as follows.

1. Preliminary pages (same as in quantitative research)
2. Introduction
 - a. General problem statement
 - b. Preliminary Research Review
 - c. Foreshadowed Problems
 - d. Significance of the study
 - e. Delimitations of the study
3. Design and Methodology
 - a. Site selection

- b. Researcher's Role
 - c. Purposeful / Theoretical Sampling
 - d. Data collection strategies
4. Qualitative Data analysis and Presentation
 5. Presentation of Findings : An Analytical interpretation
 6. Bibliography
 7. Appendices

The common format followed for writing a research report as an article or a paper for a journal and seminar is as follows

1. Title and author's name and address
2. Abstract
3. Introduction
4. Method
 - a. Sample
 - b. Tools
 - c. Procedure
5. Results
6. Discussions
7. References

STYLE

Style refers to the rules of spelling, capitalization, punctuations and typing followed in preparing the report. A researcher has to follow some general rules for writing and typing a research report. The rules that are applicable both for quantitative and qualitative research report are as follows

1. The research report should be presented in a creative, clear, concise and comprehensive style. Literary style of writing is to be replaced by scientific and scholarly style reflecting precise thinking. Descriptions should be free from bias, ambiguity and vagueness. Ideas need to be presented logically and sequentially so that the reader finds no difficulty in reading.
2. The research report should be written in a clear, simple, dignified and straight forward style, sentences should be grammatically correct. Colloquial expressions, such as 'write up' for report and 'put in' for insert should be avoided. Even great ideas are sometimes best explained in simple, short and coherent sentences. Slang, flippant phrases and folksy style should be avoided.
3. Research report is a scientific document but not a novel or treatise. It should not contain any subjective and emotional statements. Instead, it should contain factual and objective statements.
4. Personal pronouns such as I and me, and active voice should be avoided as far as possible. For example, instead of writing I randomly selected 30 subjects; it is advisable to write thirty subjects were selected randomly by the investigator.
5. Sexist language should be replaced by non-sexist language while writing research report. Male or female nouns and pronouns (he and she) should be avoided by using plurals. For

example, write children and their parents have been interviewed rather than child and his parents were interviewed.

6. Instead of using titles and first names of the cited authors, last name is needed. For example, instead of writing Professor John Dewey, write Dewey.
7. Constructed forms of modal auxiliaries and abbreviations should be avoided. For example, shouldn't, can't, couldn't should not be used. However, abbreviations can be used to avoid repetition if the same has been spelled out with the abbreviation in parentheses. For example, researcher can write NCERT if he/she has used NCERT in parenthesis in his/her earlier sentences like National, Council of Educational Research and Training (NCERT). There are few exceptions to this rule for wellknown abbreviations such as IQ.
8. Use of tense plays an important role in writing a research report. Past tense or present perfect tense is used for review of related literature and description of methodology, procedure results and findings the study, Present tense is appropriate for discussing results and presenting research conclusions and interpretations. Future tense, except in research proposals, is rarely used.
9. Economy of expression is important for writing a research report. Long sentences and long paragraphs should be avoided. Short, simple words are better than long words. It is important that thought units and concepts are ordered coherently to provide a reasonable progression from paragraph to paragraph smoothly.
10. Fractions and numbers which are less than ten should be expressed in words For example, six schools were selected or fifty percent of students were selected.
11. Neither standard statistical formula not computations is given in the research report.
12. Research report should not be written hurriedly. It should be revised many times before publication. Even typed manuscripts require to be thoroughly proofread before final typing.
13. Typing is very important while preparing research report. Use of computer and word processing programme has made the work easy. However, following rules of typography require to be followed
 - a. A good quality of hand paper $8\frac{1}{2}$, by 11 in size and 13 to 16 pound in weight should be used.
 - b. Only one side of the sheet is used in typing.
 - c. The left margin should be $1\frac{1}{2}$ inches. All other margins i.e. the top, the bottom and the right should be 1 inch.
 - d. All material should be double spaced.
 - e. Times New Roman or A Oldman Book Style with 12 size front can be used for typing words in English and book titles can be italicized.
 - f. Direct quotations not over three typewritten lines in length are included in the text and enclosed in quotation marks. Quotations of more than three lines are set off from the text in a double – spaced paragraph and indented five spaces from the left margin without quotation marks. However, original paragraph indentations are retained. Page numbers are given in parentheses at the end of a direct quotation.

Mechanisms of Writing Dissertation and Thesis

In reality, the terms dissertation and thesis carry the same meaning. Thesis is an English (UK) term whereas dissertation is an American term. However, in India, the term thesis is used to denote work carried out for Ph.D. degree whereas the term dissertation is used to denote work carried out for M. Ed. and M.Phil degrees especially in the academic discipline of Education. Both format and outlines stated earlier vendor format section. Thesis and dissertation should be complete and comprehensive. The main sections of a dissertation and thesis are-

- a. Preliminary pages,
- b. Main body of the report and
- c. Appendices

- a. Preliminary pages

The Preliminary pages include title page, supervisor's certificate, acknowledgement page, table of contents, list of tables and figures. The title page usually includes the title of the report, the author's name, the degree requirement, the name and location of the college or university according the degree and the date or year of submission of the report. Name, designation and institutional affiliation of the guide are also written. The title of a dissertation and thesis should clearly state the purpose of the study. The title should be typed in capital letters, should be centered, in an inverted pyramid form and when two or more lines are needed, should be double spaced.

The title should describe, as briefly as possible, the specific nature of the study. A rule of thumb states that a title should have no more than 12 to 15 words. For example, consider (1) a study of culturally disadvantaged children that compares the reading readiness of those who have participated in a Project Head Start program with that of a matched group of children with no formal preschool experience, and (2) the title, "A Comparison of Reading Readiness Test Scores of Disadvantaged Children Who Have Attended Head Start Classes for Six Weeks or More with Similar Children with No Preschool Experience." Although this title does convey what the study is about, it is too long. Such phrases as "a comparison of," "a study of," and "an investigation into" are usually superfluous.

With vague or overly brief titles, a prospective reader must search out the article to determine what it is about. Titles such as "Head Start and Readiness" or "Reading among the Disadvantaged" illustrate this shortcoming. The title should identify the major variables and the populations of interest. The operational definitions of the major variables and the description of the samples need not be included in the title. Because correct titling will ensure correct indexing, a useful strategy is for researchers first to decide under what key words they want their studies to be indexed, working from there to a concise title. In addition, the title should, if possible, begin not with an article ("a," "an," or "the") but with a key word. Any fanciful part should be relegated to subtitle because bibliographers often cut off the subtitle or alphabetize under the article ("the" or "a"), ensuring real confusion or loss to searchers.

For example, the important key words for indexing would be reading readiness and Project Head Start. Therefore, an appropriate title might be “Reading Readiness of Project Head Start and Non-Head Start Children.” This title is reasonably brief, yet it gives the prospective reader a fairly precise indication of what the study is about. Avoid at all costs emotion-laden titles, such as “We Must Expand the Head Start Program” or “Don’t Let the Disadvantaged Become Poor Readers.” The prospective reader will not expect research findings under such titles.

Abstract

Most institutions require a separate abstract of the dissertation, which should include a precise statement of the problem and concise descriptions of the research methods, results, and conclusions. The abstract must be limited in length (typically 500 words or less). The abstract follows the title page.

Main body of the report

The main body of the report includes introduction, review of related literature, methodology and procedures, results and discussion, conclusions and recommendations.

Introduction

The introduction is a very important part of the dissertation; it will take up a good portion of the total length of your report. The introduction begins with a statement of the research question (problem). Give the background of the problem and state why you think your study will make a contribution to knowledge in the area. State the hypothesis and the reasoning that led to your expectation about the results of the study. Define any terms that might be unfamiliar to readers. This section includes a theoretical framework that introduce the problem, significance of the study both from theoretical and practice points of view, description of the problem, operational definition of the terms, objectives, statement of hypotheses with rationale upon which each hypothesis is based and sometimes delimitations of the study. The problem requires to be stated in interrogative statement or series of questions which answers are to be sought by the researcher through empirical investigation. Abstract terms and variables used in the problem require to be operationally defined. The problem should be stated that it should aim at finding the relationship between two variables.

The hypotheses related should be supported by the rationale deduced from the previous research studies or experiences with evidences. Hypothesis which is a tentative answer to the research question should be stated concisely and clearly so that it can be tested statistically or logically with evidences. A good hypothesis clearly states the expected relation or difference among the studied variables and defines those variables in operational, measurable terms. All hypotheses logically follow the review of related literature and are based on the implications of previous research. For Example-

Cognitive development possess through form successive stages from Piagian perspective, namely, sensory – motor, pre-operational, concrete operational and formal operational stages. Each stage starts with specific age and is characterized by the development of some specific concepts. Hence,

development of science concepts is related to age. It is assumed that age plays vital role in the development of concepts. The hypothesis derived from this rationale is:

There exists significant difference among hearing impaired children at each successive age levels in the development of concepts in science.

The delimitation of the study should include such aspects as variables, sample, area or site, ratings tools and techniques to which the study has been delimited.

Review of Literature

This chapter contains an extensive review of the literature related to your problem. Do not just list studies one after the other but, rather, synthesize their findings and point out agreements and disagreements among them. Also, show how they are related to your research problem. In this chapter, the past research works relating to the present study under report should be described and analyzed. The description that includes last name of the previous researcher with year of study in parenthesis includes mainly method and findings briefly and precisely. More description of studies and findings has no meaning unless those descriptions and findings are analyzed critically to find out research gaps to be bridged by the present study. Therefore, it is required that after description of the previous research work, the research report should contain a critical appraisal to find out significance the study. The review should flow in such a way that the least related references are discussed first and the most related references are discussed last. The review should conclude with a brief summary of the literature and its implications.

Methods

This chapter presents a detailed description of the methodology. It should be clearly written and should provide enough information that another researcher could read this section and replicate your study. In a quantitative study, this chapter typically has subsections with information on the participants, the research design, the variables and treatments, materials used to collect data, procedures, and the location of the study. In the section on participants, for example, tell the number of participants, how they were selected, and their major characteristics such as age, gender, and race/ethnicity. For a qualitative study, this section may also include a detailed description of the site and the nature and length of interactions with the participants. The description of participants includes information about how they were selected and, mainly for quantitative researchers, the population they represent. A description of the sample should indicate its size and major characteristics of members such as age, grade level, ability level, and socioeconomic status. A good description of the sample enables readers of the report to determine how similar study participants are to other populations of concern to the readers.

The instruments and tools used for investigation require detailed description. The description includes the functions of the instrument, its validity, reliability and scoring procedures. If an instrument is developed by the investigator, the description needs to be more detailed that specifies the procedures followed for developing the tools, steps used for determining validity and reliability, response categories, scoring pattern, norms, if any, and guidelines for interpretations. A copy of the instrument with scoring key and other pertinent information related to the

instrument are generally given in appendix of the dissertation and thesis but not given in the main body of the report.

The procedure section should describe the steps that the researcher(s) followed in conducting the study, in chronological order, in sufficient detail to permit the study to be replicated by another researcher. In essence, a step-by-step description of what went on during the study should be provided. It should be clear how participants were assigned to groups or treatments, if appropriate, and the conditions under which participants were observed or interviewed should be described. In many cases, qualitative researchers will produce more complex and detailed procedural descriptions than quantitative researchers will.

Result

The results section describes the statistical techniques applied to data with justification, preselected alpha levels and the result of each analysis. Analysis of data is made under subheadings pertaining to each hypothesis. This chapter follows methodology and presents the outcomes of the statistical analyses of the data. One generally reports descriptive statistics first followed by any inferential statistics. A recommended technique for presenting the results is to organize findings around the hypotheses; that is, the researcher restates the first hypothesis and presents findings concerning it, then repeats this procedure for each hypothesis in turn. Researcher will report whether his/her results are statistically significant or not statistically significant. Remember that statistical significance does not indicate the size of the effect. S/he may need to calculate and report effect size, which indicates the strength of the relationship. Reporting effect size enables his/her readers to compare findings with others' research using the same variables. S/he does not interpret or discuss the results at this point but, rather, merely present the findings. This chapter of the dissertation is thus relatively brief.

Tables and Figures

Tables and figures are used to present findings in summary or graphic form and should add clarity to the presentation. Tables present numerical data in rows and columns and usually include descriptive statistics, such as means and standard deviations, and the results of tests of significance, such as t-tests and F-ratios. Graphs are also given in the main body of the report. Tables and figures enable the reader to comprehend and interpret data quickly. A table shows the quantitative data such as means and standard deviations organized in rows and columns. A figure shows the data in diagram or graphical form. The type of figure researcher uses (bar graph, histogram, polygon, scatterplot, etc.) depends on the kind of data you have and what you want to show. Well-constructed tables and figures should “stand alone” so readers can understand them without having to refer to the text. It is advisable to use several tables rather than to use one table that is crowded. Good tables and figures are self – explanatory. Each table should be presented on the same page. Large tables or graphs should be reduced to manuscript page size either by Photostat on some other process of reproduction. The word table or figure is centered between the page margins and typed in capital letters, followed by the table or figure number in Arabic numerals. Tables and figures are numbered continuously but separately for each chapter. Title of the table and figure is placed in double space below the word table and figure. The title of the table and figure should be brief and clear indicating the nature of table presented. Column

headings and row headings of a table should be clearly labeled. If no data is available for a particular cell, indicate the lack by a dash (-), rather than a zero (0).

The first table in the report usually summarizes the descriptive statistics, such as means, standard deviations, correlations, percentages, and so on. Later tables present the results of applying inferential statistics and tests of significance to the data. Name the calculated statistics; give the degrees of freedom, and give the probability level at which the statistic was significant (or not significant). Use a summary table, for example, to present the results of an analysis of variance. Most style manuals, such as the Publication Manual of the American Psychological Association (American Psychological Association, 2001), provide examples of commonly used types of tables and figures and instructions for their construction. Nicol (1999, 2003) also provides suggestions for creating tables and figures. Computer software has greatly simplified the task of preparing tables and figures for research papers.

When writing the results section, the researcher refers to each table and each figure by number and comments only on the most important and interesting finding in each. Use present tense when pointing out the significant aspects of a table or figure.

Discussion

In this chapter, Researcher is ready for the discussion of the findings as they relate to the original question and hypothesis. This is the place to discuss the practical and/or theoretical implications of the findings. S/he might point out how your findings relate to previous research and suggest additional research that should be done. The following presents an excerpt from Springer et al.'s (2007) discussion of their overall results

In this study, we examined the effects of using a specialized remedial program grounded in evidence-based effective instructional practices (increased practice of critical skills, with continuous monitoring of progress and constant adjustment based on performance). Overall, students who participated in the experimental treatment demonstrated greater gains in overall performance in mathematics achievement as measured by their state's critical competency test required for high school graduation. The program provides an instructional management system that allows students to spend more time reviewing concepts and skills to enhance their performance resulting in positive growth in measured mathematics competence.

The requirement to pass the AIMS math test is likely to create a crisis unless something is done to increase the percentage of students passing the test. The AIMS math skills improvement course significantly increases the number of students who pass the test after initially failing it. (p. 42)

A beginning researcher may find the discussion the most difficult but also the most rewarding to write. This chapter is difficult because there is no standard format for the content; Researcher must use insight and original thinking to provide an explanation and interpretation of the results that you presented previously. Be ready to provide the answer to the original research question. First, discuss how the results support or fail to support the hypotheses of the study. In this interpretation, s/he must deal not only with expected results but also occasionally with unexpected or negative results. Here are some guidelines for interpreting various results.

a. Interpreting expected results

Researchers are understandably pleased when the results of a study fit into the previously constructed framework and interpretation can proceed as expected. The study has “worked,” and there is agreement between rationale and results. Only a few words of caution need apply in interpreting expected results

Do not make interpretations that go beyond the information. This injunction may seem patently obvious, but researchers often get so excited when results are as expected that they draw conclusions that do not have a valid basis in the data. Even published research sometimes offers more interpretations than the data warrant.

Do not forget the limitations of the study. These limitations, of course, should have been previously identified in the study—limitations inherent in the less-than-perfect reliability and validity of the instruments, limitations caused by the restriction in sampling, the internal validity problems, and so forth.

Ethics require that the researcher report internal validity problems that could account for the results. If, despite the researcher’s best efforts, the non-experimental variables were particularly benign for the experimental group and those for the control group were particularly effect, these conditions must be reported and taken into account in interpreting results. (For example, despite random assignment of teachers to groups, the experimental group may have mostly experienced teachers and the control group may have mostly inexperienced teachers.)

Remember that statistical significance means only that for the appropriate degrees of freedom, the results are unlikely to be a function of chance. Practical and statistical significance have very different meanings. Statistical significance does not mean that the results are significant in the generally accepted meaning of the word—that is, important, meaningful, or momentous. Do not assume that statistical significance guarantees momentous import to your findings.

For Example

Suppose that two equivalent groups have been subjected to two different systems of learning spelling during a 2-year period. Those using system A show a mean gain equivalent of 2.15 years of growth on standardized tests during the experiment, whereas those using system B show a gain of 2.20 in the same period. If the groups are large and/or if the differences within groups are small, the differences between the means would be statistically significant. However, a difference of half a month over a 2-year period is relatively meaningless in practical terms.

If system B is more expensive in terms of student time, teacher time, or materials, teachers would be unwise to adopt it simply because it produced statistically significantly greater gains than system A. If, in contrast, system B is less expensive, teachers would be inclined to favor it because its results are so similar to those of system A in practical terms.

The potential importance or meaningfulness of results must be established in the proposal before the study begins. A study is not important if it does not add meaningful information to the existing body of knowledge, no matter how statistically significant the results may be.

b. Interpreting Negative Results

Researchers who find negative results, results opposite to those hypothesized, often develop sudden revelations concerning the shortcomings of their study. Their interpretation of results reads like a confession. The instruments were inadequate for measuring the variables involved; the sample was too small and was so unrepresentative that results cannot be validly generalized to a meaningful target population, and so on. An investigator predicts the expected results of a study on the basis of theory, deduction, experiences, and the results of previous research. If these are so conclusive that there can be absolutely no doubt as to the results of this study, then the study is pointless in the first place.

c. Interpreting Results When the Null Hypothesis Is Retained

Because a null hypothesis may be retained for a variety of reasons, interpreting a retained null hypothesis can be particularly difficult. A retained null hypothesis may occur for the following reasons:

- (i) The null hypothesis is, in fact, true. There may be no relationship between variables. The experimental treatment may be no more effective than the control treatment.
- (ii) The null hypothesis is false, but internal validity problems contaminated the investigation so badly that the actual relationship between variables could not be observed.
- (iii) The null hypothesis is false, but the research design lacked the power to reject it.

Any of these states of affairs may be the case, but the investigator does not know which is true and therefore should not claim any one of them as the explanation for the results. One may suggest additional research, planned in such a way as to avoid the internal validity problems encountered, but still one must report a retained null hypothesis as lack of evidence and no more.

d. Interpreting Un-hypothesized (Serendipitous) Relationships

A researcher should not abandon a hypothesis during the conduct of a study in order to pursue more promising avenues that present themselves during the course of the study. This does not mean that s/he should ignore any un-hypothesized relationships that may observe in conducting a study. On the contrary, s/he should record and analyze them with the same rigor you employ in pursuing hypothesized relationships. Throughout the history of science, such serendipitous discoveries have often proved important. However, such findings should always be viewed with more suspicion than findings directly related to the hypothesis because there is a relatively great possibility that a spurious un-hypothesized relationship will appear in a study. Such relationships should be reported, but they should be considered incidental to the main thrust of the investigation. Before they can be employed as the basis for conclusions, they should be made the subject of a later study specifically designed to investigate them.

e. Implications/Application

It is very important that the researcher point out the specific implications of the research. The results may support or not support relevant theoretical positions. S/he may explain how the theory should be modified and may suggest further studies that would logically follow. Also, discuss how the results fit in with previous research findings. Lastly, give some attention to stating the possible application of the findings to educational practice. The sections on implications and applications of the results are often not sufficiently developed because the writer assumes these will be as obvious to the reader as they are to the investigators. In fact, in the conduct of the study the investigators probably gained insights into the problem that are deeper than those most of their readers can be assumed to have. Therefore, researchers' interpretations should be more meaningful than those that readers might make for themselves.

Conclusions and Summary

Conclusion

Conclusions In the conclusions section, the researcher tells what the research findings mean in conceptual terms. The conclusions indicated by the research findings should be limited to those that have direct support in the research findings. Researchers are often tempted to conclude too much. The hypotheses provide a convenient framework for stating conclusions; that is, indicate in this section whether or not the findings support the hypotheses. It is important to distinguish between results and conclusions. Results are direct observations summarized and integrated by the statistical analysis. A conclusion is an inference based on the results, expressed in terms of the study's hypothesis, such as one group's treatment being more effective than the other group's treatment. For example, a study might result in the observation that the mean spelling test scores of students taught spelling by method A are significantly higher than the mean of students taught by method B. The conclusion that method A is more effective than method B is not a direct result of the study but, rather, is an inference based on the results of the study.

Summary

Because the summary will be more widely read than other sections of the report, its wording must be particularly clear and concise. The summary usually includes a brief restatement of the problem(s), the main features of the methods, and the most important findings. On completing a draft of this section, check it carefully to determine whether it gives a concise but reasonably complete description of the study and its findings. Also check to ascertain that no information has been introduced here that was not included in the appropriate preceding sections.

Supplementary Pages

Reference/ Bibliography

The reference section of the report lists all the sources that were cited in the report. Every source cited in the paper must be included in the references, and every entry listed in the references must appear in the body of the paper; in other words, the citations in the manuscript and the sources in the references must correspond exactly. If APA style is used, in-text citations of secondary sources should indicate the primary source from which they were taken, and only the primary source should be included in the references. For thesis and dissertation studies, any sources

consulted that were not directly cited in the main body of the report may be included in an appendix. The style manual will determine the form each reference must take.

Appendixes

Appendixes are usually necessary in thesis and dissertation reports to provide information and data that are pertinent to the study but are either too lengthy or not important enough to be included in the main body of the report. Appendixes commonly contain materials especially developed for the study (e.g., tests, questionnaires, and cover letters), raw data, and data analysis sheets.

WRITING FOR JOURNAL PUBLICATION

After submit reports in respective departments, students submit their report of research to professional journals for publication. The first task would be to decide which journal to use. There are specialized journals in reading, math, social studies, special education, etc. and also more generalized journals, such as the Journal of Educational Research, the American Educational Research Journal, and the Journal of Educational Psychology. Some journals publish quantitative research, some qualitative, and others accept both. A good first step is to look at your bibliography to determine which journal has published the greatest amount of work in your area of interest.

Information concerning the procedure for submission of manuscripts is usually on the inside of a journal's front cover or can be found on the journal's website. Many journals now accept electronic submissions. Most journals specify which style manual should be used (e.g., the Publication Manual of the American Psychological Association, fifth edition, 2001). If a manual is not specified, you can determine the preferred style, method of referencing, and so on from looking at the articles included in a recent issue of the journal.

A research article submitted to a journal follows the same general outline as a dissertation but must be much shorter. Brevity is essential if you hope to get the article accepted for publication. A thesis or dissertation functions to demonstrate a student's competence and requires a full setting forth of the research question, related literature, methodology, results, and reflective elaboration.

The journal article, in contrast, requires mainly communication of the author's contribution to knowledge. For the sake of economy of journal space and readers' time, the article must be concise. The journal article generally consists of an abstract (100- to 150-word summary of the study), introduction, methods, results, discussion, and list of references. The various sections contain basically the same content as the sections in the dissertation, except that only essential material is included. The results section is probably of greatest interest to the reader and thus represents a greater proportion of the article than it would in a dissertation. One might finish with recommendations for further research.

The main text is followed by a list of references actually cited in the journal article. You also provide any tables and figures on separate pages at the end of the article and indicate where they should be placed in the text.

THE PROFESSIONAL CONFERENCE PAPER

Because of the great lapse of time between submitting a journal article and its appearance in print, many researchers like to present their research at a professional conference before submitting it to a journal. It is often easier to get a paper accepted for a conference than it is to get it published in a journal.

A conference paper is less formal than a journal article and can usually be more precisely geared to its audience. The audience can generally be expected to be familiar with details of related research and methods of measurement.

The paper is frequently organized as follows:

1. Title
2. Abstract
3. Direct statement of the hypothesis
4. Brief description of the procedures
5. Findings, conclusions, and implications

POSTER SESSION PRESENTATIONS

Professional conventions often include poster sessions. Poster presenters are assigned a bulletin board (typically 4 × 8 feet) in a designated room and a designated time frame, typically 1 to 1½ hours. The author mounts the presentation on the bulletin board and stands by it during the designated time. Those interested in the presentation will inspect it and may ask the presenter about it. Only a brief review of the study can fit onto the bulletin board, so only the abstract and highlights can be presented in this format. The presenter should have available the details needed to answer any questions that may be asked. Presenters may have hard copies of the complete report for those who ask. Technology is changing poster presentations as well. Now some have laptop displays, distribute DVDs or CDs with their information, or provide cards with URLs to access.

EVALUATING QUANTITATIVE RESEARCH REPORTS

The following checklist should be useful for evaluating your own quantitative research reports and the reports of others. It brings together many of the topics presented in this text.

Title

1. Is the title brief but informative?
2. Does the title make clear the population of interest and the major variables?
3. Have vague, ambiguous, and emotion-laden terms been avoided?

Statement of the Problem

1. Have the variables of interest been identified?
2. Has the theoretical foundation for the study been developed?
3. Is the problem clearly stated?
4. Is there a justification or rationale for the study?

Related Literature

1. Is the related literature relevant and sufficient?
2. Are the connections between the present study and the previous research and theory made clear?

Hypotheses

1. Are the hypotheses explicit?
2. Do the hypotheses follow logically from the statement of the problem?

Participants

1. Is the population of interest defined?
2. Is the method for selecting the sample explicit?
3. Does the sampling allow for generalization to the population of interest?

Procedures

1. Are the procedures described well enough to allow replication of the study?
2. Do the procedures include appropriate operational definitions of the independent and dependent variables?
3. Do the procedures provide sufficient control for internal validity?
4. Do the procedures provide sufficient control for external validity?

Instruments

1. Are the instruments adequately described?
2. Is information on the validity and reliability of the instruments provided?
3. Are the instruments appropriate operational definitions of the dependent variables?

Analysis of the Data

1. Are the descriptive statistics used appropriate for summarizing the data?
2. Are the inferential statistics used appropriate for testing the hypotheses?
3. Are the statistics appropriate for the level of measurement of the data?

Results

1. Are the results of all hypothesis tests presented?
2. Have effect sizes been reported?
3. Are the results clearly presented?
4. Are tables and figures used appropriately?

Discussion

1. Is there a clear interpretation of the results?
2. Does the author present implications of the study results?
3. Are the implications presented based on the results of the study, not on what the author hoped or expected to be true?
4. Are appropriate applications discussed?
5. Do the applications follow logically from the results of the study?

6. Are the connections between the results and theory and existing literature shown?
7. Are there suggestions for future research?

Conclusions

1. Are the conclusions clearly presented?
2. Do the conclusions follow logically from the results of the study?
3. Has the author avoided reaching conclusions that are not directly supported by the outcomes of the study?

Summary

1. Is the summary clear, concise, and sufficiently complete?

STYLE MANUALS

The following are widely used manuals detailing general form and style for theses and dissertations:

Amato, C. J. (2002). *The world's easiest guide to using the APA: A user-friendly manual for formatting research papers according to the APA style guide* (3rd Ed.). Corona, CA: Stargazer.

American Psychological Association. (2001). *Publication manual of the American Psychological Association* (5th ed.). Washington, DC: Author.

American Psychological Association. (2008). APA-Style Helper 5.1 software. Conforms to the latest standards of the fifth edition of the *Publication Manual* of the APA. Please note: Style Helper 5.1 is *not* compatible with Microsoft Word 2007.

American Psychological Association. Free online style tips at www.apastyle.org.

Gelfand, H. (2002). *Mastering APA style: Student workbook and training guide*.

Washington, DC: American Psychological Association.

Gibaldi, J. (2006). *MLA handbook for writers of research papers*. New York: Modern Language Association.

Rudestam, K. E., & Kjell, E. (2007). *Surviving your dissertation: A comprehensive guide to content and process*. Thousand Oaks, CA: Sage.

Slade, C. (2007). *Form and style: Research papers, reports, theses*. Boston: Houghton Mifflin.

Strunk, W., Jr., White, E. B., & Kalman, M. (2007). *The elements of style*. New York: Penguin.

Turabian, K. (1996). *A manual for writers of term papers, theses, and dissertations* (6th ed.). Chicago: University of Chicago Press.

University of Chicago Press. (2007). *The Chicago manual of style*. Chicago: Author.

REPORTING QUALITATIVE RESEARCH

Although representation takes a variety of formats for qualitative researchers, the student or novice researcher is most likely expected to produce a more typical research report. These qualitative reports generally include the following elements or some variation of them:

1. Abstract
2. Introduction
3. Research design, steps to ensure credibility (validity) and dependability (reliability)
4. Methods, site and sample selection, data collection methods, data analysis procedures
5. Findings
6. Interpretations and implications
7. References
8. Appendix

Abstract

An abstract is a very brief summary of the major aspects of the qualitative inquiry: problem, design, methods, and outcomes. Complete and concise abstracts are very helpful to readers who are conducting literature reviews.

Introduction

In the introduction, the writer states the purpose of the research study and provides the reader with some background of the problem and the need for the study. State the focus of inquiry as a question or a statement. Indicate how researcher became interested in the topic and how the question evolved. Present and discuss any relevant research in this section because, typically, there is not a separate section for review of the literature. The introduction in a qualitative report may also contain an interesting story or quote to capture the reader's interest. In addition, the researcher's preliminary biases or suppositions should be revealed.

Research Design

In the section on research design, explain the qualitative approach used and why Researcher chose it to investigate the problem. Also discuss the steps taken to ensure credibility, dependability, transferability, and confirmability of the study, such as triangulation, audit trail, member checks, and so forth (these are discussed in the next section of this chapter). It is important to describe how bias was controlled and the limitations of the study.

Methods

In the methods section, describe the research method that was followed to obtain the findings. The reader should not have to wonder about what was done, to whom, or how it was done. Some aspects to cover in separate parts of the methods section are as follows.

Site and Sample Selection

The researcher describes the site of the study and the participants involved. The investigator describes the participants demographically, how they were selected, and how entry was gained into the site; gives a detailed description of the site; and so on. Researchers generally use fictitious names of people and places to protect the privacy of the participants and the site.

Data Collection Methods

The section on data collection methods describes the methods used to gather the data (interviews, observation, document analysis, and so on) and explains why these methods were chosen. Because the main instrument in qualitative research is the human instrument, it is important that the writer give some personal or professional information about him-or herself that might be relevant to the inquiry. A complete discussion of the methodology is essential so that readers of the report can understand how the researcher reached conclusions and can agree or disagree with those conclusions.

Data Analysis Procedures

The researcher should describe the approach taken in the analysis of the data. If you used the constant comparative procedure, for example, make this explicit.

Findings

This section contains the major findings or propositions relevant to the original focus of inquiry that are revealed in the data. Findings may be reported by data collection method (survey, interviews, documents, etc.), by cases (School 1, School 2, etc.), or by theme or topics (real-world connections, active learning, extrinsic rewards, etc.). One challenge for qualitative researchers is deciding what not to include in their reports. The researcher must rank the outcomes primarily on the basis of their relevance and significance.

Interpretations and Implications

In the final section, researcher respond to the implicit question, so what? Here, the researcher tries to make sense of the findings, interpret what s/he has found. S/he discusses the meaning of the outcomes reported in the previous section and state major conclusions and implications of the study and should relate the study to previous research and suggest directions for future research efforts. This is also the section in which new or integrating theories may be proposed.

References

A complete alphabetical listing of all works cited in the report is presented in the reference section of the report.

Appendix

The appendix includes interview schedules and other documentation that will help the reader understand the report. Reports of qualitative inquiry will vary in form depending on the approach used (as mentioned previously) as well as the nature of the publication in which they appear (e.g., an article prepared for the *American Educational Research Journal* will differ from a monograph or book-length study). It will be helpful to the student who is writing a qualitative report to read

qualitative studies that use the same approach and to examine journal articles to see how the reports are organized. Some suggested journals that publish qualitative research include the *International Journal of Qualitative Studies in Education*, *Qualitative Inquiry*, and *The Qualitative Report* (an online journal). Merriam and Associates (2002) present sample articles showing basic interpretive, phenomenological, grounded theory, case study, ethnographic, and narrative analysis approaches to writing reports.

Writing is extremely important in qualitative research. Qualitative reports are generally heavily narrative in form and contain rich descriptions of setting and context. This “thick description” is intended to place readers vividly in the research setting so that they can follow the logical processes that the researcher went through in collecting the data. The role of the writer is to “tell the story the data tell.” In contrast to the more technical and structured style of quantitative reports, a qualitative report is more like a story and may have very little, if any, technical language. A qualitative report may not follow a conventional organizational format. Literature may not be found in a separate section of the report but may be woven into the findings with the themes identified from the current study connected to the work of others.

The approaches to writing a qualitative report vary. Some are more journalistic in style, interpreting the connections among events and people. Some approach it as a translator would, interpret others’ worlds. Some appear as realist tales presenting observations and descriptions in great detail. Some may appear as a historical report, following a chronology. Some may read as confessional tales from the author’s viewpoint. Some use techniques found in drama and other artistic modes. Qualitative reports convey the participants’ thoughts, feelings, and experiences in their own words as much as possible. Note that it is acceptable in qualitative reports for writers to refer to themselves in the first person, to distinguish their opinions from those of the participants. Qualitative reports more frequently incorporate visual representations (computer-generated graphics, pictures, videos, audio, etc.) as well as rely extensively on quotes to help the reader “see” and “experience” the participants’ world.

Evaluating Qualitative Reports

The following are some of the general criteria used to evaluate qualitative reports:

1. Is the research question stated, and does the researcher make clear the conceptual and/or theoretical framework for the study?
2. Does the researcher show the relationship between the study and what is known in the literature?
3. Does the researcher indicate how and why the site and/or participants were selected for the study? Does the researcher explain the extent to which participants are representative?
4. Are the data collection methods explained so that the reader can judge if they were adequate and appropriate to the question? Does the researcher explain his or her role as participant observer or nonparticipant observer, interviewer and so on?
5. Does the researcher explain the data analysis procedures used?
6. Are the strategies used to enhance the credibility, transferability, dependability, and confirmability of the data (i.e., triangulation, audit trail, etc.) described?

7. Are the descriptive data separate from the interpretations? Is there abundant raw data presented (quotes, etc.) to demonstrate the findings?
8. Is there evidence that the researcher maintained ethical standards? Are personal biases and assumptions expressed? Have steps been taken to guard against value judgments in data collection and analysis?
9. Does the study answer the research question and suggest further questions for investigation?
10. Does the researcher make explicit the significance of the study?
11. Does the report qualify any generalizations that were made, and does it help the reader understand how what was learned might be transferred to another similar situation?
12. Is the study reported in a way that is accessible to others?

The reader also needs to recognize that in choosing to use certain qualitative approaches; more targeted questions may need to be considered in evaluating quality.

In 2004, the National Science Foundation produced a report, *Workshop on Scientific Foundations of Qualitative Research* (Ragin, Nagel, & White, 2004), that investigated the characteristics of strong qualitative research and provided recommendations on how to strengthen qualitative methods. Their recommendations are worth noting here as we conclude this chapter. They indicate that these recommendations should be used both to improve the quality of qualitative proposals and reports and to evaluate the quality of the research conducted. In strong qualitative research, the researcher should:

- Write clearly and engagingly for a broad audience.
- Situate the research in relationship to existing theory.
- Locate the research in the literature specifying comparable cases and building on others' findings.
- Articulate the potential theoretical contribution by indicating what gaps in theory might be filled.
- Clearly outline the research procedures including details about where, when, who, what, and how the research will be conducted.
- Provide evidence of the project's feasibility, including permission to access the site and human subjects' approval.
- Provide a description of the data to be collected including kinds of evidence to be gathered, different modes of data collection, and different places data will be obtained.
- Explain the plan for data analysis, including management of the data and procedures for making sense of the information obtained.
- Describe the strategy to refine concepts and construct theory as the investigation continues.
- Include plans to search for and interpret disconfirming evidence, alternative explanations, and unexpected findings.
- Provide an assessment of the possible impact of the researcher's presence and biography on the research from the point of problem selection through data analysis to address potential bias of results.

- Provide information about replicability and suggest ways others might reproduce the research.
- Describe the data archive (audit trail) that will be left for others to use and how you will maintain confidentiality.

Suggested Reading

Ary, D., Jacobs, L. C., Sorensen, C., and Razavieh, A. (2010), Introduction to Research in Education, Wadsworth Cengage Learning, Canada.

Best, J. W. and Kahn, J. V. (1995), Research in Education, Prentice Hall, New Delhi.

Cohen, L., Manison, L., and Morrison, K. (2018), *Research Methods in Education*, Routledge, London and New York.

Creswell, J. W. (2012), *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, Pearson, New York.

Gay, L. R., Mills, G.E., and Airasian, P. W. (2012), *Educational Research Competencies for Analysis and Application*, Pearson, New York.

Kerlinger, Fred. N. (1978), *Foundations of Behavioral Research*, New York University.

Kothari, R.C. (2004), *Research Methodology*, New Delhi, New Age International (P) Limited, Publishers.

Langenbach, M., Vaughn, C., and Aagaard, L. (1993), *An Introduction to Educational Research*, Allyn and Bacon, Boston.