



6. “Enhancing skills in writing Research Reports”

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Abstract:

Advanced writing skills are an important aspect of academic performance as well as of subsequent work-related performance. In order to achieve higher levels of writing performance, the working memory demands of writing processes should be reduced so that executive attention is free to coordinate interactions among them. This can in theory be achieved through deliberate practice that trains writers to develop executive control through repeated opportunities to write and through timely and relevant feedback. This outlines the broad areas to cover while giving a clearer picture to enhance skills in writing research reports. The structure and objectives help in the thinking process, so as to focus on the topic of the research. The research design and effective written methodology are covered to enhance the skills of the researcher.

Key words: Writing Skills, Research reports, written methodology.

Introduction:

Research reports are the output of any small or major research. Most research papers normally require a thesis statement. A thesis statement is a main idea, a central point of your research paper. The arguments you provide in your paper should be based on this central idea that is why it is so important. Do some critical thinking and write your thesis statement in one sentence. Use a particular subject. The paper should present something new to the readers to make it interesting and educative to read¹.

State your chief reason or purpose of your research paper clearly. State also how you plan to approach your topic.

Literature review:

As you read and research, try to organise your work into sections by theme, a bit like writing a Literature Review. All your thinking needs to be focused on that, which may require you to be ruthless in your reading and thinking. Anything irrelevant should be discarded. Make sure that you keep track of your references, especially for academic work. Although referencing is perhaps less important in the workplace, it's also important that you can substantiate any assertions that you make so it's helpful to keep track of your sources of information³.



According to Ven, Henry collect as many references as possible in your research area. And read them all. Yes, it may sound like the best academic writers have a shortcut, but they don't. The more you read academic papers, the better you become in assimilating and understanding the knowledge in your domain. And you will get better in citing the right sources for your research—an important part of building effective arguments in your paper².

Ven, Harry: According to his blog “11 ways you can get better in communicating your research”². One of them is Literature review he has stressed on going through primary, secondary and tertiary documents depending on the research topic . These materials are easily available in the Libraries. For. Example

- Almanacs, Atlases, AV catalogues
- Magazines, Newspapers
- Encyclopaedias, Dictionaries, Indexes & Abstracts.
- Government Publications & Reports

There are other resources which are used more and more now a days, and are available in web based services, special resources materials on cd's, databases and E-books. For Example:

- Online reference materials (including databases, such as SIRS, ProQuest, eLibrary, etc.)
- Google Scholar.
- Wall Street Executive Library
- Answers.com – an online dictionary and encyclopaedia all- in-one resource .

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Basic structure of Research Reports:

The main body of the report should be carefully structured in a way that leads the reader through the issue. You should split it into sections using numbered sub-headings relating to themes or areas for consideration. For each theme, you should aim to set out clearly and concisely the main issue under discussion and any areas of difficulty or disagreement. It may also include experimental results. All the information that you present should be related back to the brief and the precise subject under discussion³.



General Structure

Like an academic paper for journal publication, dissertations generally follow a fairly standard structure. The following pages discuss each of these in turn, and give more detailed advice about how to prepare and write each one:

- Research Proposal
- Introduction
- Literature Review
- Methodology
- Results and Discussion
- Conclusions and Extra Sections

According to Hertzmann, Aaron the Body of the research paper⁴ should be as follows:-

- Organize the paper with a logical flow
- Provide sufficient signposting to explain where you're going and to dive in
- Provide experiments and demonstrations to justify all of your main claims
- Compare with all relevant existing methods (and obvious, trivial extensions)

Table-1 Characteristics of Writing Skill⁵

1	Structure	<ul style="list-style-type: none">• Discipline specific guidelines e.g., Psychology normally has strict constraints regarding the how to write Psychology reports• Are the uses of headings appropriate?• Is there a logical introduction and conclusion?
2	Style	<ul style="list-style-type: none">• Is it concise?• Check for clarity, brevity, simplicity, and humanity• Length of sentences and paragraphs• Avoidance of jargon• Suitable for the audience (e.g. final year students, general public)• Avoidance of repetition
3	Content	<ul style="list-style-type: none">• Check spelling and grammar• Is there a logical argument?• Are references relevant and contemporary?

*http://shodhganga.inflibnet.ac.in/bitstream/10603/44227/12/12_chapter%204.pdf

Here is a brief list of skills required⁶:



Objectivity and Even handedness:

A research report should not have a clear agenda. Even if you are testing a controversial scientific theory, you should not set out to disprove it or to arrive at a specific result. A hypothesis is not the same as a claim of fact, nor is it an argument or a formal position. Instead, a scientific paper should be interested in using rigorous, methodologically sound means to arrive at an accurate conclusion. This may require you to admit that your prediction was wrong, or that you cannot explain why a pattern of results appeared. Scientific writing requires humility, objectivity, and openness to new possibilities.

Clear Language:

Research reports should also be composed in clear English without any literary tricks or flourishes. The goal of scientific prose is not to be pretty, relatable, or illustrative, but to plainly state the facts in a manner that all other scientists can follow. Sentences should be short and direct, and ought to be written in the active voice as often as possible. Jargon and long, meandering sentences should be avoided at all costs.

Thoroughness:

In addition to being clear and simple, research reports must also display a high attention to detail. Science writers must list all the relevant information in their methods, background research, materials, and statistical analysis sections. A research report necessarily involves using and expanding upon existing academic work, and proper credit should be given for any work that is used. Consider your research report a recipe or a procedure that other scientists may follow.

Theoretical thinking :

A research report must also be mindful of the underlying scientific theories that are related to the empirical work. Science is not merely a process of conducting experiments and reporting the results, after all. Science is all about generating new predictions and formal models of understanding the world. Your report should do the same.

Research Design:

The basic principles of Research Design⁷: According to one of the most respected management research textbooks, written by Mark Easterby-Smith, Thorpe and Jackson, there are four main features of research design, which are distinct, but closely related.

They are:



1. Ontology : How you, the researcher, view the world and the assumptions that you make about the nature of the world and of reality.
2. Epistemology: The assumptions that you make about the best way of investigating the world and about reality.
3. Methodology: The way that you group together your research techniques to make a coherent picture.
4. Methods and techniques: What you actually do in order to collect your data and carry out your investigations.

Easterby-Smith and colleagues liken these four to the rings of a tree trunk: the methods are the outermost and most visible but without the inner ones, the outer one would die. All four need to be coherent and consistent to create a viable research design.

These principles are the same, whether you are doing scientific research in a laboratory or sending out a customer questionnaire. Before choosing your methods, you need to understand how they fit with your 'bigger picture' of the world, and how you choose to investigate it, to ensure that your work will be coherent and effective.

The introduction to your methodology section should begin by restating the research problem and underlying assumptions underpinning your study.

This is followed by situating the methods you will use to gather, analyze, and process information within the overall “tradition” of your field of study and within the particular research design you have chosen to study the problem. The methods you choose may lie outside the tradition of your field [i.e., your review of the literature demonstrates that the method is not commonly used], provide a justification for how your choice of methods specifically addresses the research problem in ways that have not been utilized in prior studies⁸.

The remainder of your methodology section should describe the following:

- Decisions made in selecting the data you have analyzed or, in the case of qualitative research, the subjects and research setting you have examined.
- Tools and methods used to identify and collect information, and how you identified relevant variables.
- The ways in which you processed the data and the procedures you used to analyze that data.
- The specific research tools or strategies that you utilized to study the underlying hypothesis and research questions.



An effectively written methodology section⁸ should:

- Introduce the overall methodological approach for investigating your research problem. Is your study qualitative or quantitative or a combination of both (mixed method)? Are you going to take a special approach, such as action research, or a more neutral stance?
- Indicate how the approach fits the overall research design. Your methods for gathering data should have a clear connection to your research problem. In other words, make sure that your methods will actually address the problem. One of the most common deficiencies found in research papers is that the proposed methodology is not suitable to achieving the stated objective of your paper.
- Describe the specific methods of data collection you are going to use, such as, surveys, interviews, questionnaires, observation, archival research. If you are analyzing existing data, such as a data set or archival documents, describe how it was originally created or gathered and by whom. Also be sure to explain how older data is still relevant to investigating the current research problem.
- Explain how you intend to analyze your results. Will you use statistical analysis? Will you use specific theoretical perspectives to help you analyze a text or explain observed behaviors? Describe how you plan to obtain an accurate assessment of relationships, patterns, trends, distributions, and possible contradictions found in the data.
- Provide background and a rationale for methodologies that are unfamiliar for your readers. Very often in the social sciences, research problems and the methods for investigating them require more explanation/rationale than widely accepted rules governing the natural and physical sciences. Be clear and concise in your explanation.
- Provide a justification for subject selection and sampling procedure. For instance, if you propose to conduct interviews, how do you intend to select the sample population? If you are analyzing texts, which texts have you chosen, and why? If you are using statistics, why is this set of data being used? If other data sources exist, explain why the data you chose is most appropriate to addressing the research problem.
- Describe potential limitations. Are there any practical limitations that could affect your data collection? How will you attempt to control for potential confounding variables and errors? If your methodology may lead to problems you can anticipate, state this openly and show why pursuing this methodology outweighs the risk of these problems cropping up.



Once you have written all of the elements of the methods section, subsequent revisions should focus on how to present those elements as clearly and as logically as possible. The description of how you prepared to study the research problem, how you gathered the data, and the protocol for analyzing the data should be organized chronologically. For clarity, when a large amount of detail must be presented, information should be presented in sub-sections according to topic.

If you are conducting a qualitative analysis of a research problem, the methodology section generally requires a more elaborate description of the methods used as well as an explanation of the processes applied to gathering and analyzing of data than is generally required for studies using quantitative methods. Because you are the primary instrument for generating the data, the process for collecting that data has a significantly greater impact on producing the findings. Therefore, qualitative research requires a more detailed description of the methods used.

Findings:

This is the most important stage in the whole process of report writing, since it showcases your intellectual capacity. After analysing the data and we find a new perspective or form a different opinion. At this point, you will restate the research questions and you will discuss the result you found, explaining the direction they led you to. In other words, you will answer those questions.

Conclusion:

The conclusion sets out what inferences you draw from the information, including any experimental results. It may include recommendations, or these may be included in a separate section.

Recommendations:

These are the suggestion made as to how you think the situation could be improved, and should be specific, achievable and measurable. If your recommendations have financial implications, you should set these out clearly, with estimated costs if possible.

Bibliography : Use the recommended citation style for your field of study, and make sure to include all sources used during the research and writing stages.

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