Research: Proposal

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Research Proposal – Definitions - 1

"… the meaning of *proposal* … suggests looking forward, to what the researcher *plans to do in the future*. … The proposal lays out the problem for research, describes exactly how the research will be conducted, and outlines in precise detail the resources – both factual and instrumental – the researcher will use to achieve the desired results."

Leedy & Omrod, *Practical* Research. 8th ed, p. 117, 115.

Research Proposal – Definitions - 2

"A research proposal is a document that describes the essential features of a study to be conducted in the future, as well as the strategy whereby the inquiry may be logically and successfully accomplished."

Busha & Harter, *Research Methods in* Librarianship, p. 343.

Research Proposal - Definitions - 3

"The academic research proposal is a structured presentation of what you plan to do in research and how you plan to do it."

Smith, p. 34

Introduction

- …is format and detailed statement of intent of the researcher
- …..presents and justifies a plan of action and shows the investigation plan

Introduction

Question to be asked	Steps to be taken	Elements of the step
What is the problem? Why should be studied?	Selection and statement of the problem	-Problem identification - Problem prioritization - Justification
What information is already available?	Literature review	-Sources -Reviewing
Why do conduct research? What is the achievement of the research?	Formulation of aim and objectives	-- Aim, goals -General and specific objectives - Hypothesis
How to carry out the research? How to collect data and information? Wherefrom to collect data and information?	Research methodology	-Variables - Types of the research - Data collection techniques - Sampling - Data analysis process, plan -Data processing plan -Data interpretation process, plan

Introduction

Question to be asked	Steps to be taken	Elements of the step
Who will collect and when?	Work plan	-Personnel, manpower - Timetable
How will be monitored? How the research findings will be used?	Research administration plan	-Administration - Monitoring -Identification of potential users
What and how much resources are needed? Who will provide the resources ?	Budget Funding Organizations	-3 Ms: Man, materials, money - Fund collection, fund raising
Who will submit? How to submit? Where to submit?	Proposal preparation Proposal presentation Appropriate authority	-Researcher - Proposal - Presentation techniques

What is a research proposal?

- Various terminologies are used to mean a research proposal depending on why the research is carried out?
  - ✓ Research outline
  - ✓ Synopsis of research
  - ✓ Plan of research
  - ✓ Research/project proposal
  - ✓ Thesis plan
  - ✓ Etc
- .. ..a blue print of future activities of a research project
- …..some sort of preconceived framework for starting the activities
- …..deals with ideas of researcher about what research he/she wants to do, what objectives and methodology he/she has set, how much time and resources are required to complete it, how the research finding are to be reported, and so on.

What is a research proposal?

- .....deals with ideas of researcher about
  - ✓ what research he/she wants to do
  - ✓ what objectives and methodology he/she has set
  - ✓ how much time and resources are required to complete it
  - ✓ how the research finding are to be reported
  - ✓ and so on.
- ..is an individual's or a research institute's formal offer to produce a product or render service to a client in response to a request from the client
- ….a work plan, prospectus, outline, and statement of intent ahead.
- In short, he/she is proposing a work frame for completing the research

How to write research proposal?

- A research proposal is intended to convince others that you have a worthwhile research project and that you have the competence and the work-plan to complete it.

- Generally, a research proposal should contain all the key elements involved in the research process and include sufficient information for the readers to evaluate the proposed study.

- Regardless of your research area and the methodology you choose, all research proposals must address the following questions:
  - ✓ What you plan to accomplish
  - ✓ why you want to do it and
  - ✓ how you are going to do it.

How to write research proposal?

- The proposal should have sufficient information to convince your readers that you have an important research idea, that you have a good grasp of the relevant literature and the major issues, and that your methodology is sound.

Title

It should be concise and descriptive. Often titles are stated in terms of a functional relationship, because such titles clearly indicate the independent and dependent variables. However, if possible, think of an informative but catchy title. An effective title not only pricks the reader's interest, but also predisposes him/her favourably towards the proposal.

Abstract

It is a brief summary of approximately 300 words. It should include the research question, the rationale for the study, the hypothesis (if any), the method and the main findings.

How to write research proposal?

Introduction

The main purpose of the introduction is to provide the necessary background or context for your research problem. How to frame the research problem is perhaps the biggest problem in proposal writing.

However, try to place your research question in the context of either a current "hot" area, or an older area that remains viable. Secondly, you need to provide a brief but appropriate historical backdrop. Thirdly, provide the contemporary context in which your proposed research question occupies the central stage. Finally, identify "key players" and refer to the most relevant and representative publications. In short, try to paint your research question in broad brushes and at the same time bring out its significance.

How to write research proposal?

The introduction generally covers the following elements:

- ✓ State the research problem, which is often referred to as the purpose of the study
- ✓ Provide the context and set the stage for your research question in such a way as to show its necessity and importance
- ✓ Present the rationale of your proposed study and clearly indicate why it is worth doing
- ✓ Briefly describe the major issues and sub-problems to be addressed by your research.
- ✓ Identify the key independent and dependent variables of your experiment. Alternatively, specify the phenomenon you want to study
- ✓ State your hypothesis or theory, if any. For exploratory or phenomenological research, you may not have any hypotheses. (Please do not confuse the hypothesis with the statistical null hypothesis.)
- ✓ Set the delimitation or boundaries of your proposed research in order to provide a clear focus.
- ✓ Provide definitions of key concepts. (This is optional.)

How to write research proposal?

Literature Review

✓ most professors prefer a separate section, which allows a more thorough review of the literature

The literature review serves several important functions:

✓ Ensures that you are not "reinventing the wheel“

✓ Gives credits to those who have laid the groundwork for your research

✓ Demonstrates your knowledge of the research problem

✓ Demonstrates your understanding of the theoretical and research issues related to your research question

✓ Shows your ability to critically evaluate relevant literature information

✓ Indicates your ability to integrate and synthesize the existing literature

✓ Provides new theoretical insights or develops a new model as the conceptual framework for your research

✓ Convinces your reader that your proposed research will make a significant and substantial contribution to the literature (i.e., resolving an important theoretical issue or filling a major gap in the literature).

How to write research proposal?

Methods

The Method section is very important because it tells your Research Committee how you plan to tackle your research problem. It will provide your work plan and describe the activities necessary for the completion of your project

- ✓ The guiding principle for writing the Method section is that it should contain sufficient information for the reader to determine whether methodology is sound
- ✓ Furthermore, since there are no well-established and widely accepted canons in qualitative analysis, your method section needs to be more elaborate than what is required for traditional quantitative research
- ✓ More importantly, the data collection process in qualitative research has a far greater impact on the results as compared to quantitative research.

How to write research proposal?

For quantitative studies, the method section typically consists of the following sections:

- ✓ Design -Is it a questionnaire study or a laboratory experiment? What kind of design do you choose?
- ✓ Subjects or participants - Who will take part in your study ? What kind of sampling procedure do you use?
- ✓ Instruments - What kind of measuring instruments or questionnaires do you use? Why do you choose them? Are they valid and reliable?
- ✓ Procedure - How do you plan to carry out your study? What activities are involved? How long does it take?

How to write research proposal?

Results

Obviously you do not have results at the proposal stage. However, you need to have some idea about what kind of data you will be collecting, and what statistical procedures will be used in order to answer your research question or test you hypothesis.

Discussion

It is important to convince your reader of the potential impact of your proposed research. You need to communicate a sense of enthusiasm and confidence without exaggerating the merits of your proposal. That is why you also need to mention the limitations and weaknesses of the proposed research, which may be justified by time and financial constraints as well as by the early developmental stage of your research area.

How to write research proposal?

Common Mistakes in Proposal Writing

- ✓ Failure to provide the proper context to frame the research question
- ✓ Failure to delimit the boundary conditions for your research
- ✓ Failure to cite landmark studies
- ✓ Failure to accurately present the theoretical and empirical contributions by other researchers
- ✓ Failure to stay focused on the research question
- ✓ Failure to develop a coherent and persuasive argument for the proposed research
- ✓ Too much detail on minor issues, but not enough detail on major issues
- ✓ Too much rambling -- going "all over the map" without a clear sense of direction. (The best proposals move forward with ease and grace like a seamless river.)
- ✓ Too many citation lapses and incorrect references
- ✓ Too long or too short.

(Paul T. P. Wong, Ph.D., C.Psych. Research Director, Graduate Program in Counselling Psychology, Trinity Western University, Langley, BC, Canada)

Guidelines on writing a research proposal

- Proposal writing is important to your pursuit of a graduate degree. The proposal is, in effect, an intellectual scholastic (not legal) contract between you and your committee.
- It specifies what you will do, how you will do it, and how you will interpret the results.
- The objective in writing a proposal is to describe what you will do, why it should be done, how you will do it and what you expect will result. Being clear about these things from the beginning will help you complete your thesis in a timely fashion.
- A vague, weak or fuzzy proposal can lead to a long, painful, and often unsuccessful thesis writing exercise.
- A clean, well thought-out, proposal forms the backbone for the thesis itself. The structures are identical and through the miracle of word-processing, your proposal will probably become your thesis.
- A good thesis proposal hinges on a good idea. Once you have a good idea, you can draft the proposal in an evening.
- Proposals help you estimate the size of a project. Don't make the project too big.

Guidelines on writing a research proposal

The (Longer) Standard Model

A Basic Proposal Outline:

Introduction

- ✓ Topic area
- ✓ Research question
- ✓ Significance to knowledge

Literature review

- ✓ Previous research others & yours
- ✓ Interlocking findings and Unanswered questions
- ✓ Your preliminary work on the topic
- ✓ The remaining questions and inter-locking logic
- ✓ Reprise of your research question(s) in this context

Guidelines on writing a research proposal

Methodology

- ✓ Approach
- ✓ Data needs
- ✓ Analytic techniques
- ✓ Plan for interpreting results

Expected results

Budget

Bibliography (or References)

Guidelines on writing a research proposal

The Basic Thesis Outline

Introduction

- ✓ Topic area
- ✓ Research question (finding?)
- ✓ Significance to knowledge

Literature review

- ✓ Previous research others & yours
- ✓ Interlocking findings and Unanswered questions
- ✓ Your preliminary work on the topic
- ✓ The remaining questions and inter-locking logic
- ✓ Reprise of your research question(s) in this context

Guidelines on writing a research proposal

Methodology
- ✓ Approach
- ✓ Data needs
- ✓ Analytic techniques
- ✓ Plan for interpreting results

Results

Discussion and Conclusions

Bibliography

Components/elements of research proposal

- Title
- Introduction
- Statement of the problem
- Rationale/justification/significance of the research
- Scope and limitations of the study
- Review of literature
- Objectives of the research
- Operational definitions of terms used
- Hypothesis
- Methodology Used
- Time schedule/work plan
- Budget/estimated cost built up
- Organization of the report/chapter outline
- Bibliography/References
- Conclusions
- Appendix

Components/elements of research proposal

Title

- First page – title of the research; researcher's name; name of institute/organization where the researcher belongs; name of the sponsoring organization, name of the supervisor, co-supervisor; date; etc
- In selecting the title, the following points should be taken care of:

✓ Reflect the theme of the research

✓ Be self-explanatory

✓ Be brief

✓ Language be simple and unambiguous

✓ Be specific to a particular domain

✓ Bracket; arithmetic figures, etc be avoided

✓ Avoid confusing meaning

✓

✓

✓

Components/elements of research proposal

Introduction

- Thereoretical background
- Background of the problem
- Etc

Statement of the problem

- Definition
- Nature
- Extent

Components/elements of research proposal

Rationale/justification/significance of the research

- Importance
- Addressing the national context problem
- Bridging the knowledge gaps
- Useful to the society/community
- Present state of affairs
- Affected stakeholders

Scope and limitations of the study

- Boundaries of the research
- Aspects and issues addressed
- Shortcomings of the research – resource and time constraints

Components/elements of research proposal

Review of literature

- Researches so conducted; vital information
- Issues discussed; unaddressed issues
- Relevancy to the present research
- Finding out information/knowledge gaps

Objectives of the research

- Contextual/consistent to the title
- Concise, clear-cut, expressed in simple language, precise, self-explanatory
- Distinctive, quantifiable , measurable
- Two types of objectives : general/broad/overall; specific

Components/elements of research proposal

Operational definitions of terms used

- Clear-cut meaning of the terms used

Hypothesis

- Proposition subject to verification
- May be null, accepted, rejected
- Guide/lead the research

Methodology Used

- Selection of appropriate approach
- Tools/techniques to be used
- Data collection techniques
- Data processing, analysis, interpretation techniques
- Data/information presentation techniques

Components/elements of research proposal

Time schedule/work plan

- Time line of the assigned tasks
- Time line of the resource flow – 3Ms

Budget/estimated cost built up

- Cost built up – resource personnel, support staff, stationery, transport, utilities, house rents, miscellaneous, etc

Organization of the report/chapter outline

- Outline of the dissertation/report
- Four major parts of the report: introductory, findings and discussion, summary, and conclusion

Part	Desired share (%)	Acceptable share (%)
Introductory	10	15
Findings and Discussion	80	70
Summary and Conclusion	10	15
Total	100	100

Components/elements of research proposal

Bibliography/References

- Related documents to be consulted/studies
- Follow technicalities in writing bibliography/references
- To be presented in alphabetic order
- To be presented in classified manner viz., manuscripts, books, journals, commission reports, newspapers, etc

Conclusion

- State about the feasibility of the proposed research/study
- Upcoming challenges
- Upcoming treats, difficulties, hindrances
- Make a conclusive remak

Tips and Tricks

- Read and read
- Take notes
- Talk to supervisors, experts, fellows
- Write topics and topics
- Get confused, get afraid
- Generate a number of research questions
- Systematize research questions
- Cut down these in line with your coherent thinkings

Common Mistakes

- To provide context to frame research question(s)
- To delimit the boundary of research issue(s)
- To cite landmark studies undertaken so far
- To present accurate theoretical background of the study
- To focus the research questions(s)
- To develop coherent and persuasive arguments
- Too much detailed or too much short on major issues
- Too much rambling – going all over without clear cut sense of direction
- Incorrect citation/references
- Too long or too short
-

DOs and DO NOTs

- DO
- ✓ Produce/prepare a professional looking proposal
- ✓ Make it interesting
- ✓ Make it informative, meaningful
- ✓ Write easy way to read
- ✓ Present content in a page
- ✓ Use clear headings/sub-headings
- ✓ Be concise, precise
- ✓ Check spelling, grammar
- ✓ Present in accurate/acceptable format

- DO NOTs
- ✓ Use of difficult ward unimpressive to the readers/supervisor

What is research?

- **research.** 1.a. the systematic investigation into and study of materials, sources, etc, in order to establish facts and reach new conclusions. b. an endeavour to discover new or collate old facts etc by the scientific study of a subject or by a course of critical investigation. [Oxford Concise Dictionary]

What is research?

- Research is what we do when we have a question or a problem we want to resolve
- We may already think we know the answer to our question already
- We may think the answer is obvious, common sense even
- But until we have subjected our problem to rigorous scientific scrutiny, our 'knowledge' remains little more than guesswork or at best, intuition.

What is research?

- First priority is to formulate your question
- Then figure out how you are going to answer it
  - How have others answered it?
  - How does your proposal fit in with what others have done?
  - How will you know when you have answered it?
- Then you can present your answer

Classical scientific method

- Observation of some phenomenon
  - Maybe systematic, occasional or accidental
- Some idea of an explanation (hypothesis)
  - Induction, conjecture, intuition, guesswork
  - Usually informed by related work
- Testing of the hypothesis
  - Test and revision cycle

Hypothesis

- Probability of research
  - Nothing is certain
  - *The exception that "proves" the rule*
  - Scientific "truth" is actually usually a statement of what is most probable given the currently known data ...
  - ... within the given framework
- Statistical techniques try to help us show extent to which our results really do support the hypothesis

Hypothesis

- A hypothesis makes a prediction of the expected outcome in a given situation
- Usually: how the manipulation of the **independent variable** will influence the behaviour of a **dependent variable**
- The hypothesis is tested in an **experiment**
- Experimental design ensures that what you are doing is genuinely (and solely) responsible for the results
- **Extraneous variables** have to be **controlled**

Experiment

- If the experiment works, the hypothesis is shown to be probably correct
  - Can’t prove 100% truth
- If it fails, it could be because
  - The hypothesis is wrong
  - The experimental design is faulty

Null hypothesis

- Experiments are generally set up to demonstrate or support (rarely “prove” , note) a hypothesis
- The **null hypothesis** H_0 is that any observed changes in behaviour are due to chance
- The **alternate hypothesis** H_1 is the hypothesis you are trying to demonstrate
- Usually, the best you can do is refute H_0 thus showing that H_1 is probably correct (with a measruable degree of likelihood: **statistical significance**)

Where do hypotheses come from?

- Not usually thin air
- From within a **framework**
  - Some phenomenon is not well explained by current thinking
  - “New” hypothesis is often just an adaptation of an existing hypothesis
- thesis ~ antithesis ~ synthesis

thesis ~ antithesis ~ synthesis

- Thesis
  - the original statement of an idea
- Antithesis
  - an argument to challenge a previous thesis
  - often draws on new data
- Synthesis
  - a new argument from existing sources
  - typically, resolves the *apparent* contradiction between a thesis and an antithesis

Testability

- A good hypothesis is testable
  - Not provable, in the sense of “shown to be true” (true = certain)
  - Refutation of a thesis by proving that it is false is a cornerstone of modern science
  - Simply refuting a hypothesis is OK but better science will **explain** why hypothesis is wrong, and (better still) **offer an alternative** hypothesis

By the way, have you ever wondered why we do experiments at school, the result of which is known beforehand?

One-/two-tailed hypotheses

- Our experimental design may make either
  - a strong prediction about the behaviour we expect to observe:
    - our manipulation of the independent variable will cause a **specific change** in the dependent variable
  - a prediction about a range of behaviours we expect to observe, typically perhaps two
- One-tailed hypothesis: statistical significance means expected result was found
- Two-tailed hypothesis: only need to show that the different results are statistically significant

Variables

- The experiment measures the “behaviour” of the dependent variable
- DV must be **operationalised**
  - Some aspect of the DV must be measurable
  - What to measure?
  - How to measure it?
    - Are you really measuring what you think you are measuring?

Quantitative vs qualitative

- Quantitative research
  - systematically observe changes in the phenomena of interest while manipulating what are believed to be causal influences
- Qualitative research
  - may be more concerned with the individual's personal experiences of the problem under study

“Proof” by demonstration

- Intuitive alternative to the classical scientific method:
  - Build something specific and then claim that it can be seen as an example of a more general class of solutions
- High risk
  - difficult to demonstrate generalisability
  - in fact doing so entails making an *a posteriori* hypothesis
  - What can you say if it goes wrong ?
- So you still need a theoretical basis

Planning

- Statement of the problem
- Literature review
- Choice of research method
- Design of study
- Data collection
- Analysis of data
- Write-up

- http://www.chssc.salford.ac.uk/healthSci/rem99/resmeth/planning.htm

Writing an Effective

Research Proposal

By

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Preliminary Remarks

- **Status of Current Research**
  - **Quantity**
  - **Quality**
- **Reasons – Research Skills**
  - **Language**
  - **Analytical Skills**
    - **Philosophy**
    - **Logic**
  - **Statistics**
  - **Communication skills**
- **Research Teams**
- **Research Support Lab**

Familiarity with Statistics

Basic Rules

1. Always consult a qualified statistician – Very early

2. Know enough about statistics to be able to view the advice critically

3. Understand the process of analysis

Essential Characteristic of a Researcher

Some Basic Ideas

Question

Doubt

Confidence

Four Questions

- **What data / evidence do I need?**
- **What will be the source of that data / evidence?**
- **How will I collect that data / evidence?**
- **How will I analyze that data / evidence?**

Terms Used

Proposal

Synopsis

Prospectus

Research Proposal – Main Elements

- An outline of the research problem
- A statement of the significance of the problem
- A review of related studies
- A discussion of the procedures
- Methods for data collection and analysis
- A note about the study's limitations

Components of a Research Proposal

- **Title of the proposal**
- **Background of the problem**
- **Statement of the problem**
- **Research objectives, questions, hypotheses**
- **Significance of the study**
- **Review of related literature**
- **Definition of terms**
- **Delimitations and limitations**
- **Research methods and procedures**
- **Expected results**
- **Preliminary working bibliography**

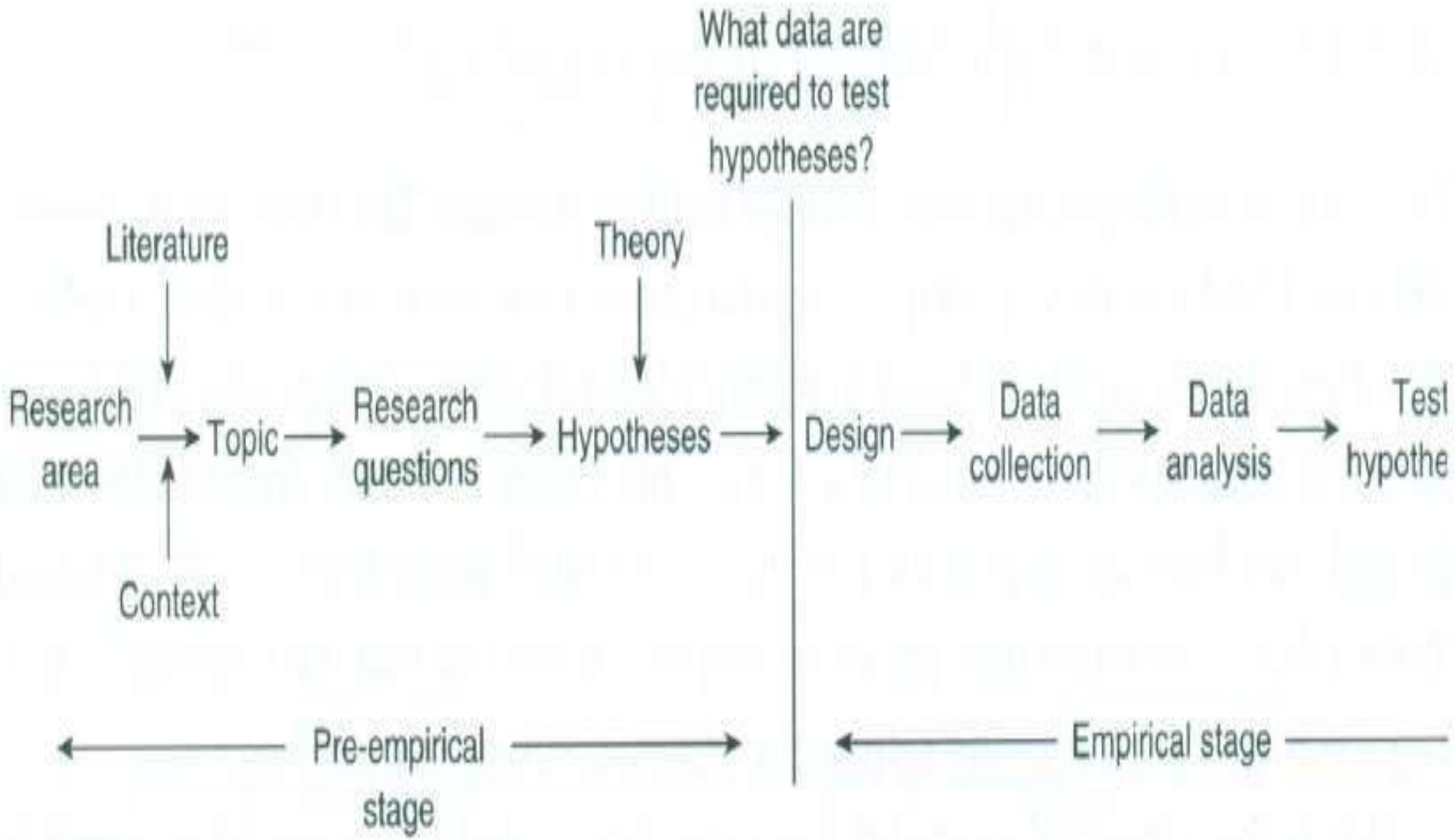

Figure 3.1 *Simplified model of research (with hypotheses)*

Punch, K. F. (2007). *Developing Effective Research Proposals* (2 ed.). Los Angeles, CA: SAGE Publications.

Writing an introduction or background

The **deficiencies model** of an ‘introduction’ is a general template for writing a good introduction that consists of five parts.

- **The research Problem**
- **Studies that have addressed the problem**
- **Deficiencies in the studies**
- **The significance of the study for particular audiences**
- **The purpose statement**

Potential Sources of Research Problems - 1

- Scanning and reading published and unpublished research
- Disagreeing with some previous research and developing a new study to test its findings
- Gaps in explanations or in accepted principles
- Questioning the validity of a generally accepted procedure
- Replication – Redoing the same thing with an expectation of the same result

Potential Sources of Research Problems - 2

- Designing and developing of new research tools and techniques
- Developing new models
- Studying areas where knowledge or information is scarce, out-of-date, or indefinite
- Attempting to deal with actual problems
- Networking or sharing ideas and information with colleagues
- Interdisciplinary research – Cross fertilization

  (Economics of information, Bibliotherapy, etc.)

Functions of the Statement of the Problem

- **Establishes the existence of a unique problem**
- **Relates the problem to its general antecedents**
- **Suggests the benefits to be derived from the study**
- **Justifies the utility, significance, or interest inherent in the pursuit of the problems**

Attributes Associated with the Statement of the Problem – Top Nine

- **Clarity and precision/**accurate
- **Identification of what to study**
- **Identification of an overarching question**
- **Definition of key concepts / terms**
- **Articulation/** clarity **of study's boundaries / parameters**
- **Some generalizability**
- **Conveyance/** the action or process **of study's importance, benefits, and justification**
- **No use of unnecessary jargon**
- **Conveyance of more than descriptive data providing a "snapshot"**

(Study four related articles)

Components of the Problem Statement

Any problem statement should contain four elements:

- **A lead-in [narrative hook]**
- **Declaration of originality (mentioning a knowledge void which would be supported by the literature review**
- **Indication of the central focus of the study (purpose statement); and**
- **Explanation of study significance or benefits to be derived from an investigation of the problem (Rationale or justification of the study)**

Writing a Purpose statement - Guidelines

- Begin with signaling words such as "the purpose or intent of"
- Indicate the overall intent of the study such as "the intent is to examine the role of school teacher in promoting reading habit"
- Indicate the research design and strategy such as survey, experiment, etc.
- Identify the independent and / or dependent variables
- Use words that connect the variables such as "the relationship between" or "the comparison of" two or more variables
- Position or order the variables from left to right in purpose statement with independent variable followed by the dependent variable
- Make reference to the participant (unit of analysis) and mention the research site

The purpose of this _____ (experiment? survey?) study is (was? will be?) to test the theory of _____ that _____ (compares? relates?) the _____ (independent variable) to _____ (dependent variable), controlling for _____ (control variables) for _____ (participants) at _____ (the research site). The independent variable(s) _____ will be defined as _____ (provide a definition). The dependent variable(s) will be defined as _____ (provide a definition), and the control and intervening variable(s), _____, (identify the control and intervening variables) will be defined as _____ (provide a definition).

Research Objectives, Questions, Hypotheses

- Emerge from the Statement of the Problem
- How the research problem is to be prepared to be approached methodologically
- A precise and formal statement
- Wording of considerable importance

Significance of the Study

- **Why this study is significant?**
- **Why do it now?**
- **What will it contribute to the existing research literature?**
- **What implications your findings may have?**
- **Who will benefit from it?**

[Scholarly acceptability]

Review of Related Literature – Important Information

- **Information concerning theory – findings**
- **Information concerning methods**
- **Information concerning data analysis**
- **Strengths and weaknesses**

[Research summary note for each study]

Purposes of Literature Review - 1

- **Familiarity with the field of inquiry**
- **Provides a context for the proposed study**
- **Generation of research questions or hypotheses for further studies**
- **Knowledge of the methodologies common to the field**

Purposes of Literature Review - 2

- Can reveal sources of data that you may not have known existed
- Demonstrates why it is important and timely
- To avoid or solve problems others have encountered in their research (Limitations)
- Increase your confidence in your topic because others have invested considerable time, effort, and resources in studying it

Steps in Conducting Literature Review - 1

1. Identify a research topic
2. Identify keywords/descriptors that are useful in locating relevant information material
3. Develop an overall search strategy for the literature review
4. Search preliminary sources
5. Select relevant primary and secondary sources
6. Search the library for identified primary and secondary sources
7. Establish a computer and paper trail including research summaries in your own words that will be used in the literature review

Steps in Conducting Literature Review - 2

8. Repeat step 4–7 as needed to refine search
9. Develop themes/concepts that synthesize the literature
10. Relate the themes/concepts to one another through an outline of the literature review, or a literature map
11. Produce a final literature review that structures or organizes the literature thematically or by important concepts
12. Use the literature review to develop or refine the research objectives, questions, and hypothesis

Definition of Terms

- **Variety and location**
- **Operational definition of all the major concepts to be employed in the study**
- **Should cover all the essential terms in the Statement of the Problem and the Research Objectives, Questions, Hypotheses**
- **These definitions will establish the basis for the objective tests for the outcomes of the proposed study**

Delimitations and Limitations

- **Establish the boundaries, exceptions, qualifications, and reservations**
- **Delimitations - Before**
  - **How the study will be narrowed in scope**
  - **Controlled by the researcher**
- **Limitations – Before and After**
  - **Factors that will affect the study**
  - **Not controlled by the researcher**
- **Should appear when imposed by the nature of the problem**

Research Methods and Procedures – Main Decisions

- **Method**
- **Population / Sample to be studied**
- **Instrumentation**
- **Data collection procedures**
- **Data analysis**

Selecting the Research Design

- **True experimental design**
- **Quasi-experimental design**
- **Non-experimental design**
- **Historical design**

Preliminary Working Bibliography

- **Materials cited in the proposal**
- **Quality, not quantity**
- **Full bibliographical details**
- **Style of citation**

Further Readings

1. Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles, CA: SAGE, p. 97–127.
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