

UNIT IV

The Research Proposal

The Research Proposal

- a written offer to solve a problem in a scientific way under a specified plan of management, using a certain amount of money.
- a formal plan of solving a scientific problem.

The research proposal has the following basic and technical information requisites:

Basic Information:

- Research Title (Distinguishing the program from the project and study)
- Proponent(s) – a person or a group of people offering the research
- Research institution or unit and cooperators, if any
- Duration of study (Starting Date and Completion Date)
- Major activities to be performed and duration
- Technical Personnel Requirements
- Budget
 - Personnel Services: Salaries, Honoraria, Insurance
 - Maintenance and Operating Expenses (MOE):
 - repair / maintenance supplies
 - travel: destination, purpose, mode of transportation, costs
 - Equipment and Materials
 - Miscellaneous

Technical Information:

- Importance/ Significance and Nature of the Study: the rationale behind the research work, status of the current problems/ needs of the country or economy to which the research work is addressed, the corresponding benefits that can be derived from the research results, the framework for the analysis of the problem.
- Review of Literature: a brief discussion of pertinent information, with emphasis on recent findings and knowledge, relevant to the research work being proposed.
- Objective(s): expected results from the proposed work.
- Methodology: description of the procedural steps/tasks to be undertaken; data/information to be gathered and their sources; the research techniques to be used, research design, instruments, sampling procedures, and methods of analysis.

- Bibliography: a listing of the relevant publications and documents used as general references in the preparation of the proposal (and those cited in the paper -- References, and Literature Cited.)
- Format: as prescribed by the research institution/unit to which the proposal is submitted for evaluation /funding.

ADDITIONAL INFORMATION ON THE DIFFERENT PARTS

I. TITLE

Function: Gives a name to and identifies the research being proposed, reported, or written about in the manuscript.

Content: Words and phrases that are directly related to and covered in the concepts presented by the text of the manuscript.

Treatment Guides/Examples

Treatment: The title should be optimal, neither too long nor too short, too general nor too specific.

Examples for Discussion:

Gibberellic Acid and Rice

Effects of Gibberellic Acid on Rice

The Effects of Gibberellic Acid on Stem Length, Leaf
Sheath Length, Leaf Blade Length, and Panicle Length of
Oryza sativa var. *indica*

The Effects of Gibberellic Acid on Some Agronomic Characters of
Oryza sativa var. *indica*

- A two-part title separated by a colon (:) is sometimes more convenient.

Example:

Do not say:

The Modification and Evaluation
of the Thailand-designed Manually Operated
Peanut Shellers

But instead:

Thai-designed Manually Operated Peanut Shellers:
Their Modification and Evaluation

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- Avoid ambiguous, general, and overused phrases.

- Avoid these phrases and others like them:

- A Research Proposal to...
- A Scientific Report About...
- An Investigation Into the...
- The General Analysis of...
- A Detailed Study of...
- A Comprehensive Discussion for...

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- However, specific research methods may be mentioned in the title.

Examples:

A Case Study: The Ideal Puto Seco factory

The Ideal Puto Seco Factory: A Case Study

A Survey of Jobs Held by UPLB BS Math Graduates

The Effects of Long Storage on the Germination of *bangkal seeds*

Isolation and Identification of Antibiotic-producing
Bacillus spp. Found in Soil

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- Be forward and straight to the point. Do not install a sense of vagueness in the title.

Example 1:

Vague:

A Method for Measuring Porosity Coefficients

More definite:

Measurement of Porosity Coefficient by the Shallow-bore Method

Vague:

A System for Improving Computer Reliability

More definite

Preventive Maintenance:
An Aid to Computer Reliability

II. INTRODUCTION

A. Significance/Importance of the Study/Work

- Function: It represents an understandable view of the research problem.
- Content: It should contain and clearly state the following concepts:
 1. The research problem – specific problem.
 2. Subject of the study – the general area to which the research problem belongs.
 3. Background – general pertinent information, including principles, theories, processes, and concepts concerning the research problem (usually an observed one). This information should place the problem in its proper perspective.
 4. Justification – what the research hopes to achieve or what it has achieved as motive(s) for conducting the study.
 5. Scope – the extent to which the problem will be/was worked on
 6. Importance/significance – how the research results will be used; values that may be/were obtained from the research; contributions (practical or otherwise) that the research may have.
- Treatment: The basic principles of expository composition are applied. Expository techniques such as the following are used: comparison and contrast, classification, analogy, analyzing cause and effect, definition, description, listing, illustration, narration, and exemplification.

Appropriate orders of presentation such as logical, chronological, topical, cause-and-effect, and others are used.

Proper tense and voice should be observed.

The problem should be presented explicitly in the proposal or the report.

Example 1:

This proposed study will explore the prospect of controlling *Erwinia carotovora* var. *chrysantemi*, the casual organism of the bacterial stalk rot of corn, using antibiotic *Streptomices* species.

Example 2:

This study was conducted to determine the frequency of A-B-O blood groups among Filipinos in different barangays of Los Baños, Laguna to establish a possible correlation between the different blood groups and some genetic disorders.

- Problems: Ambiguities and unexplained generalities

B. Review of Available Related Literature

- Function: It presents the general status of research done in the discipline of the research problem.

Formation in paragraphs of the text or body, with a corresponding list of reference information as a bibliography, as footnotes or as endnotes.

A general statement at the beginning of this section on the status of research literature can serve as a *summative introduction*.

Example 1:

Very limited literature is available on the radial pattern of variation due to the tedious and time-consuming nature of the measurements involved and the difficult problem of sampling.

Example 2:

Several studies have been conducted concerning the consumption patterns for fruits and vegetables.

Example 3:

Several studies have been conducted on the possible effects of certain cultural practices on the yield and fruit quality of some members of the citrus family.

Presentation of a “void” in knowledge on an area (that is, the identified research problem) may be an effective ending – this serves as a *summative conclusion*.

Example 1:

The preceding review presents meaningful information on the effects of cultural practices on the yield and fruit quality of oranges. As similar studies on calamansi have not been done yet, the results of this study may provide additional information on the subject.

Example 2:

The preceding review shows inadequate knowledge on the cultural practices in citrus. This study on the possible effects of some cultural practices on the yield and fruit quality of calamansi is, therefore, timely and relevant.

Any of the following referencing systems may be used:

1. Closed system (Harvard system, variation 1)

Example:

...There was a marked difference in the subject matter areas needed by home management technicians of the Agricultural Productivity Commission for their in-service training (Ho 1969) ...

2. Semi-open system (Harvard system, variation 2).

Example:

...Ho (1969) found a marked difference in the subject matter areas needed by home management technicians...

3. Open system (Harvard system, variation 3).

Example:

...In 1969, Ho found a marked difference in the subject matter areas needed by home management technicians...

4. Footnote system – The researched information is presented and the reference or bibliographic information, correspondingly numbered, is found at the bottom of the *same page*.

Example:

...Assuming communication effectiveness, or relatively noise-free transmission, messages of either type contain information that redistributes values between the source and recipient²⁰...

²⁰ Merritt, R. L. 1972. Transmission of Values Across National Boundaries. In Merritt, R. L. (Ed.). 1972. *Communication in International Politics*. Urbana, IL.: University of Chicago Press.

5. Endnote system – similar to footnoting, except that the notes are placed together in a section at the end of the proposal or report. This section thus also serves as the Bibliography or Reference List.

Example:

...Assuming communication effectiveness, or relatively noise-free transmission, messages of either type contain information that redistributes values between the source and recipient²⁰...

- END -

BIBLIOGRAPHY

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¹⁹ Mendelsohn, H., and Irving Orespi. 1970. etc...
²⁰ Merritt, R. L. 1972. Transmission of Values Across National Boundaries. In Merritt, R. L. (Ed.). 1972. *Communication in International Politics*. Urbana, IL.: University of Chicago Press.
²¹ Nimmo, Dan. 1970. *The Political* etc...
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6. Number system.

Example 1:

...Ho (2) found a marked difference in the subject matter needed by ho management technicians...

Example 2:

“...calcium, potassium, and magnesium also altered membrane permeability (1, 2, 7).”

- It is possible to have more than one reference for literary information presented in the text.

Example:

...Some authors, for example Berstein and Sharpe (1966) and Crook (1971), virtually equated roles with role profiles...

OR

...Some authors (Berstein and Sharpe 1966, Crook 1971) virtually equated roles with role profiles...

- It is possible to combine different systems.

Example:

“Carlson² in 1965 and Tobey³ in 1967 introduced two parameters in order to obtain a hypergeometric mean function” (as cited in Limpiada 1987).

- The open, semi-open and closed systems (the three variations of the Harvard system) are the most often used referencing systems.

Referral data (the author's family name and year of publication) can be placed conveniently in different parts of the sentence. These are in **bold type** only to highlight them in the following examples. Otherwise, they are written in standard type.

Example 1:

...This is not only because of the simplicity of the determination involved (**Mitchell 1958**) but also because specific gravity has proved to be the most useful index to the suitability of wood for many important uses...

Example 2:

The majority of forest tree populations is composed of numerous heterozygous genotypes (**Mergen 1962**). Many of these...

Example 3:

In the absence of heritability studies for Philippine species, **Zabala (1978)** developed a grading system for both hardwoods and softwoods...

Example 4:

In the absence of heritability studies for Philippine species, a grading system for both hardwoods and softwoods was developed by **Zabala (1978)**.

Example 5:

In the absence of heritability studies for Philippine species, **Zabala, in 1978**, developed a grading system for both hardwoods and softwoods.

Example 6:

In the absence of heritability studies for Philippine species, a grading system for both hardwoods and softwoods was developed by **Zabala in 1978**.

Example 7:

In the absence of heritability studies for Philippine species, **Zabala²** developed a grading system for both hardwoods and softwoods.

Example 8:

In the absence of heritability studies for Philippine species, a grading system for both hardwoods and softwoods was developed by **Zabala²**.

- Transitional devices and aids must be used to achieve coherence.
- Use the present tense in citing a general finding, the past tense in citing a specific finding.

Example 1: Present Tense for General Finding

...Feliciano (1965) noted that in the rural areas credibility is generally associated with old age...

Example 2: Past Tense for a Specific Finding

In 1965, de la Cruz found that the personal source was the most credible among the various sources of information in a Laguna barrio...

- Scholarly note-taking from different sources should be evident. Summarizing, paraphrasing, and lifting direct quotations are some techniques that can be very helpful here.
- The review of literature can be presented in several sections and subsections, using subtitles.
- The topical order of presentation is usually followed.
- Since citations can be inserted almost anywhere in the text of a research proposal or report, they must be section-specific, or in other words they have to suit the functions of each section. The example given below serves well in the introductory parts, but will be inadequate in the review of literature, and more so is unsuitable in the materials and method section.

Example: Citation in an Introduction:

...The biochemical bases of resistance to Java black rot in sweet potato root have been recently elucidated (Dalisay et al., 1986; to be discussed later in the Review of Literature section).

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- Problems: The following constraints may be encountered when composing the review of literature:
 1. Conflicting data/information.
 2. Multiple authors.
 3. Incomplete bibliographical data.
 4. Two or more works by the same author published in the same year.
 5. Similar family names of different authors, whether or not their works came out in the same year.
 6. Secondary, tertiary, or (very rarely) quadruple levels of citations – information that has been twice, thrice, or even four times removed from original or immediate sources – as distinguished from primary, or firsthand, citations which immediately allude to their root sources.

Example 1: Primary or first-hand citation

In the Philippines, bagras is one of the promising species for the production of pulp-and-saw timber. It was also found to be a good source of charcoal (Tomboc 1977). Furthermore...

Example 2: Secondary or twice-removed citation

...Umezawa in 1965 came up with a clearer definition: “Antibiotics are chemical substances that are produced in commercial quantities (as cited in Waksman and Lechevalier 1962).”

7. Citing a direct quotation.
8. Repeated reference to a single work or source.

9. Research findings and/or information grouped together because of similarity.
10. Meaningful incorporation of references into the text.

C. Objectives

Function: It gives direction to the research.

Content: General and specific statements about what the research is expected to find out, discover, accomplish, and/or achieve.

Treatment: For these statements, the following are usually observed –

1. If there is more than one objective, they appear as a number list.
2. Verbs used are in infinitive form.
3. They are presented neutrally.
4. They are classified as either general or specific.
5. They should be within the scope of the research problem.
6. There should be only one topic for every stated objective.
7. Presentation of objectives should be logically clear if an objective is dependent on another.

The following examples are for class discussion:

Example 1:

1. To determine the factors contributing to the survival of community newspapers in the Southern Tagalog area, and

2. To determine the factors contributing to the discontinuance of community newspapers in the Southern Tagalog area.

Example 2:

1. To find out if hagonoy is toxic, and
2. If it is, to determine the level at which it is tolerable to cattle.

Example 3:

1. To study the physical set-up of the public markets and to help administration improve the existing ones.
2. To recommend better arrangement of each section so as to avoid jampacking,
3. To help administration provide sanitary market facilities, and
4. To find out if there is any market association that helps in the operation and organization of the markets.

D. Date and Place of Study

- Function: Summarizes the planned/actual dates of start and end, as well as the sites or locations of the research.
- Content: States the planned/actual dates of start and end and the place where the study will be/was done.
- Treatment: Usually, this is stated as one sentence.

Example 1:

...This study will be conducted from June to September, 1993, at the Institute of Chemistry, College of Arts and Sciences, UPLB.

Example 2:

This survey was conducted from June to August, 1987 in Guinobatan, Albay. Data analysis followed from September to December, 1987 at the Department of Agribusiness, College of Economics and Management, UPLB.

III. METHODOLOGY: MATERIALS AND METHODS/PROCEDURES

- Functions: Presents the materials and the steps of the research procedure. The appropriateness of these should be made evident in this section.

- **Content:** Materials may be listed or presented in paragraph form, depending on which is convenient. These would possibly include chemical reagents, specimens, laboratory and office supplies, etc.

Equipment and apparatus may be mentioned, more so if these are special and/or specific.

The research method and its step-by-step implementation must be described. This should include the experiment or survey design involved.

Statistical analysis should be mentioned here if any is involved. This would include populations and sample size, sampling techniques, data-gathering techniques and statistical tests. In the case of surveys, descriptions of intended respondents are included. For research proposals, the survey instrument--be it a questionnaire or interview schedule--is usually attached at the last portion of the manuscript as an appendix.

For research proposals, a timetable or schedule of the activities should be included.

For research reports, problems encountered and any changes made in the original research plan should be mentioned here.

- **Treatment:** Materials and methods may be presented in numbered list form (commonly done in research proposals), paragraph form (commonly done in research reports), or a combination of both.

In research proposals, indicative mood, passive voice, and future tense is used.

In research reports, indicative mood, passive voice, and past tense is used.

Smaller subordinates processes, however, need not be described.

Example:

“The length of the estrous cycle during the pretreatment and treatment periods will be observed following the vaginal smear techniques of Long and Evans (1922).”

The repeatability of the methods and/or experimental designs should be considered. Other researchers should be able to repeat the research designs and methods if necessary.

IV. RESULTS AND DISCUSSION

This section corresponds to the data analysis and interpretation stages of the research process.

- **Functions:** Presents data in an organized manner.
Derives and discusses generalizations from the data.
Establishes highest and lowest data values (the data range) if there are any, as well as other values of special interest.
Links findings established by the research with one another as well as to previous findings.
Offers explanations for expected as well as for unexpected results.
- **Content:** Tabulated data in their final form, unless these are designated as appendices at the end of the paper.
Graphs and illustrations relevant to the discussions presented.
Discussions and explanations about the data to explain relationships among them and findings because of them (trends, patterns, quantitative and/or qualitative information, causes and effects, errors, etc.)
- **Treatment:** This may be presented as one section or divided into two, one for results and one for discussion.
Tables, graphs, charts, illustrations and sometimes photographs, as well as text in paragraph form are used to present the content of this section.
Statements should be supportive of each other.
In the sentences of the discussion, use phrases like "...may be due to..." and "...seem to..." which hint of probability rather the definiteness.
Expository techniques should also be relied on.

Example 1:

...Phytoalexins were extracted from leaves of two resistant and one susceptible variety (*sic*) of peanut inoculated with *Cercospora arachidicola*...

Example 2:

...A comparison of ligninase production between shakeflask and stationary cultures of *P. chrysosporium* was made in order to determine if the

particular strain of fungus to be used is capable of producing the enzyme in both cultures...

Example 3:

...In order to provide a tool in conducting randomization and constructing layouts for researchers, a statistical package was created to perform such a task...

Example 4:

...Basic problems were encountered regarding the determination of nitrogen absorption of foliar applied urea. First was the elimination of N-analysis of the water wash from the leaf samples at the end of each sampling...

V. SUMMARY AND CONCLUSION(S)

- Functions: The Summary presents the highlights of the research in précis form.
The Conclusion(s) states which of the objectives were attained or not, as well as the hypotheses that were accepted or rejected.
- Contents: A capsulized overview of the entire research.
Concluding statements.
- Treatment: Both summary and conclusion(s) are usually contained in one section.
Present and past tenses are usually employed.
Length involves only several paragraphs.

Example 1:

...It was found out that of the 29 phenotypic traits only 11 were significant or relevant in the clustering procedures in pine plantations using discriminant analysis...

Example 2:

...Results showed that the number of bands increased by two to five after inoculation...

Example 3:

The integral approach in proving the properties of transcendental functions is therefore an alternative to the traditional methods of proofs. Moreover,

this can support the notion that these functions together with their properties are already established and...

Example 4:

...From the results, it can be concluded that in batch anaerobic fermentation of coconut skimmilk, VFA production could be optimized by pH 6.0 to 6.5, 1:1 dilution and retention time of 24 hours...

Example 5:

...Based on this study, however, no conclusive statements can be made on the optimum age for alkaloid production because the plants had powdery mildew in the later stage of growth.

VI. IMPLICATIONS

- **Functions:** Relates the research and its results to the current status of similar activities in its discipline.
Identifies new problems encountered (if there were any) and gives possible solutions to these problems.
Recommends possible areas for future research endeavors, thereby maintaining the continuity of the research process.
- **Content:** A short status update relating the research to its discipline.
New problems encountered, if any.
Suggestions for further research(s).
- **Treatment:** Expository techniques and present and past tenses should be employed.
New problems encountered and/or research suggestions may be presented in paragraph list formats, or a combination of both.

Example 1:

...Knowledge on phytoalexin could facilitate breeding work in the development of peanut varieties resistant to *Cercospora* leaf spot...

Example 2:

...The results of the investigation conducted on veneer drying of Moluccan sau impose criteria constraints. Although drying temperature of 143⁰C was found seemingly optimum for the veneer thickness used in this study, the wide variations in initial moisture content will present problems in commercial utilization of the species particularly in plywood making. The undesirable variation of green moisture content, either inherent or process-caused should be corrected...

Example 3:

...This study found, however, that community newspapers also had a limited reach. In the Southern Tagalog region, it was found that community newspapers existed and survived in urban communities which were the centers of socio-political and economic activities in the provinces where they were located. This signifies that the characteristics of urban areas (e.g., high literacy, high per capita income, the presence of mass media which motivate further use of the same), influenced the existence of a community newspaper. It may be inferred then that since these features are non-existent in rural areas, the prospect is dim for a community newspaper to thrive there.

Example 4:

...This study can be extended to other functions like the elliptic functions and their...

Example 5:

...Hereditability (*sic*) studies on some important characteristics should also be conducted in the future to assess the degree of hereditability (*sic*) of the specific traits significant in tree selection...

VII. LITERATURE CITED/REFERENCES/BIBLIOGRAPHY

Literature Cited – Heading used if citations are found solely in the review of literature.

References – Heading used if citations are found in other parts of the research proposal or report, as well as those found in the review of literature.

Bibliography – Heading used if other references aside from those used are included in this section. Some research reports and scientific papers, for example, include suggestions for further reading in this section.