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A PRACTICAL GUIDE IN WRITING RESEARCH FOR STUDENTS

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Preface

Research is the primary means of expanding our understanding of the world. It allows us to explore new ideas, test hypotheses, and discover new facts and principles. By conducting research, we can build upon existing knowledge and contribute to the development of various disciplines.

In addition, research is instrumental in finding solutions to complex problems and challenges. Through systematic investigation and analysis, researchers can propose innovative ideas, technologies, and approaches that can lead to improvements in various aspects of human life, such as healthcare, technology, the environment, and more.

However, many students find research writing to be challenging. Students' struggles are understandable because research is a demanding process that calls for an in-depth understanding of the subject under consideration, meticulous planning, designing, strategizing, and a lot of effort. Additionally, sufficient time and attention are needed for successful study conduct.

This book will present a simplified guide to writing research that will help students in developing their proposals and in gathering, analyzing, and interpreting their data. The terminologies used are simple so that students will have a good grasp of the concepts and acquire research writing skills.

It is my sincere wish that this book would make research for students much simpler and less difficult for them to complete. In addition, I hope that by publishing this book, more professionals and students would be interested in conducting research.

Alma

Chapter 1

Nature and Significance of Research

A fundamental force for progress or change in any area is research. The advantages of research can be observed not only in the output or in observable results but also in the development of values that shape the researcher's character over the course of his research. As one investigates the surroundings and day-to-day affairs and reflects on the issues that plague man and his drive for progress, conducting research helps one develop reflective and critical thinking skills.

Nature of Research

1. Research is a problem-solving activity using scientific tools. A problem exists and you conduct research because you want to give a solution to the problem.
2. Research is the production of new knowledge and/or the application of existing knowledge in a novel or creative manner and results in the development of new approaches, and understanding (Western Sydney University, 2020).
3. Research is a structured and methodical approach that aims to answer specific questions, test hypotheses, or gain a deeper understanding of a particular topic. Its main objectives are to generate new knowledge, validate existing theories, or develop practical applications.
4. Research finds solutions to some pressing concerns because of collecting and analyzing data. These solutions add to our growing body of knowledge.
5. The main goal of research is to advance knowledge by creating new scientific theories, concepts, and ideas to benefit society.

The nature of research is critical for advancing human understanding, solving problems, and fostering progress in various domains of knowledge. It is a fundamental process that underpins advancements in science, technology, medicine, social sciences, and many other fields.

Significance of Research

Research is the primary means by which we expand our understanding of the world, from fundamental principles in science and mathematics to the complexities of human behavior and society. It helps us build on existing knowledge and explore new frontiers.

Additionally, research provides evidence-based solutions to various challenges and problems facing society. Whether it's finding cures for diseases, addressing environmental issues, or devising strategies for economic development, research is at the core of finding effective solutions.

Moreover, Policymakers rely on research findings to make informed decisions that have a significant impact on the well-being of citizens. Research provides data and evidence that can guide policies, laws, and regulations.

Most importantly, conducting research is an educational experience that fosters critical thinking, problem-solving skills, and intellectual curiosity. It encourages individuals to question assumptions and explore new ideas.

The benefits of engaging in research by the University of San Diego (2020).

1. It fosters Critical and analytical thinking skills through hands-on learning.
2. It defines academic, career, and personal interests.
3. It expands knowledge and understanding of a chosen field outside the classroom.
4. It develops one-on-one connections with distinguished faculty in their field.
5. It builds community with peers, faculty, and organizations on-and off-campus.

Chapter 2

The Research Process

There is a general process that serves as a helpful guide for a researcher in any field of study. You will learn about the research process in this chapter, and you can use what you learn to write your research proposal, collect data, analyze, and interpret data to come up with problem solutions.

What is a Process?

A process is a sequence of steps that proceed toward a goal and are dependent on one another. The execution of a process must progress in a sequential manner. In conducting research, you must follow a process.

What are the steps of the Research Process?

1. Problem Identification or Objectives

The first step in conducting research always involves identifying a problem or stating your objectives. Remember that conducting research is motivated by a problem that is existing and a solution is not available, or the solution is available but something in your mind is more effective, less costly, and less complicated. However, you need to test it through research.

2. Reviewing the Literature

Why is it important to read related literature and studies before raising the specific questions that you need to answer to arrive at valid conclusions? One of the reasons is for you to acquire a wealth of information about your study. You can use the information to provide context or background for your study. Another is to identify gaps in existing research – what is still unknown or unresolved about your study. In addition, a literature review enables you to design your research.

Moreover, the literature review will show you how your study is similar and different from the previous studies you have read. Be careful not to duplicate previous studies. Remember the guideline that research is conducted so that you will contribute new knowledge or a new way of doing things because old ways may no longer be effective.

Literature review provides the foundation of the topic; identifies areas of prior scholarship to prevent duplication and gives credit to other researchers;

identifies inconsistencies, gaps in research, conflicts in previous studies, and open questions left from another research; identifies the need for additional research (which now justifies your own study); identifies the relationship of works in context of its contribution to the topic and to other works; and places your own research within the context of existing literature making a case for why the study is needed.

3. Developing the Specific Research Questions or Objectives

The next step after the literature review is developing the specific research questions based on the main problem or stating the objectives. Some students are confused about whether to write research problems or state the research objectives. If you already have the research questions, there is no need for you to state the objectives or vice versa. The next chapter will guide you on how to formulate specific research questions.

4. Stating the hypothesis

A hypothesis is a tentative explanation or proposition that you can test and evaluate to determine if it is true or false. In the scientific method, a hypothesis is an essential part of the process of conducting experimental research. It serves as a starting point for investigation and provides a clear statement of what the researcher expects to happen in the study. Not all research problems have explicit hypotheses. Exploratory studies do not require hypotheses. It is formulated as a declarative statement that predicts the relationship between two or more variables. For example, "If X is done, then Y will happen." The researcher then gathers data through experimentation or observation to determine if the results support or refute the hypothesis.

5. Designing the Study

A research design is a plan for a scientific investigation. It contains the methods, tools, and procedures used to conduct the research. It aids in identifying and solving potential issues that may come up while conducting research and analysis. The types of research design will be discussed in Chapter 5.

6. Data Gathering

Regardless of the kind of study being done, data collection is the first and most crucial phase in the research process. It involves gathering data on a certain topic and measuring, evaluating, and using that data to draw conclusions and recommendations.

7. Processing and Analyzing Data

Applying statistical and/or logical methods in a systematic way to explain and show, summarize, assess, and evaluate data is known as data analysis. While data gathering is the most challenging part of conducting research, analyzing what you gathered is the most crucial step since data analysis and interpretation are the bases of your conclusions and recommendations.

8. Drawing Conclusions

A conclusion, which comes at the end of a research report, offers a clear explanation of the findings and highlights the importance of the study. The conclusions state whether the experiment or survey findings confirm or refute the initial hypothesis.

9. Giving Recommendations

Research recommendations are ideas or answers to specific issues based on your findings. Recommendations are specific actions that can be taken based on the findings and conclusions.

The goal of the research process is to make sure that all required measures are taken to acquire the most accurate, trustworthy, and beneficial information. The research procedure aids in focusing the study and guarantees that all pertinent areas are covered.

Chapter 3

The Research Problem

A research problem is a claim about an area of interest, an issue that needs to be resolved, a challenge that must be navigated, or a perplexing topic that appears in academic literature, in theory, or in practice and necessitates thoughtful analysis and inquiry.

What is a research problem?

A research problem is a pressing issue or gap that needs some answers. It is a troubling question that leads to the need for meaningful understanding or investigation (Sacred Heart University Library, 2020). It is a difficulty that needs to be addressed.

What are the Sources of Research Problem?

One of the difficulties that you may encounter in conducting research is where to source problems that they will conduct. Some of the possible sources of problems are as follows:

1. Conflicting results prompt additional research in the study of various phenomena.

This difficulty typically results from discrepancies with the approach used or from a mere failure to carry out a thorough analysis of the challenges at hand (Regoniel, 2020). You can only find out conflicting results if you read published studies related to your study interest.

2. Research Gaps.

A research gap is an unaddressed topic or an unsolved issue in a field that is the result of insufficient prior study in that area. It is the inquiry that you came across after conducting an exhaustive literature review. The background, the gap, and the importance are typically the three components of a research gap statement. The background gives some perspective and background knowledge about your subject. The gap outlines the areas of the literature that are unclear or missing, and it also indicates what you wish to investigate.

3. Research priorities in your field of discipline.

- Harmonized National Research and Development Agenda 2017-2020 (<https://www.dost.gov.ph/phocadownload/Downloads/Journals/Ap>)

proved%20Harmonized%20National%20RD%20Agenda%20%202017-2022.pdf)

- National Higher Education Research Agenda -2
(<https://ched.gov.ph/wp-content/uploads/2017/11/NHERA-2.pdf>)
- Philippine Development Plan 2017-2022
(http://www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022_Final.pdf)
- Institutional or University Research Agenda

Three Types of Research Problems

1. Descriptive problem
2. Causal problem
3. Relational Research Problem

A descriptive problem asks questions about what is present. It seeks to depict what is already existing.

Examples

- ✚ What is the level of awareness of farmers about climate change? (question)
Level of awareness of farmers about climate change (title)
- ✚ What is the status of the internet connectivity of students in Region III Universities? (question)
The status of the internet connectivity of students in Region III Universities

A causal problem shows the extent of cause-and-effect relationships.

Examples:

- ✚ What are the effects of educational apps on the accomplishment of projects and assignments among students? (question)
Effects of educational apps on the Accomplishment of Projects and Assignments among the Students (title)
- ✚ What is the effect of environmental education on the engagement of students in climate change action?
The Effect of environmental education on the Engagement of Students in climate change action (title).

Relational Research Problem clarifies whether there is a significant relationship between one variable to another.

Examples:

- ✚ What is the relationship between the study habits of the students and their academic performance?
The relationship between the study habits of the students and their academic performance. (title)

- ✚ Is there a significant relationship between the status of students' internet connectivity and their academic performance?
Relationship between the status of students' internet connectivity and their academic performance. (Title)

How to develop a catchy research problem or title

1. Indicate the subject and scope of the study accurately.
2. Avoid the use of abbreviations.
3. Use words that create a positive impression and stimulate reader interest.
4. Use current nomenclature or technical terms from the field of study.
5. Identify key variables.
6. It is limited to 10 to 15 substantive words.
7. Do not include "study of," "analysis of," or similar constructions.
8. Use correct grammar and capitalization with all first words and last words, including the first word of a subtitle. All nouns, pronouns, verbs, adjectives, and adverbs that appear between the first and last words of the title are also capitalized.
9. Exclamation marks are rare in academic papers.
10. Title must be not too narrow and not too broad.

Writing Research Questions/Subproblems

When you already have a title in mind, the next thing to do is to develop specific research questions. The guidelines below will be helpful.

1. Reading related studies will help you phrase a research question. In some published theses, specific research questions are included. You can study how researchers state specific research questions.
2. Do not veer away or deviate from the main topic. Your questions must be related to your main topic or title.
3. You may develop descriptive, causal, or correlational questions.

Example1:

Title: The Climate Change: Awareness of Farmers and its Effect on

Rice Production

Specific Research Questions:

- Descriptive: What is the awareness of farmers about climate change?
What are the climate change adaptive practices of the farmers?
- Causal: What is the effect of climate change on the rice production of the farmers?
- Relational: Is there a significant relationship between the level of awareness of the farmers on climate change and their adaptive practices?

✚ Note that all questions raised are related to the main topic or title which is the awareness of climate change.

Example 2:

Title: Mental Health Issues among young people in A Community

Specific Research Questions:

- Descriptive: What are the mental health issues of young people in the community?
- Causal: What is the effect of seminars conducted by the Guidance Office to help young people cope with mental health issues.
- Relational: Is there a significant relationship between the gender of the young people and their mental health?

Example 3:

Title: Comparison of the Study Habits of Achievers and the non-achievers

Specific Research Questions:

- Descriptive: What are the study habits of the students who are achievers and non-achievers?
- Causal: What is the effect of the study habits of the respondents on their academic grades?
- Relational: Is there a significant relationship between the number of hours of study and the academic performance of the students?

- ✚ Questions developed in a study may not necessarily contain descriptive, causal, and relations. Questions may all be descriptive, a combination of causal and descriptive questions, or a combination of descriptive and relationship questions.

Example 3:

Title: Effect of Mayana Leaf Extract on Wound Healing

Research Questions:

1. What are the active agents found in Mayana leaf extract? (Descriptive)
2. What are the effects of Mayana Leaf Extract on wounds? (Causal)
3. What is the formulation of Mayana leaf extract which is effective for wound healing? (Descriptive)

Example 4:

Title: The Level of Stress Among Teachers in Tarlac

Research Questions:

1. What is the level of stress among teachers in Tarlac? (Descriptive)
2. Is there a significant relationship between the age, gender, and rank of the teachers and their level of stress? (Relationship)
3. How do teachers manage their stress? (Descriptive)

Chapter 4

Reviewing and Writing Literature and Citing authors

Reviewing the literature and studies lays the groundwork for knowledge about the subject or topic you want to study. In addition, a literature review enables you to give due credit to the authors and prevents you from repeating previously conducted research. Also, it finds contradictions such as gaps in the literature, issues with earlier research, and unanswered problems.

How to Conduct literature review (University of West Florida, 2020).

1. Choose a topic and define the research questions.

Remember that the literature review is anchored on your topic. So, before you search for literature, you must have decided on a topic to work on, and your research questions or problems must be clear to you. If you need the assistance of your adviser to check on your research questions to clarify the topic you want to work on, you may need to show your main problem and specific problems to him/her.

2. Decide on the Scope of your review.

After clarifying your research questions with your adviser, the next step is to decide on the scope of your literature search. You can do this by answering the following questions:

- a. How many studies do you need to review?
- b. How comprehensive is the review?
- c. How many years should it cover?

In answering this, you need to look at your school requirements. For example, there are schools requiring a minimum of five foreign and five local studies in the undergraduate programs and in ten foreign and ten local studies in the graduate programs. Mostly, studies to include in the review must be published at least within the last ten years but for literature, sources published older than ten years ago are accepted.

3. Select the databases/ websites that you want to use for the review.

- a. Finding databases can be done through Google. Type “research databases” in Google and you will be shown the top list of academic research databases. You can choose what is appropriate for your topic.
- b. You can also ask the assistance of your school librarian for available databases you can access from your library.

4. Conduct your literature searches and find the literature or study.

- a. To facilitate your literature search, read the abstract first. In doing so, you will save time and you can easily decide whether the paper is suited to the topic you are working on.

- b. Make a list of the topics you have already searched to avoid duplication. Again, keeping a list of literature you already searched, will save a lot of time.
- c. It will be helpful if you look at the bibliography or reference section of the research you reviewed. This will help you locate more related studies.
- d. You may need the help of your adviser to affirm if the materials you included in your literature search are related to your study.
- e. For scholarly engagements, you must cite your sources properly.

5. Review the literature.

- a. Make a list of the title, author, and source (journal name, volume, and date of publication).
- b. Look for the answers to the following as these will be important inclusions in your literature review:
 - What are the research objectives or the problems?
 - What are the methods used?
 - What are the findings, conclusions, and recommendations?
 - What are the similarities and differences of the literature or study to the research you are working on?

6. Citing your literature/references

In doing research, citing the work of credible authors adds more to the scholarliness of your paper. However, it is a must that you give credit to the authors directly in the text. This is called citing literature. **The importance of citation is to avoid plagiarism.** According to the Rochester Institute of Technology (n.d.), *“plagiarism is the representation of others’ ideas as one’s own without giving proper attribution to the original author or authors.”* This means that students or writers commit plagiarism when they copy direct phrases or sentences from a text or paragraph and do not provide quotation marks or do not paraphrase or write the summary of the authors’ work and fail to cite the authors.

In citing literature, the general rule is to include the following:

- Author’s name
- Date of publication
- Title of the study or article
- Name of journal
- Digital Object Identifier (DOI)

Citation styles:

Citation styles refer to the formal way that citations are formatted (Upstate University of South Carolina Library, 2021). There are various formatting styles but usually, you follow the standard being adopted in your school/organization or the publishing journal where you want your paper to be published.

The latest styles are the following:

- APA (American Psychological Association)- used in studies related to Education, Psychology, and some Sciences
- ACS (American Chemical Society)- studies related to Chemistry and other physical sciences
- MLA (Modern Language Association)- used by humanities
- Chicago and Turabian – used by Business, History and Fine Arts

The proper formatting is shown in the following websites:

- **APA**-<https://apastyle.apa.org/instructional-aids/reference-guide.pdf>
- **ACS**-
<https://www.concordia.ca/library/guides/chemistry/acs.html#:~:text=It%20is%20based%20on%20the,of%20citations%20used%20by%20students.>
- **MLA** - <https://www.bibme.org/mla>
- **Chicago and Turabian**-
<https://www.chicagomanualofstyle.org/turabian/citation-guide.html#:~:text=Source%20citations%20in%20the%20Turabian,The%20Chicago%20Manual%20of%20Style.>

How to avoid plagiarism (Massachusetts Institute of Technology, n.d)

- **Quoting the author**- a quotation must use the exact words of the author or authors. For three lines or 40 words, quotation marks are used. For longer quotations, the paragraphs are in blocked form.
- **Paraphrasing the sentences**- putting ideas of a text in your own words. Paraphrased sentences must be shorter than the original sentences.
- **Summarizing**- putting major ideas in your own words. This is usually shorter than paraphrased sentences.

Chapter 5

Research Methodology

Research methodology answers the “how” in the conduct of a study. How did you design your study? How did you develop the research tools? How did you gather data? How did you analyze the data?

A. The Basic parts of the Research Methodology

1. Research Design
2. Locale
3. Research Tools and Validation
4. Data Gathering Procedure
5. Data Analysis technique
6. Ethical Considerations

Research design

A research design is a strategy that you will use to answer your research questions using empirical data or data that you gathered from the respondents. Research design is the overall structure of the research while research methods are the various processes, procedures, and tools used to gather and analyze data.

Three Fundamental Research Designs

1. Qualitative

This research design gains insight, and explores the depth, richness, and complexity inherent in the phenomenon; gathers data in free form and non-numerical. Sources of data could be diaries, open-ended questionnaires, interviews, and observations which are not coded using a numerical system.

2. Quantitative

This research design tests relationships; describes and examines cause and effect relations; and compares variables. This gathers data that can be coded using numbers. Sources of data can be close-ended questionnaires and rating scales.

3. Mixed Method

This is a combination of qualitative and quantitative design. Here, you will be gathering data from close-ended questionnaires or numerical data and at the same time data from open-ended questions or interviews. Quantitative data are to be analyzed using statistics while qualitative data are to be analyzed using non-numerical techniques such as thematic and narrative analysis.

- ✚ In choosing the design best suited to your study, consider the following:
1. Does your research problem require you to gather numerical data?
 2. Do you need to compute or use statistics to aid in the analysis of your data?
 3. In your research tool or instrument, did you provide options represented by scales where the respondents just checked what applies to them?
 4. Do you need to interview individuals to provide information that will be the basis of your answers to the research questions?
 5. In your questionnaire, did you ask open-ended questions?

If the answer to the first three questions is “yes,” then you employ quantitative design. On the other hand, if your answer to questions 4 and 5 is “yes,” then you will have to choose the qualitative design. If your answer to questions 1 to 5 is “yes,” the appropriate research design is a mixed method. The next step is to choose what specific design to employ under each of the three fundamental designs.

Types of Quantitative Research Design

Design	Description	Example
Descriptive	This study design describes a phenomenon occurring at the present time. This design does not involve any manipulation of variables unlike in experimental studies.	Evaluation of the Performance of TSU Graduates in the Chemistry Board Examination The Teaching Preferences of the Students in Environmental Science Department Challenges Encountered by Online Sellers
Survey	This design allows data gathering from a wide population across multiple groups.	Customer Feedback on the Services of Fast-Food Chains in Central Luzon Level of Approval of the communities on the Services provided by the Local Government Units Across Luzon

Design	Description	Example
Correlational	This study design seeks to determine the relationship between variables with no influence from extraneous variables.	<p>The Relationship between the Profile and the academic performance of Students</p> <p>The Relationship Between the Status of Internet Connectivity and the Academic Performance of Students</p> <p>The relationship between the frequency of hospital visits and the level of recovery of patients.</p>
Comparative	This design compares variables in the study. The goal is to determine if there is a difference between variables.	<p>Comparison between the learning style preferences of students taking up BS in Environmental Science and BS in Nursing</p> <p>Comparison between the salaries and incentives of teachers in private and public schools</p> <p>The energy consumption of households in rural and urban communities</p>
Experimental	This type of design determines the interaction between independent and dependent variables to know the cause-and-effect relationship between the two variables.	

Design	Description	Example
Experimental	<p>Under this research design, there are two basic types:</p> <ol style="list-style-type: none"> 1. Quasi-Experimental (no random selection of subjects or participants) 2. True- Experimental (randomized selection of subjects or participants) 	<p>The effect of leaf extract of Mayana on the growth of <i>Staphylococcus aureus</i></p> <p>Effectiveness of Multimedia in the academic performance of SPED Students</p> <p>The effect of vermiculture on the growth of Eggplants.</p> <p>The antiseptic potential of lemon grass</p> <p>Effects of Integrating Games in Teaching Mathematics</p>

Qualitative Designs:

Design	Description	Example
Phenomenological	<p>Phenomenology is utilized to thoroughly describe the traits that define the occurrences that have taken place. In-depth interviews are the main strategy used to obtain data.</p> <p>In this study design, the researcher can have only a single or a few participants experiencing a particular</p>	<p>A phenomenological study of patients who survived the COVID-19 Ordeal</p> <p>The lived experiences of HIV patients.</p>

Design	Description	Example
	phenomenon. The researcher's aim is to understand a phenomenon, experience, or event based on the account of the persons themselves.	Lived experiences of amputated diabetic patients.
Ethnography	This study design is employed when a researcher wants to learn more about a population to fully understand their lives in general or a particular component. Observation over a long length of time is the main technique used to gather data. Interviewing people who have studied the same cultures might be appropriate as well.	The tradition of Cordillera tribes in burying their dead The Aeta health beliefs and their practices during illnesses The Badjaos concept ad beliefs of marriage
Case Study	Case studies should be utilized when the researcher wishes to focus on how and why something occurs. The behavior is observed rather than influenced. A case study is a thorough examination of how a particular circumstance, person, or event evolved over time, whereas phenomenology is a study that aims to comprehend the participants' individualized, lived experiences and views.	A Case Study of a Family of Albino Children The proliferation of Street children in Tarlac The proliferation of Informal Settlers in a privately owned land
Grounded Theory	This study design involves analyzing data and generating theories	Experiences of Homeless Youth (Here, findings are bases on the generation of theory on how youth

Design	Description	Example
	<p>construct and negotiate their identities amidst their experiences in the streets.</p> <p>The formulation of hypotheses rather than their testing is more important in grounded theory. The theory that is developed is self-correcting, which means that when data are acquired, changes are made to the theory to allow for the interpretation of new data that are obtained.</p>	<p>Employees who easily burnout from work</p> <p>Parents' challenges in rearing children with disabilities</p> <p>The seafarers' Struggle with being away from Home.</p>
Historical Studies	<p>Historical studies are concerned with locating, identifying, analyzing, and synthesizing historical facts. Historical research aims to relate past events to the present and to the future in addition to learning about previous occurrences.</p>	<p>The speeches of Sen. Benigno Aquino, Sr.</p> <p>The Old paintings at the Tarlac Museum</p>
Narrative	<p>The phrase "narrative research" encompasses several methodologies that additionally rely on verbal or written communication as well as visual representations of people. These methods often focus on people's lives as they are revealed in their own stories.</p>	<p>The Life History of President Ferdinand Marcos, Jr.</p> <p>The Musical Arrangements of Ryan Cayabyab</p> <p>The influence of K-pop artists on the fans</p>

Since you have already decided on what your research design is, the next step under research methodology is describing your research locale.

Mixed Method Design

As mentioned earlier, mixed method design combines quantitative and qualitative research designs. The following are the types of mixed method design:

Design	Characteristics
Convergent Parallel	In a convergent parallel design, you simultaneously gather and evaluate both quantitative and qualitative data. When both analyses are finished, compare the results to make a final judgment.
Embedded	In an embedded design, both forms of data are gathered and analyzed simultaneously within a broader quantitative or qualitative design. Data of one kind is subordinate to that of another.
Explanatory Sequential	Your quantitative data gathering, and analysis takes place first in an explanatory sequential design, followed by your qualitative data collection and analysis. If you believe that your qualitative data will explain and contextualize your quantitative findings, you should adopt this design.
Exploratory Sequential	Quantitative data collection and analysis come after qualitative data gathering and analysis in an exploratory sequential approach. This design can be used to generate first hypotheses and conduct preliminary questions. The quantitative data can then be used to verify or validate your qualitative conclusions.

Mixed methods research design is an approach to gathering, analyzing, and "mixing" quantitative and qualitative research and methodologies in a single study to fully understand a research problem.

Research Locale or Research Environment

The research locale is where you will conduct your study. It briefly summarizes the location of the study's operations. Only significant elements that are relevant to the current investigation are included.

Guidelines for describing the research locale:

1. Only mention the name of the locale if you have asked permission from the owner or the manager or the head of the locale.
2. Describe the area of your locale in terms of its geographical location and its reference to major landmarks or how far your locale is from the landmark.
3. Discuss important details of your locale that are related to your study. Examples are the social and historical context of your locale.
4. You need to justify why the location is best for your research. If there are multiple locations, then you need to describe each of them. You may include maps especially when you are conducting field studies for data gathering.

Research Tools and Validation

Research tools are the instruments that you will use to gather data needed to answer the research problems. The following are the research instruments that you can use.

Instrument	When to Use
Questionnaire	<p>Is good for quantitative research designs, especially for descriptive studies. Questions are written to gather information.</p> <p>Types of questionnaires:</p> <ol style="list-style-type: none">1. Close-ended- respondents choose answers from options provided by the researcher.2. Open-ended- respondents have the freedom to answer questions in writing.3. Combined closed and open-ended questionnaire- there are parts of the questionnaire where the respondents will choose from options provided by the researcher but there are also questions where respondents are allowed to express their ideas. <p>The design of the questionnaire must reflect the research questions or objectives.</p>

	<p>Questionnaires may be distributed through:</p> <ol style="list-style-type: none"> 1. Online using Google Forms, emails, and messengers. 2. Face-to-face <p>Questionnaires are recommended for many respondents (McLeod, 2018).</p> <p>*Tests to measure academic competence also fall under the questionnaire</p>
Interview	<p>Is good for qualitative design. Its flexibility is an advantage since follow-up questions are possible when the researcher needs more information to give a better picture or situation of the problem at hand.</p> <p>Types of Interviews:</p> <ol style="list-style-type: none"> 1. Individual, face-to-face, and verbal exchange 2. Focus Groups 3. Telephone surveys <p>Depending on your study, the interview can be:</p> <ol style="list-style-type: none"> 1. One time 2. Series of sessions <p>Before the interview, the researcher must contemplate the meaning of structured, semi-structured, and unstructured interviews.</p> <p>Structured interview- relies on standard questions or written guide questions to ask. The researcher is not allowed to deviate from the prepared questions.</p> <p>Semi-structured- guide questions are prepared but the researcher may ask other questions not in the guide to get more information related to the guide question.</p>

	<p>Unstructured- the researcher has no prepared questions. The interview will not be directional unlike in structured interviews where the prepared questions direct the flow of talk between the researcher and the participant.</p> <p>In recording an interview, you must seek the permission of the person you are interviewing.</p>
Observation	<p>Data gathering is done by observing people thru:</p> <ol style="list-style-type: none"> 1. Participant observation- the researcher becomes a part or is a part of the group to be observed. 2. Non-participant- the researcher is not part or does not become a part of the group to be observed.
Reporting	<p>Gathering data through:</p> <p>Newspapers</p> <p>Website Articles</p> <p>Health records</p>
Laboratory Experimentation	<p>Used in experimental studies where the researcher needs to perform laboratory procedures to gather data such as in testing whether leaf extracts are effective anti-bacterial drugs.</p>

Research Population and Sampling

Data or information must be obtained, examined, and evaluated to address problems in research. Respondents, participants, or subjects are terms used to describe the research population as the data sources. Data sources in qualitative studies are referred to as “participants.” In descriptive studies using large size of data

sources, the term “respondents” is appropriate. For experimental studies, “subjects” is used (Quizlet, Inc., 2021).

When the research population is large, the researcher may only get a portion. This is called sampling.

Sampling Methods	Techniques
<p>Probability</p> <p>All eligible individuals in a target population have the chance to be included as actual research respondents.</p>	<ol style="list-style-type: none"> 1. Simple random sampling- Everyone in a target population has an equal chance to be chosen as a respondent. The researcher may use the fishbowl technique in this sampling. The researcher writes the names of the possible respondents on small papers and then puts the names in a bowl or any container. The researcher then picks rolled papers with names on them. Another technique that can be used is to assign numbers of respondents and then choose those with odd numbers or even numbers. 2. Systematic sampling- individuals are selected at intervals. 3. Stratified sampling- the population is divided into subgroups or strata that all share similar characteristics. For example, individuals are classified from Hospital A and B. 4. Clustered Sampling-population is divided into subgroups, not based on individuals. For example, people are groups based on the towns where they are residing.
<p>Non-Probability</p> <p>Respondent selection is based on the decision of the researcher.</p>	<ol style="list-style-type: none"> 1. Convenience – regarded as the easiest and simplest sampling since participants are selected based on availability and willingness to participate in the study. 2. Quota – the researcher sets a target number and characteristics of respondents and starts

	<p>recruiting. When the quota is reached, data gathering ends.</p> <ol style="list-style-type: none"> 3. Judgment or Purposive sampling- the researcher sets qualities or characteristics of target participants. 4. Snowball- this is used when participants are hard to approach. A participant will refer another prospective participant knowing that they have similarly situated. For example, in health studies, researchers may want to conduct a qualitative study of the lived experiences of HIV/AIDS patients. The researcher may need the help of a willing participant to recruit another willing patient.
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Purposive sampling is preferred over non-probability sampling because there is a higher chance that the target population is well-represented. Hence, finding and conclusions are generalizable.

Sampling Size Determination

The sample size is the allowable number of respondents that will represent a target population. Too small sample sizes will not yield valid results. Too large a sample size will increase cost and time (Kibuacha, 2021). Optimizing sample size will yield valid and reliable results and prevent the wastage of resources. Some of the formulas to determine the sample size are:

1. Yamane's Formula

There are many formulas used for calculating sample size. One of the most common formulas used is Yamane's formula: $n = N / (1 + N(e)^2)$ (Iddon, 2022).

The variables in this formula are:

n = the sample size

N = the population of the study

e = the margin error in the calculation

2. Slovin's Formula

Slovin's Formula provides the sample size (n) using the known population size (N) and the acceptable error value (e).

Slovin's Formula

$$n = \frac{N}{1 + Ne^2}$$

n = sample size

N = population size

e = margin of error

Fill the N and e values into the formula $n = N \div (1 + Ne^2)$. The resulting value of n equals the sample size to be used.

3. Cochran's' Formula

Cochran equation

Where n_0 is the sample size,

Z^2 is the abscissa of the normal curve that cuts off an area α at the tails;

$(1 - \alpha)$ equals the desired confidence level, e.g., 95%;

e is the desired level of precision,

p is the estimated proportion of an attribute that is present in the population, and q is 1-p.

The value for Z is found in statistical tables which contain the area under the normal curve. e.g Z = 1.96 for 95 % level of confidence

$$n_0 = \frac{Z^2 pq}{e^2}$$

4. Raosoft Calculator can be accessed on the internet for free. The link to the online calculator is: <http://www.raosoft.com/samplesize.html>

Note: If you do not know how to compute the sample size, consult your statistician

Data Gathering Guidelines

Data collection is the next phase of the research after the instrument has been selected and validated. Data from respondents, participants, or subjects must be gathered following sound data collection practices.

Important things to keep in mind in data gathering:

1. Gather information or data that will be needed to answer your research problem. For example, if you do not need data on the profile of the respondents, you must not include that in your instrument.
2. Only embark on data gathering after thorough planning.
 - a. If you plan to use a questionnaire, make sure you have an organized strategy on how to distribute it, how to get it back, and how to contact respondents should they fail to return it as expected.
 - b. If you plan to conduct interviews, think through how you will make the interviewees feel comfortable and calm so you can get useful information from them. The interview needs to be conducted at a time when the interviewees are available and not under time constraints, so keep that in mind as well. Additionally, if you intend to record the interview, you must obtain the interviewees' consent.
 - c. If you choose to observe the participants, you must organize your technique to make sure they behave naturally while you are watching.
 - d. If you need to undertake laboratory activities to obtain data, make sure you have the necessary skills, that all the necessary supplies are available, that you follow safety protocols, and that the processes are reflected in the research methodologies.
3. Ensure Credibility, reliability, and validity.

In gathering data, ensure reliability. Data is reliable when you are confident that similar results will be generated when you gather the same data using the same

period and method. On the other hand, data is valid if this measure or describes what you are set to study. Data is credible when it is authentic and believable.

4. Observing Ethics in Data Gathering

Ethics must be observed during data collection to protect respondents' rights and to ensure that there are no major risks involved in the study that he or she has agreed to be a part of. You must obtain the research participants' agreement or informed consent, stating their desire to take part in the study. If possible, you submit your plan to an ethics committee, and once you have received their approval, you only proceed with the study.

Data Analysis Techniques

Following the collection of data, you will now start the analysis and interpretation. Never forget that research is more than just data. Data needs to be analyzed and interpreted so that you can draw logical conclusions and make wise recommendations for further developing programs, systems, and other technologies or improving knowledge or practices.

The objective of the analysis and interpretation is to look for meaning that can serve as evidence. For correlational studies, for instance, the researcher looks for variables that are related and how much they are related. For experimental studies which determined whether a concoction is an effective anti-bacterial agent, the researcher interprets data findings, then, eventually accepts, or rejects the hypothesis.

Delivering correct and trustworthy data is the goal of data analysis in research. You need to maintain integrity, accuracy, and truthfulness of data gathered. Avoid statistical errors as much as you can and figure out how to handle common problems like outliers, missing data, data manipulation, data mining, or creating graphical representations.

Quantitative Data

For quantitative data, you need to tally the responses from the questionnaire. You can use Excel for tallying purposes. Once you have tallied the responses, you may now apply statistical computations. In case you are in doubt about the appropriate statistics to use, you may engage the help of a statistician. But here are some guidelines that may help you in choosing statistical formulas to use based on Mishra et al. (2020).

1. Aim or the study objectives. When comparing the means of two independent samples, the unpaired samples t-test is employed, while regression analysis is utilized when the goal is to identify the predictors of the outcome variable.
2. Type and distribution of the data used. Depending on the type of data, different statistical tests are chosen for the same purpose. While nonparametric approaches are utilized for nominal, ordinal, and discrete data, parametric and nonparametric methods are also employed for continuous data. Depending on how the values are distributed, the most representative measure for a continuous variable can be chosen. While the median is regarded as the most suitable representative measure of the data set for non-normal data, the mean is the representative measure for continuous variables that follow a normal distribution. Comparably, for categorical data, we use proportion (%), whereas, for ordinal/ranking data, we use mean ranks as our representative measure.

If you are testing the hypothesis, inferential statistics are used. For example, when you compare the means, you may use Analysis of Variance (ANOVA).

3. Nature of observation. Assessing whether data are paired (the same subjects are measured at multiple time points or using different procedures) or unpaired (each group has a distinct subject) is another crucial step in the selection of the statistical test. For instance, the paired samples t-test is used

to compare the means of two sets of data when the data are paired, while the independent samples t-test is used when the data is unpaired (independent).

All t-test and F-test variants are regarded as parametric tests. When comparing the means of two groups, the student's t-test (one sample t-test, independent samples t-test, paired samples t-test, etc.) is used. When comparing the means of three or more groups, the F test (one-way ANOVA, repeated measures ANOVA, etc.), which is the extension of the student's t-test, is used.

The mean and standard deviation of the data are used to construct the Pearson correlation coefficient, which is also regarded as a parametric technique. Nonparametric alternatives to the parametric approaches are also available. For a student's t-test, for instance, Mann-Whitney U and Wilcoxon tests are utilized, while Kruskal-Wallis H, median, and Friedman tests are further approaches to the F test (ANOVA). Similar to how Pearson correlation and linear regression use the Spearman rank correlation coefficient and log-linear regression, respectively, as nonparametric methods.

The Matrix below is lifted from the study of Mishra et al. (2020).

Description	Parametric Measures	Non-Parametric Measures
Descriptive statistics	Mean, Standard deviation	Median, Interquartile range
Sample with population (or hypothetical value)	One sample t-test ($n < 30$) and One sample Z-test ($n \geq 30$)	One sample Wilcoxon signed rank test
Two unpaired groups	Independent samples t-test (Unpaired samples t-test)	Mann Whitney U test/Wilcoxon rank sum test

Description	Parametric Measures	Non-Parametric Measures
Two paired groups	Paired samples t-test	Related samples Wilcoxon signed-rank test
Three or more unpaired groups	One-way ANOVA	Kruskal-Wallis H test
Three or more paired groups	Repeated measures ANOVA	Friedman Test
Degree of the linear relationship between two variables	Pearson's correlation coefficient	Spearman rank correlation coefficient
Predict one outcome variable by at least one independent variable	Linear regression model	Nonlinear regression model/Log-linear regression model on log-normal data
Statistical Methods to Compare the Proportions		
Description	Parametric Measures	Non-Parametric Measures
Test the association between two categorical variables (Independent groups)	Pearson Chi-square test/Fisher exact test	Variable has ≥ 2 categories
Test the change in proportions between 2/3 groups (paired groups)	McNemar test/Cochrane Q test	A variable has 2 categories
Comparisons between proportions	Z test for proportions	The variable has 2 categories

To put it simply, descriptive statistics concentrate on explaining the obvious features of a dataset (a population or sample). In contrast, inferential statistics concentrate on drawing conclusions or predictions about a broader dataset from a sample of those data.

Data Analysis in Qualitative Designs

The process of gathering, evaluating, and interpreting qualitative data which are non-numeric, conceptual information, and user feedback, to find themes and patterns, respond to research questions, and decide what steps need to be taken to improve a product or website is known as qualitative data analysis (QDA).

Types of Data Analysis	Description
Content Analysis	The presence of particular words, subjects, and concepts in text, image, video, or audio messages is examined and quantified through the study process known as content analysis.
Thematic Analysis	The method's focus is on finding patterns that are then reported as themes developed by the researcher.
Narrative Analysis	The technique of narrative analysis is used to interpret the accounts of study participants, including those found in case studies, interviews, testimonials, and other types of text or visual data.
Discourse Analysis	To do a discourse analysis is to investigate the underlying significance of qualitative data. To analyze the connections between the information and its context, texts, audio files, and videos must be carefully examined.

One of the common data analysis techniques for qualitative study is thematic analysis. The following are the basic steps in thematic analysis:

1. Becoming familiar with the data. This can be achieved by reading and re-reading the responses from the participants.
2. Generating Initial Codes- Every time you see something intriguing in your data, you note it down as a code, which is a quick explanation of what was said in the interview. In contrast to interpretation, a code is a description.
3. Generating Themes-Sorting the codes into higher-level topics is what it means to generate themes. To organize subjects into these broad categories, researchers may utilize tables, diagrams, or theme piles. "Candidate themes" and subthemes mark the conclusion of this phase.
4. Defining and Naming themes-The process of defining themes entails articulating precisely what we mean by each theme and determining how it contributes to our understanding of the facts. The process of naming themes is coming up with a brief and clear name for each subject.
5. Writing Up- When you have named your themes, you are now ready to write them.

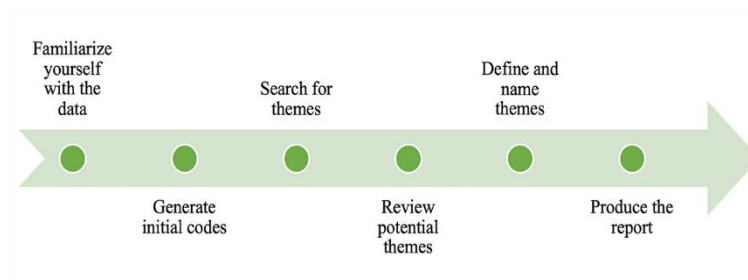


Figure 1. Summary of the Steps in Thematic Analysis

Note: Figure 1 was lifted from <https://www.maxqda.com/>

Research Ethics

Research ethics is an important part of research methodology. Conducting research in accordance with the highest standards of practice and with the least

amount of risk of unfavorable or compromising results or repercussions is ensured by research ethics and integrity practices. Participants in research are protected by ethics. It enhances ethical and scientific standards and protects researchers/investigators (by giving them a clear framework to work within).

Example of Stating the research ethics:

There is a minimal or negligible potential ethical issue in this study as data from the respondents shall be gathered with utmost confidentiality. The researcher shall apply the data privacy act in handling the data provided by the respondents in the Google Form. The researcher will be the sole party in downloading data from the respondents. The researcher shall code the data before giving them to the statistician so that the names and email addresses shall not be seen by the statistician. Moreover, informed consent will be sought from the respondents to indicate their voluntary participation in the study.

Chapter 6

Writing the Results and Discussions

The purpose of the result and discussions is to explain any new knowledge or insights that resulted from your study, as well as to interpret and describe the relevance of your results in relation to what is previously known about the research problem being studied.

What is the difference between results and discussions?

Results are the presentation of your data analysis or your findings. Usually, the results are organized in tables or figures. An example is shown below:

Example 1:

Table 1

The Age Distribution of the Respondents

Age Range	f	%
15-20	16	32
21-25	19	38
26-30	15	30
Total	50	100

Example of presentation of results:

Table 1 shows the age distribution of the respondents. Sixteen out of 50 respondents or 32% are aged 15 to 20 years. Nineteen or 38% have ages that fall

within 21 to 25 years and 15 or 30% have ages within 26 to 30 years. Findings show that there is almost an even distribution of respondents across the three age brackets.

Example of presentation of Discussions

The findings are consistent with the result of the study conducted by Cruz (2021) where the respondents’ ages were evenly distributed from the age bracket of 15 to 20 and 26-30. This implies that customers frequenting malls are teens and young adults.

Example 2: Presentation of Results and Discussions

Table 2

Knowledge of What Climate Change is

Options	f	%
Change in weather over months	41	31.06
Change in weather over days	8	6.06
Change in weather over the years	83	62.88
Total	132	100

The data reflected in Table 2 show that while most respondents have a correct understanding of what climate change is (62.88%) there is still a sizable percentage of students who have incorrect knowledge. Climate change includes changes in temperature and weather patterns over several years or even decades (The United Nations, n.d.; National Geographic, 2022; Australian Academy of Science, 2022). The findings are consistent with the results of the study conducted by Lacadin (2021) at

the University of Highland Valley where 32% of the students indicated that climate change is a change in weather over months. Based on the findings, it is essential to explain climate change well to students.

Example 3:

Table 3

The Respondents' Sources of Information about Climate Change (N=132)

Sources	f	%
Television	103	78.03
Teachers	100	75.76
Internet	118	89.39
Textbooks	73	55.30
Newspaper	45	34.09

*Note: Multiple responses from the respondents

The data in Table 3 reflect the respondents' sources of information about climate change. The number one source of information is from the internet (89.39%) followed by television (78.03%) then teachers came third (75.76%). Some learned about climate change from textbooks (55.30%) and others from newspapers (34.09%). Findings show the three top sources of information among the respondents. These are the internet, television, and teachers. The findings are almost consistent with the result of the study conducted by Gautam et al. (2021) in Nepal where television ranked the first source of climate change information followed by teachers and the internet. Findings imply the need to enrich climate change news over television and the internet since these are the main platforms which students acquire

knowledge from. Also, the role of teachers in providing climate change information to students is manifested by the response of the students.

Table 4

The Respondents' Climate Change Adaptation Practices (N=120)

Adaptation Practices	f	%
Participate in the protection of biodiversity. E.g. No to deforestation	63	52.50
Saving on energy consumption.	67	55.83
Eating more fruit and vegetable diet instead of meat.	65	54.17
Walking instead of riding a vehicle when the destination is nearby.	60	50.00
Practicing the 3 Rs- Reuse, recycle, and reduce.	45	37.50
Participating in greening programs.	40	33.33

*Note: Multiple responses from the respondents

Data in Table 4 show the climate change adaptation practices of the respondents. It can be observed that 70 or 58.33% of the respondents participate in the protection of biodiversity such as their disagreement to cutting trees and other species in the forest. Others claimed that they practice energy saving (67 or 55.83%). Some eat more fruits and vegetables and less meat (65 or 54.17%). In addition, 60 out of 120 respondents claimed that they walk when going to places near their location; 45 or 37.50% practice the 3Rs; and 40 or 33.33% participate in greening program. The findings indicate that while the respondents have climate change adaptation practices, it can be observed that the responses were only a little over 50% and some practices were only done by less than 50% of the population.

The findings of the present study show that there is a considerable number of respondents that do not have climate change adaptation efforts. This result is similar

to the findings of Azeki et al. (2022) who discovered that only about 50% of the students in Aramco Valley High have climate change adaptation practices. The results of the present study show the need to strengthen climate change awareness and the negative impacts it brings to the world.

Simply put, results are what you found, and the discussions are what your results mean and how your results relate to existing literature and studies.

You contextualize the contribution of your study when you discuss the findings and compare them to earlier studies.

Chapter 7

Writing Conclusions and Giving Recommendations

Conclusions, as well as recommendations, are the two last sections that represent the significant contributions a researcher has made to the general body of knowledge.

Drawing Conclusions

Inferences or conclusions are drawn from your findings. It is in this part that the impact and significance of the study are elaborated. Here are the guides for writing your conclusions:

1. Restate your research problem in presenting your conclusions.
2. The solutions to your research questions must be clearly stated.
3. Summarize or reflect on your process when stating your conclusions.
4. Clearly state the new knowledge or concept which you have generated from your study.
5. Make recommendations for future studies on the topic of your thesis or dissertation.

Example: (Refer to Table 4 on page 38 for the findings)

Research Question: What are the climate change adaptation practices of High School students?

Findings:

The results show that 70 or 58.33% of the respondents participate in the protection of biodiversity such as their disagreement to cutting trees and other species in the forest. Others claimed that they practice energy saving (67 or 55.83%). Some eat more fruits and vegetables and less meat (65 or 54.17%). In addition, 60 out of 120

respondents claimed that they walk when going to places near their location; 45 or 37.50% practice the 3Rs; and 40 or 33.33% participate in greening program.

Conclusion:

The study identified the climate change adaptation practices of high school students. Based on the findings, not all high school students have developed climate change adaptation practices as indicated by only a little above 50% of the respondents. It can be inferred that high school students are not so much concerned about climate change. The findings imply the need to implement measures to motivate high school students to be concerned about climate change and engage in climate change mitigation.

Note that the first sentence mentioned the objective of the study and the respondents. Then, it was followed by the key result. The inference or conclusion came next. In developing your own conclusions, make sure that you do not re-state your findings. Instead, make a clear statement about what the findings imply or what is the impact of the findings.

Giving Recommendations

Recommendations are what you suggest or propound to provide solutions to your findings. If you have discovered the causes of existing problems, your recommendations will address the causes. In addition, recommendations may promote the use of effective procedures, practices, strategies, techniques, management, and others that you have proven in your study.

What are some guidelines for giving recommendations?

1. Recommend practical or doable solutions to problems identified.
2. Recommend specific and clear solutions.
3. Recommendations must be evidence-based.
4. Make recommendations for future research on your topic.

5. If you have developed a technology, system, procedure, and other tangible materials that you have proven to be effective in your study, you recommend their adoption.

Example: (Refer to the conclusion stated on page 41)

Since the findings showed that many high school students have not developed climate change adaptation practices, the following are recommended:

1. *Schools must integrate climate change and other environmental concerns into the curriculum. This is because students spend most of their time in school. By integrating climate change and environmental issues, students' awareness of the negative impacts of climate change will be raised.*
2. *In addition, school programs must include activities related to environmental issues/problems. In this way, students will be encouraged to take part in addressing issues that compromise the health of the environment such as climate change.*
3. *Future studies may be conducted to determine why not all students have developed climate change adaptation practices.*

Limitations of the Study

Some formats of research include a discussion on the study's limitations. To know what to write under study limitations, it is important to clarify the difference between study delimitations and limitations. Delimitations are things the researcher will not do in the study. These are the aspects beyond the bounds they have established. On the other hand, study limitations are things the researcher cannot do because it is not within his/her control.

Example:

The sample size of the study was supposedly 134 but since 20 of the target respondents were unable to answer the questionnaires due to busy schedules, the sample size of the study population was not met.

Chapter 8

Research Formatting and Citing Style

The format refers to academic guidelines for final work organization and its structure. On the other hand, citation reveals to the reader where an idea, fact, or image originally appeared and where it first featured in the work.

Formatting Research

The research format usually depends on the standards set by your school. So, you need to obtain the format from your professor or thesis adviser. These are some aspects of research formats:

1. Parts of Research. What are the expected parts in your format? In some schools, these are the basic parts:

Preliminary Pages

Title page

Approval sheet

Abstract

Acknowledgment

Dedication

Table of Contents

List of Tables

List of Figures

Chapter 1: The Problem and Its Background

- Introduction- this contains the background of your study and the research gaps.
- Research Problem or Research Objectives- these are the specific research questions or objectives of your study.
- Hypothesis (if needed)- your tentative answer to the research questions.
- Significance of the Study – This presents the benefits that will be obtained from your study.
- Scope and Delimitation- This includes what your study covered and what are not covered.
- Definition of Terms (Some schools do not include this as a subpart of Chapter 1. Instead, these are integrated in the thematic presentation of literature review).

Chapter 2: Research Method

- Research Design – your design may be quantitative, qualitative, or mixed-method but you must indicate what specific design under the three basic designs did you use in your study.
- Research Locale- describes the site where you conducted your study.
- Research participants- indicates from whom you gathered your data.
- Research Instruments- this refers to the tools you used to gather your data.
- Data gathering Procedure- this part details how you gathered your data.
- Data Analysis- This indicates the statistical formula you used if your study is quantitative. If your study is qualitative, you must indicate your data analysis technique.
- Research Ethics- This describes the guidelines you followed to ensure that your respondents are kept safe and secure in the process of conducting your study.

Chapter 3: Results and Discussions

Chapter 4: Conclusions and Recommendations

Bibliography

Appendices

Curriculum Vitae

2. Citing Style

The most widely used citation style is *APA Style (7th edition) which is utilized extensively in the social and behavioral sciences. The second most often used style is *MLA, which is primarily utilized in the humanities. The humanities, particularly history, are known for their use of the Chicago notes and bibliography style. In the sciences, the Chicago author-date style is frequently employed (Caulfield, 2022).

APA- American Psychological Association	https://libguides.csudh.edu/citation/apa-7
MLA – Modern Language Association	https://www.bibme.org/mla
Chicago author-date style	https://library.menloschool.org/chicago

3. Margin, Spacing, and Font Styles and Sizes

Standard margins, spacing, prescribed font styles, and sizes are usually provided in your school. The guidelines below are the standards based on APA 7th ed.

- a. Margins are 1 inch on all sides.
 - b. The first word in every paragraph is indented ½ inch.
 - c.

Font styles	Font size
San serif	11
Calibri	11
Arial	11
Times New Roman	12
Georgia	11
 - d. Size of bond paper- letter (8.5 X 11 inches)
 - e. Double space entire paper, including the title page.
 - f. Left Align the text.
4. Recency of literature must be observed. In some schools, literature published within the last 10 years is accepted while for related studies, only journal articles published within the last five years are allowed. However, some schools may accept studies within the last 10 years.
5. Type of journal sources. Some schools are strict on the type of journals in citing literatures. They only accept journal citations indexed by Scopus, Web of Science, and Asian Citation Index.

Chapter 9

Writing a Publishable Research

Successful research conduct does not stop at the conclusions and recommendations. Remember that research is being carried out to come up with new knowledge. Hence, the research results ought to be communicated and shared. In addition, your conclusions may confirm or refute the claims made by other researchers. In this way, a new line of inquiry springs, and research continues. The concept is that study results inspire more investigation.

Moreover, the results of your research will also help in the development of theories and in illuminating issues that need to be resolved. Furthermore, if you have produced a considerable quantity of research on a particular subject or issue, you will gain credibility and establish yourself as an authority in that area of specialization. If there are governmental or non-governmental organizations seeking experts in the area your research is concentrating on, you will have an advantage over other researchers who have not published anything.

This chapter shall discuss how a research paper should be prepared to be accepted for publication.

What is a Research publication?

Publications make scientific knowledge accessible to the public and enable other academic audiences to assess the caliber of the research. Periodicals come in a variety of forms, including scholarly journals, professional or trade publications, and general interest and popular magazines. Scientific publications have a unique purpose, place, and requirement. The peer review process used by academic journals upholds uniqueness, application, and growth in a particular field of knowledge. To increase publication frequency and cut down on waiting time, there is a quick online publication method.

Scientometrics, which is the scientific measurement of scientists' work, has grown in popularity. It focuses particularly on analyzing scientists' publications and the citations they receive. Citations of the references in the publications reduce plagiarism by giving credit to the writers whose work is used. Journals with higher impact factors are thought to be more important than those with lower ones, and the impact factor is used to measure the relative relevance of a journal within its area. The h-Index, I10-Index, and other related Indices are also available.

The impact factor (IF) measures the number of citations for the typical article in a journal within a specific year. The standing or value of a publication can be ascertained by counting the number of times one of its articles is quoted.

What is a publishable paper?

A publishable work must use the explicitly specified methodology and provide a novel contribution (new knowledge). A thorough review of the idea or work should be the main component of the paper. If your idea seems interesting but not novel, your article is unlikely to be published. Your article cannot be published if it comprises numerous concepts but does not revolve around a single new issue, even if they are all novel but unrelated to prior research.

Moreover, the best paper for beginning writers is one that offers new evidence in favor of an established theory. In such an article, you do not develop a novel strategy; rather, you support an established strategy with new data.

Another excellent option for beginning writers is an article that delivers a novel coupling of outdated data and methodology. It merely connects previously unconnected evidence and an approach rather than providing new evidence or a new method.

Steps in Publishing Research Work

1. Choosing a journal

Always choose the journal you wish to publish in before you begin writing or preparing a research report/manuscript. Choosing a journal for publication will enable you to adapt it to expand on previously published research in that journal. Editors may then be able to see how a piece contributes to the journal's "conversation." Today, examples of reputable journals are indexed by Scopus, Web of Science, Clarivate, and the Asian Citation Index.

Guides in choosing journals.

a. Desk research - From your research, you are likely already aware of the numerous journals that are relevant to your subject. It is worthwhile to first look at these to determine if they would be a good fit. Utilize resources like Google Scholar and the for-fee or paid databases at your library to further investigate the periodicals that have published articles on your topic. When searching online for suitable publications to publish your paper in, try typing "research databases" into the search box.

b. Communicating with colleagues, experts, and librarians - Speaking with competent people in your immediate environment, such as coworkers, managers, and the librarians at your school, is another effective method for determining the best selection of publications. To assist you focus your search, you might ask a variety of questions, depending on who you are speaking with. What periodicals do they routinely read? Which ones do they think are the most revered? Have they enjoyed success while publishing in a particular journal? Do they have any suggestions for journals that would be appropriate for your area of inquiry, of course?

c. Look for "call for papers" - Most journals accept submissions without restrictions throughout the entire year. However, a journal may frequently highlight a particular theme or subject by issuing a call for papers and producing a special edition. To determine if any journals are actively looking for research similar to yours, look into special issues and calls.

d. Use Journal Suggester tools- You can focus your search by using journal suggester tools offered by certain publishers. For example, a tool for academic research that helps users choose the appropriate publication for their work is the Springer Journal Suggester. From a database of more than 2,600 Springer articles, the automated procedure can enable journal selection. You can also locate Elsevier journals that might be most suitable for publishing your scientific work using the Elsevier Journal Finder tool.

2. Writing or Preparing your Paper/ Manuscript

Your selected journal, your subject, and the kind of paper you are writing will all influence how you write your paper. Publication journals set the format of your paper so, you must carefully follow their format specifications. However, you may not know their formatting requirements on the initial submission. Writing your paper as scholarly as possible will increase the possibility of acceptance.

3. Making submissions

In submitting your application for publication, make sure that you read instructions from the journal publishers. Most reputable journals ask you to register on their website.

Before making submissions, you need to acquire ORCID. Open Researcher and Contributor ID, or ORCID, is a nonprofit organization with a global reach that is supported by dues from its member businesses. This digital identifier sets you apart from all other researchers. It makes sure that you and your research activities are identifiable, ensuring that you are given credit for all your efforts. It only needs 30 seconds to complete and is free. Application for ORCID is available online at <https://info.orcid.org/what-is-orcid/> or just enter "apply for ORCID" as your URL.

4. Waiting for the journal publisher to send you feedback

Normally, after submitting your manuscript to a journal publisher, you will get a confirmation that they have received it and be requested to wait for the outcome of their review. Do not try to submit to additional journals until you know the outcome of the evaluation.

The evaluation of your paper will include subjecting it to the peer review process. A scholarly publication is another term used to describe a peer-reviewed article. To maintain academic scientific excellence, the peer-review process involves having other specialists in the same field (peers) examine your scholarly work, study, or ideas. At this stage, you must be patient in waiting for a reply from the editor.

5. Responding to an Editor's Evaluation

Upon completion of the review process, the editor will send you a decision letter which may be in three forms:

a. Accepted- If the editor writes you and congratulates you because your paper is accepted for publication, you may rejoice since it means there is no need for you to revise your manuscript. You will just wait for the journal's release date. Some journal publishers ask for no publication fees, but other publishers do. If you need to pay a publication fee, details on the actual cost and where to send payment will be relayed to you. Keep your bank transaction receipts since you will be asked to send a scanned copy for confirmation.

b. Revision required – Based on the suggestions made by the peer reviewers, the editor will let you know what needs to be revised. You must closely adhere to their instructions and edit your paper to reflect their suggestions. Keep your patience. Most researchers revise their work before it is published. Revision recommendations should be welcomed because they raise the academic caliber of your work.

c. Decline- If you receive a rejection for your publication request, carefully consider the editor's justifications. Give yourself plenty of time to revise your paper and submit a brand-new version.

6. Publication

Once your paper is approved for publication, you will receive a gallery-proof version for minor proofreading corrections. The editor will inform you of the date of publication. Once published, you may now share with your colleagues, family, and friends.

Other Guidelines in Publishing Research

1. Be reminded that not all journals are reputable. Predatory journals, often known as fraudulent, deceitful, or pseudo-journals, are periodicals that falsely advertise themselves as reputable scholarly journals and engage in unethical publishing activities. Profit is the primary objective of predatory journals. They try to trick authors into paying to publish without offering rigorous peer review or editorial services, prioritizing profit over reliable and trustworthy science. Many people depend on publishing for job advancement, so one may search for journals that guarantee to publish all submissions. You can check the internet for the list of predatory journals.

2. Check the indexing of the journal. You can visit <http://mjl.clarivate.com/> to see if your manuscript is listed in the ISI Web of Science. After logging in, you may easily do a search using the journal's full name or ISSN. If your target journal is indexed in SCI, SCI-E, or ESCI, the search result will indicate this. Please be aware that the ISI Web of Science database contains all SCI, SCI-E, or ESCI-indexed journals.

3. References in your paper must at least be 30 to show that you have thoroughly exhausted related literature and studies.

4. In presenting results, sub-headings are allowed but the discussions are presented without sub-headings.

5. If there are more than one author in your paper, specify the contributions of each author in the completion of the study.

Some find it difficult to publish in reputable journals, yet it could seem simpler to others. When you read a published work, you only see the final product; you never see the failed attempts, the initial draft, the first revision, or the first resubmission. Publication requires another P- you need loads of Patience as you go through the process. Do not give up until you reap the fruits of your hard work.

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About the Author



Alma M. Corpuz earned a Doctorate Degree in Educational Management from Tarlac State University. In 1994, she completed a master's degree in general education. She pursued a Master of Science in Biology degree at the Virgen Milagrosa University Foundation in San Carlos, Pangasinan. She graduated Cum Laude on July 4, 2023. She is a licensed teacher and a registered medical technologist. Dr. Corpuz was the Dean of the Medical Technology Department, at Central Luzon Doctors' Hospital Educational Institution (1997 to 2007) and the Research Director of the same school (2008 to 2010). She was Vice President of the Philippine Association of Medical Technologists, Tarlac Chapter (2014-2018). She was the past secretary of the Philippine Association of Women Professors, Tarlac Chapter. She is a member of various academic and professional organizations such as the National Organization of Science Teachers and Educators (NOSTE, Inc.) and Phi Lambda Theta International Organization for Doctors. Dr. Corpuz was a former adviser of the TSU Philippine Science Consortium (PSC) Student Chapter of TSU (2017-2018) and the Environmental Science Society (2017-2018). She was the member-secretary of the TSU-Research Ethics Review Committee from 2017 to 2021. Dr. Corpuz has presented research papers at local, regional, national, and international (Singapore and USA) conferences. She has published in referred and reputable journals. Dr. Corpuz is also active in community outreach. She is the founder and chair of Pioneer Project REACH, a non-Government organization that assists the needs of indigent communities in matters of health, education, and the environment. Dr. Corpuz is a "Gawad Ybarra Awardee" as per DepEd Regional Advisory No. 119 s. 2020 and she yielded the following: Global Teacher Award (International Level), Excellence Award in School Leadership (National), Outstanding teacher of Region (Regional Level).