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PATHWAYS TO PUBLICATION:

A Comprehensive Guide for Researchers

2025



**Glen B. Millar
Minsoware S. Bacolod
Paul O. Dayandayan
Reden P. Latag
Roderick T. Verzosa
Authors**

**Dr. Jovi Jane Cullarin-Bernales
Editor**

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Website: www.philcadademian.com
Email Address: filcad2023@gmail.com

Preface

In today's competitive academic landscape, the ability to conduct and publish meaningful research is an essential skill for scholars across disciplines. Yet, the path from research conception to publication can be daunting especially for emerging researchers navigating it for the first time. *Pathways to Publication: A Comprehensive Guide for Researchers* was created to serve as a clear, practical, and insightful on research and publication.

This book is designed to bridge the gap between research ideas and scholarly publication. It offers guidance rooted in academic rigor, professional standards, and real-world applicability. Whether you are a graduate student, early-career academic, or seasoned researcher seeking to refresh your skills, this guide provides essential strategies to enhance your scholarly output and increase your chances of publication success.

The book is organized into four focused chapters, each addressing a key milestone in the publication process:

Chapter 1: Developing a Research Proposal

A strong research proposal is the foundation of any successful academic work. This chapter walks readers through the essential components of a proposal—formulating research questions, identifying gaps in knowledge, choosing appropriate methodologies, and clearly articulating objectives. It emphasizes the importance of clarity, feasibility, and academic relevance.

Chapter 2: Crafting a Comprehensive Review of Related Literature

A well-constructed literature review not only situates your research within the existing body of knowledge but also strengthens your theoretical and conceptual framework. This chapter provides a step-by-step guide to sourcing, analyzing, synthesizing, and presenting scholarly literature with critical insight and coherence.

Chapter 3: Preparing the Manuscript and Selecting the Right Journal

Transforming your research into a publishable manuscript requires careful structuring, adherence to academic conventions, and a clear understanding of your audience. This chapter offers practical tips on writing style, manuscript formatting, and, crucially, how to identify and choose the most appropriate journal for submission.

Chapter 4: The Peer Review Process

Peer review is a critical and often misunderstood part of the publication journey. This chapter demystifies the process, offering strategies for responding to reviewer feedback, handling revisions, and maintaining ethical standards. It also provides insight into what editors and reviewers look for in a high-quality submission.

Chapter 5: Ethical Research

Ethical research forms the foundation of credible and impactful scholarly work. This chapter outlines the key principles of conducting research responsibly, including honesty, integrity, transparency, and respect for all participants. It highlights the importance of obtaining informed consent, ensuring confidentiality, and avoiding practices such as plagiarism, data fabrication, and falsification.

We hope this book empowers researchers to approach academic publishing with confidence, clarity, and purpose. By offering a structured, guidance, and pathways to publication that aspires to support the global community of scholars in advancing knowledge, innovation and contributing to meaningful academic discourse.

-Authors

Acknowledgment

The creation of Pathways to Publication: A Comprehensive Guide for Researchers would not have been possible without the dedication, collaboration, and support of many individuals and institutions who share our commitment to advancing academic excellence.

First and foremost, we extend our deepest gratitude to all the contributing authors whose expertise and insights form the foundation of this book. Your willingness to share your knowledge, experiences, and practical strategies has enriched this guide and made it a valuable resource for researchers at all levels.

We would also like to acknowledge the unwavering support of our editorial team, reviewers, and advisers, who provided critical feedback and guidance throughout the development of this book. Your attention to detail, thoughtful suggestions, and commitment to quality helped shape this book into what it is today.

Special thanks go to our institutional partners, mentors, and colleagues in the research community who encouraged this initiative from the beginning. Your belief in the importance of scholarly writing and publication inspired us to pursue this book with purpose and passion.

To our families and loved ones—thank you for your patience, encouragement, and understanding during the many hours dedicated to writing, editing, and refining this work.

Lastly, we thank our future readers—researchers, scholars, and students—who continue to push the boundaries of knowledge. It is our hope that this guide will serve as a trusted companion on your journey to publication and contribute meaningfully to your academic growth.

-Authors

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CHAPTER 1
DEVELOPING A RESEARCH PROPOSAL

CHAPTER 1

DEVELOPING A RESEARCH PROPOSAL

Writing a research proposal is a tedious task for both students and professionals, often proving to be a frustrating and time-consuming experience. For students, the process can be particularly daunting as it requires a deep understanding of the research topic, the ability to craft clear objectives, and the skill to structure the proposal in a coherent and persuasive manner. This can be overwhelming for those new to academic research, leading to feelings of self-doubt and discouragement. Professionals, on the other hand, face the pressure of aligning their proposals with institutional standards, securing funding, and meeting deadlines, all while balancing their ongoing work commitments. The complexity of justifying the research's significance, outlining the methodology, and anticipating potential challenges can often lead to a sense of disappointment, especially when faced with revisions or rejections. Despite its challenges, writing a research proposal is a crucial step in any research endeavor, requiring persistence and attention to detail.



Research Proposal

A research proposal is a critical document in the academic and professional research process that outlines a plan for investigating a specific problem or question. According to Creswell (2014), a research proposal provides a structured framework for identifying the research problem, reviewing the existing literature, and detailing the methodology to be used in the study. Similarly, Vasanthakumari (2021), research proposals are essential documents that outline a researcher's intended study and methodology. They serve multiple functions, including synthesizing critical thinking, clarifying ideas, and facilitating communication between researchers and involved parties. Effective proposals should be specific, realistic, and beneficial, addressing a clear research problem. The typical format includes sections such as title, abstract, introduction, methodology, and budget. In addition, as stated by Abhinav (2023), the key components of a research proposals include justification, objectives, research questions, conceptual framework, hypotheses, data requirements, collection instruments, and methodologies.

Writing a Research Proposal

The first key element every research proposal must address is what you plan to accomplish. Provide a clear, concise explanation of the research goals and the intended outcome. A researcher must convince the audience that their study is significant and that it can contribute valuable insights to the field. For instance, a research proposal might aim to

investigate the role of artificial intelligence (AI) in improving customer service in retail businesses. The proposal should describe how the study intends to assess the effectiveness of AI-driven chatbots in customer satisfaction and the potential for these tools to enhance operational efficiency. It must communicate not just the topic but also why this particular research is timely and relevant. By emphasizing the importance of the research question, the researcher can engage readers and demonstrate that the proposed study is meaningful and warrants attention.

The second critical element is why you want to do it, which focuses on providing a strong justification for the research. In this part, the researcher must display an in-depth understanding of the existing literature and highlight the gaps or unresolved issues that their research intends to address. A solid literature review will help explain why the topic is worthy of investigation and why it has not been adequately explored. For example, the researcher studying AI in customer service might point to existing studies that focus on AI's potential in automating responses but mention that few have examined the impact of such technology on customer trust and long-term relationships. By demonstrating familiarity with the existing body of knowledge and identifying areas for further exploration, the researcher convinces the reader that the proposed study is essential to advancing understanding in the field.

Lastly, a research proposal must explain how you are going to do it, which includes detailing the methodology that will be employed to answer the research questions. The researcher must provide a clear and convincing plan that outlines how data will be collected, analyzed, and interpreted, ensuring that the approach is scientifically rigorous and appropriate for the research goals. For instance, in the case of studying AI's impact on customer service, the researcher may propose using a mixed-methods approach, combining quantitative surveys to measure customer satisfaction levels before and after the introduction of AI systems and qualitative interviews with employees to assess their experiences. This section should also address any potential challenges or limitations and demonstrate that the researcher has the expertise and resources to carry out the proposed study effectively. By establishing a sound methodology, the researcher ensures the readers that the research will be conducted systematically and with credibility, leading to valid and reliable results.



Core Goals in Crafting a Research Proposal

A well-crafted research proposal aims to introduce a project that will make a significant contribution to existing knowledge within a specific field. The purpose of the proposal is not only to showcase an innovative idea but also to demonstrate how the research will advance understanding and fill gaps in current literature. Whether it's exploring new scientific concepts, proposing a new theoretical framework, or analyzing an unexplored issue, the research project must be grounded in the idea that it will add meaningful insights. For example, a proposal that examines the effect of climate change on agricultural production in developing countries may offer new solutions for sustainable farming practices, contributing to both scientific knowledge and practical applications. The proposal needs to convincingly argue that this research is not only important but also novel enough to justify the investment of time, resources, and funding.



In order to effectively present the project, the researcher must clearly understand **what they are going to do, why they are doing it, and who it is for**. This means articulating the research objectives, identifying the target audience, and justifying the relevance of the study. A successful proposal will specify the research questions or hypotheses and explain how the outcomes will address real-world problems or academic gaps. For instance, a researcher may plan to investigate the impact of artificial intelligence on workforce automation and its potential implications for workers. The proposal should define why this topic is critical in today's economy, who will benefit from the findings (e.g., policymakers, businesses, or workers), and how the research outcomes will contribute to understanding the issue. Clear, specific goals guide the project, ensuring that the research remains focused and relevant.

Securing funding is a crucial aspect of any research proposal. Researchers must demonstrate that they have access to the financial resources needed to carry out their study and produce meaningful results. This often involves identifying potential funding sources, such as grants from governmental organizations, private foundations, or university-backed programs. A successful proposal will detail the budget, outlining how funds will be allocated to cover research materials, equipment, personnel, and other related costs. For example, if a researcher is studying renewable energy technologies, they would need funding to purchase necessary testing equipment, hire research assistants, and cover travel expenses for fieldwork. The proposal should also explain how the results will not only advance academic knowledge but also contribute to practical solutions, which may lead to broader societal or environmental benefits.

Another critical factor in a research proposal is ensuring that the project is achievable within the required time frame and with the available resources. It is essential to have a realistic and detailed plan that demonstrates how the research will be completed successfully and on schedule. Researchers must consider the scope of the project, potential obstacles, and the availability of resources (e.g., equipment, personnel, or data). A well-structured timeline, which includes specific milestones and deadlines, helps to demonstrate that the researcher can manage the project efficiently. For example, a study on the effects of urbanization on local wildlife may require multiple phases, including data collection, analysis, and reporting. Each of these stages must be carefully planned to ensure that the project stays within the allocated time frame and resources are used effectively.

A research proposal should also emphasize the researcher's expertise and experience in the subject matter and methodology. The proposer must convince the audience that they have the necessary skills, qualifications, and background to successfully carry out the research. This might include academic credentials, previous research projects, or professional experience relevant to the field. In addition to demonstrating their capability, the researcher should outline any collaborators or advisors who will provide support during the project, ensuring that all aspects of the research are covered. For example, a researcher proposing a study on psychological health in remote communities might highlight their background in clinical psychology and previous fieldwork experience. This not only increases the credibility of the proposal but also reassures funding bodies or institutions that the project will be executed with expertise and proficiency.

Lastly, a well-crafted research proposal can provide financial benefits to the university or research institute through overhead costs or administrative fees. Many funding bodies allocate a percentage of the grant to cover indirect costs, such as administrative support, utilities, or institutional infrastructure, which can contribute to the financial sustainability of the hosting institution. These overheads may not directly support the research but play an important role in maintaining the facilities and resources required to conduct the study. For example, if a university receives funding for a research project on public health, a portion of the grant may be allocated to cover costs related to laboratory space, administrative support, and data management systems. By securing such funding, the proposal can generate both academic and financial value for the institution. This aspect of research proposals highlights the broader impact that academic work can have on the financial health and growth of educational or research institutions.

Research Focus Areas

When deciding what to investigate in a research project, one important aspect is exploring new ideas that have not been fully investigated or understood. These new ideas often arise from emerging technologies, social changes, or recent discoveries in a given field. For example, a new idea could involve studying the impact of blockchain technology beyond cryptocurrency, such as its potential applications in securing voting systems or personal data privacy. Such an idea would push the boundaries of existing knowledge and offer fresh perspectives on how technologies can solve current societal issues. Pursuing new ideas in research allows scholars to explore uncharted territories, which can lead to groundbreaking discoveries with significant real-world applications.

Another key focus is finding better solutions to known problems. Many problems in various fields have been addressed over time, but there is always room for improvement. Researching more efficient or effective solutions to these problems can have a lasting impact. For example, researchers in the field of healthcare may investigate alternative methods to treat chronic diseases, such as a more affordable or less invasive treatment for diabetes. Even though the problem itself is well-understood, new research can optimize treatments, address side effects, or make interventions more accessible to a wider population. Investigating better solutions to existing problems is crucial for advancing industries and improving quality of life.

A particularly valuable approach in modern research is the exploration of multidisciplinary ideas, which involve integrating knowledge from different fields to tackle complex issues. Many of today's problems—like climate change, public health, or artificial intelligence—require expertise from multiple disciplines to develop comprehensive solutions. For instance, tackling the challenges of clean energy production might require collaboration between environmental science, engineering, economics, and policy studies. Researchers combining insights from various fields are better equipped to develop innovative solutions that would not be possible from a single discipline alone. Finally, identifying and addressing knowledge gaps—areas where research is lacking or incomplete—can be an effective way to drive new inquiries. These gaps might appear when existing studies leave unanswered questions or overlook certain variables. For example, while much has been studied about the environmental impact of plastic waste, there may be gaps in understanding how microplastics affect marine ecosystems at different depths. By focusing on such gaps, researchers can offer valuable contributions to the field, leading to a more complete understanding of the issue at hand.

Research Proposal Preparation Guide

A well-crafted research proposal outlines the objectives, methodology, and significance of a project, serving as the foundation for securing support and funding. This guide provides practical steps and essential components to help researchers effectively communicate their ideas, demonstrate the feasibility of their research, and present their work in a way that resonates with evaluators.

1. Read the Funding Agencies' Priority Research Areas: When preparing a research proposal, it's crucial to understand the priority research areas of funding agencies. These agencies provide financial support to research projects and typically focus on specific themes or topics that align with their objectives. By reading and understanding these priority areas, researchers can tailor their proposals to meet the expectations and interests of the funding organizations, increasing the likelihood of receiving support.

✓ Government Agencies

Government agencies are national bodies that provide financial support for research in areas aligned with national policies, public interests, or developmental goals. They often prioritize research that can benefit the public, address pressing social issues, or advance scientific and technological innovation.

- a. National Institutes of Health (NIH)** in the United States funds biomedical research, with priorities in public health, disease prevention, and healthcare solutions.
- b. European Commission (Horizon 2020)** supports research and innovation across various fields, with a focus on addressing societal challenges such as climate change, clean energy, and health.
- c. Department of Science and Technology (DOST)** in the Philippines provides grants for research in fields like agriculture, disaster resilience, and biotechnology, aligning with national priorities such as environmental sustainability and economic development.
- d. Philippine Council for Health Research and Development (PCHRD)**, a DOST agency, supports research related to health, with priorities on public health issues like infectious diseases and maternal care.

✓ **University**

Many universities offer internal funding opportunities to support research projects, often focused on advancing knowledge within specific academic disciplines or institutional priorities. These funds help encourage innovative research, foster academic collaboration, and enhance the university's reputation.

- a. **Harvard University's Office of Sponsored Programs** provides internal funding for faculty and student projects, prioritizing research that advances knowledge in various fields including medicine, engineering, and social sciences.
- b. **De La Salle University (DLSU)** offers internal research funding for faculty and students, with a focus on areas like sustainable development, health research, and education. DLSU encourages interdisciplinary projects and those that contribute to national and global solutions.
- c. **University of the Philippines (UP)** provides various research grants through its Office of the Vice President for Academic Affairs (OVPA), prioritizing areas like climate change, health research, and disaster risk reduction.

✓ **Charitable Foundations**

Charitable foundations fund research that addresses global challenges, often focusing on social impact, health, poverty alleviation, and education. These foundations provide grants to research projects that aim to improve the quality of life for vulnerable populations or solve large-scale social issues.

- a. **Bill & Melinda Gates Foundation** focuses on global health, poverty alleviation, and education. Their research funding priorities include the development of vaccines, maternal health, and education in low-income countries.
- b. **Wellcome Trust** funds research aimed at improving global health, with a particular emphasis on infectious diseases, mental health, and biomedical innovations.
- c. **The Ramon Magsaysay Foundation** offers grants for research and projects aimed at improving governance, leadership, and social development, particularly for marginalized communities.
- d. **The Gokongwei Brothers Foundation** supports research in education and social entrepreneurship, with a focus on improving the quality of education and providing sustainable solutions for Filipino communities.

✓ **International Organizations**

International organizations, such as those operating at the United Nations level, provide funding for research that addresses global challenges. These organizations often focus on issues like sustainable development, peace and security, public health, and environmental conservation.

- a. **United Nations Development Programme (UNDP)** funds research related to sustainable development, poverty reduction, and climate change. Their funding priorities include projects that contribute to achieving the UN's Sustainable Development Goals (SDGs).
- b. **World Health Organization (WHO)** supports global health research, particularly on infectious diseases, pandemics, and universal health coverage.
- c. **Asian Development Bank (ADB)** provides funding for research projects that address economic development, environmental sustainability, and poverty reduction in the Asia-Pacific region.
- d. **World Bank** offers funding for research projects in the Philippines that aim to improve infrastructure, education, and public health systems, supporting the country's development agenda.

✓ **Businesses**

Many private companies and businesses invest in research, particularly if it leads to innovations or solutions that benefit their industry. Businesses are motivated by the potential for new products, improved efficiency, or competitive advantage. These organizations tend to fund research that can result in commercial applications or technological advancements.

- a. **Google** funds research in areas such as artificial intelligence, machine learning, and data science, often through its Google Research division, which prioritizes projects that have practical applications in technology and the digital economy.
- b. **Pharmaceutical companies** like **Pfizer** fund clinical research, particularly in the development of new drugs and vaccines. Research into new treatments for diseases like cancer or COVID-19 is a key priority.
- c. **San Miguel Corporation** funds research related to food production, environmental sustainability, and renewable energy. Their focus areas include improving agricultural practices and reducing environmental impact.
- d. **Globe Telecom** funds research in technology, focusing on digital innovation, connectivity, and telecommunications infrastructure

development, which contributes to the growth of the digital economy in the Philippines.

✓ **Individuals**

Some individuals, especially philanthropists or entrepreneurs, may choose to fund specific research projects. These individual donors may fund research aligned with their personal values, interests, or passion areas. Such funding sources can be highly flexible and support a diverse range of topics.

- a. **Elon Musk** has funded various research projects, including those focused on space exploration through SpaceX, sustainable energy through Tesla, and artificial intelligence through the OpenAI initiative. His funding tends to support projects with the potential to change the future of technology and society.
- b. **Mark Zuckerberg and Priscilla Chan** established the **Chan Zuckerberg Initiative**, which funds biomedical research and education, particularly projects that aim to cure diseases like cancer and Alzheimer's.
- c. **Henry Sy Foundation** funds research and development in the areas of education, healthcare, and social enterprise. The foundation has supported educational programs and research initiatives that benefit underprivileged communities in the Philippines.
- d. **Manuel V. Pangilinan Foundation** provides funding for research projects in the fields of healthcare, education, and community development, aiming to improve the lives of Filipinos, especially in rural areas.

Funding agencies, whether governmental, charitable, academic, or private, provide essential financial support for research projects. These agencies prioritize research that aligns with their goals, such as advancing public health, improving education, driving technological innovation, or addressing societal challenges.

Researchers should carefully read and understand the priority areas of these agencies, ensuring their proposals meet the expectations and contribute to the goals of the funding bodies. Understanding these funding sources is critical to successfully securing financial support for your research initiatives.

2. Communicate Your Proposal Presentation Effectively and with Clarity:

When preparing a research proposal, one of the most critical aspects is ensuring that the proposal is communicated effectively and with clarity. A well-structured proposal not only presents your research idea but also communicates all the essential details that will help reviewers understand the scope, significance, and potential impact of your work.

✓ Communicating the Problem to Be Addressed

A successful research proposal must start by clearly stating the problem you aim to address. This involves articulating why the research is needed and the issues it seeks to solve. It is essential to explain the significance of the problem in a way that resonates with the funding agency or audience, as it establishes the context of the research and helps to engage their interest.

Example: If your research focuses on improving public health systems, you might present the problem as follows: "Despite advancements in medical treatments, access to healthcare remains a challenge for rural communities in developing countries. This research aims to identify the barriers preventing healthcare access and propose innovative solutions to improve service delivery in underserved areas."

✓ What You Want to Accomplish?

The proposal must clearly define what you want to accomplish with the research. This means articulating the research goals and objectives that will directly address the identified problem. The goals should be specific, measurable, achievable, relevant, and time-bound (SMART), which helps to show the feasibility and importance of the project.

Example: Building on the previous example, the goal could be: "The research will investigate existing healthcare systems in rural areas, analyze barriers to access, and develop a framework for mobile health clinics to enhance service delivery."

✓ Why You Want to Accomplish It?

You must clearly communicate why you want to accomplish the research. This is often framed in terms of the potential impact of the research and why it matters. Address the broader significance of the project, including

how it can contribute to advancing knowledge, solving societal issues, or filling knowledge gaps.

Example: In the context of the rural healthcare project, you might explain: "This research aims to improve health outcomes by increasing healthcare accessibility, which will ultimately reduce mortality rates and improve quality of life for rural populations."

✓ **The Resources Required**

A key part of your research proposal is explaining what resources are needed to accomplish the research. These resources can include funding, equipment, personnel, and time. Providing a detailed breakdown of required resources shows that the project is well-planned and realistic, and helps funders assess the feasibility of the proposal.

Example: "The project will require funding for the development of a mobile clinic prototype, salaries for healthcare personnel and technology experts, and infrastructure costs for setting up the clinics in rural areas."

✓ **When the Activities Will Be Performed?**

Timing is essential in any research proposal. Clearly outlining when the research activities will take place demonstrates that the project is organized and achievable within the required timeframe. Typically, research timelines are broken into phases, each with a set start and end date, which helps ensure that the project stays on track.

Example: "The research will be conducted over a 12-month period. The first three months will involve site selection and planning, followed by prototype development and pilot testing during months four to six. Full deployment and data collection will take place during the final six months."

When preparing a research proposal, it's crucial to address several key questions that demonstrate the clarity and significance of your research. These guide questions help structure your proposal in a way that ensures it is compelling, well-founded, and clearly communicates its value.

1. Does it clearly motivate and clearly formulate the research question?

A well-crafted research proposal begins by clearly motivating the research question. This means explaining the importance of the issue you are addressing and why it matters in a larger context. A well-defined research question is at the core of any proposal—it should be specific, researchable, and feasible. It's important to establish the gap in knowledge or a problem that needs solving. Without a clear and compelling research question, the rest of the proposal will lack focus and clarity.

Example: If your research focuses on improving education in rural areas, a clear research question might be: "How can digital learning platforms be adapted to improve access to quality education for students in remote rural areas?" This question is specific (digital learning platforms in rural education), researchable (it can be studied through data collection and analysis), and addresses a gap in existing educational access.

Motivating the research question ensures that your audience understands why this topic is significant and why it warrants investigation. This step lays the foundation for the entire proposal.

2. Does it outline the current knowledge of the problem domain, as well as the state of existing solutions?

To effectively present your research, it's essential to provide a literature review or background that outlines the current knowledge of the problem domain. This includes summarizing the existing research, theories, models, and solutions that have been explored related to the topic. Understanding the current state of knowledge allows you to show how your research fits within this context and how it can add value or advance the field. It also helps identify gaps in the literature that your research can address.

Example: In the case of digital learning platforms for rural areas, the literature review might highlight existing solutions like online courses or mobile apps designed for education. You could then mention their shortcomings, such as limited access to electricity or low internet connectivity in rural areas, and how these issues impede the full effectiveness of these solutions.

Outlining existing knowledge provides a foundation for your research question and demonstrates your understanding of the field. It also shows that your project is building upon existing work rather than duplicating previous efforts. It's crucial

for demonstrating why your research is relevant and how it can address existing limitations.

3. Does it point out the contributions of the applicant to the problem solution?

Your research proposal must clearly highlight your contributions to solving the identified problem. This is where you need to articulate your unique perspective, experience, and expertise in tackling the research question. Funders and reviewers will want to know why you, as the applicant, are the best person to undertake this research. This may involve describing your previous work, your knowledge in the area, or how your approach is innovative compared to others.

Example: If you have prior experience developing educational technologies for remote areas or have a background in both education and technology, you could say: "With my background in educational technology development and fieldwork in rural schools, I am uniquely positioned to adapt digital learning solutions that account for the technological and infrastructure limitations faced by rural students."

Pointing out your contributions demonstrates your competence and expertise, which strengthens the credibility of your proposal. It shows the reviewers that you are well-qualified to conduct the research and have the necessary skills to make meaningful contributions.

4. Does it state in what aspects the suggested solution will be different, new, or better compared to existing approaches to the problem?

A strong research proposal does more than just repeat existing knowledge—it presents a new or better solution. It is critical to explain how your research or approach is distinct from or improves upon existing solutions. This could involve a novel methodology, new technology, or an innovative approach that addresses gaps or limitations in current solutions. This helps reviewers understand the potential impact of your research and why it's worth pursuing.

Example: Continuing with the rural education example, you could argue: "While current digital learning platforms in rural areas primarily focus on content delivery, our solution will integrate offline accessibility, interactive feedback, and localized curriculum tailored to the specific cultural and educational needs of rural

students. This new approach overcomes connectivity issues and ensures that the content is contextually relevant.”

Clearly stating how your solution is different or better shows the innovative nature of your research. It demonstrates that your research is not just repeating what has already been done, but is offering a unique and valuable contribution to the field. This also sets your proposal apart from others and increases the likelihood that it will be funded.

When preparing a research proposal, one of the key sections is clearly stating the outputs of the research. Outputs are the tangible results or deliverables that emerge from the research process. These outputs help demonstrate the potential impact and contributions of the research. They also act as milestones or markers for the success of the project. A well-structured proposal should list the planned outputs in a clear and organized manner.

a. Scientific Publications

Scientific publications are one of the most common and highly regarded outputs of research. These publications typically take the form of peer-reviewed articles or papers in academic journals and conferences. A publication signifies that the research has contributed new knowledge to the field and has been validated by experts. Research findings may be disseminated through multiple articles depending on the scope of the project.

Example: A researcher studying the impact of climate change on marine biodiversity may aim to publish articles in journals such as Marine Biology or Environmental Research Letters. These publications might include findings on the effects of rising ocean temperatures on coral reefs or how changing migration patterns of marine species are related to climate shifts.

Publishing in scientific journals is essential for establishing credibility and contributing to the broader scientific community's understanding of a topic. It also opens up opportunities for collaboration and further research.

b. Databases

A database is a structured collection of data that has been gathered or generated through the research process. These databases can be used by other researchers to analyze data, replicate results, or explore new research questions.

Databases are particularly important for fields such as genomics, environmental science, or social sciences where large amounts of data are collected.

Example: A researcher in genetics might create a publicly accessible database of genetic sequences related to a particular disease. The database could be used by other researchers to identify genetic markers or track disease progression across different populations.

Databases provide valuable resources for other researchers, enhancing the reproducibility of studies and fostering open science.

c. Reports

Reports are comprehensive documents that outline the findings, methodologies, and conclusions of the research. Reports are often delivered to stakeholders, such as funding agencies, policy-makers, or the general public. Reports can also be internal documents used for monitoring progress in long-term research projects.

Example: In a study about rural healthcare accessibility, the research team might prepare a final report detailing the findings about healthcare access in underserved areas, recommended policies, and suggested interventions. This report could be submitted to a government health department or a nonprofit organization.

Reports are essential for summarizing research and making it accessible to non-specialist audiences, such as policymakers, educators, or the general public. They ensure that research results can be applied in real-world contexts.

d. Tools

In some research projects, researchers develop tools to assist in solving specific problems or to make complex processes more efficient. These tools can be software, hardware, or methodological tools that serve as instruments for data collection, analysis, or implementation of new processes.

Example: A team developing a new software tool to analyze large-scale climate data may create an easy-to-use application that allows other researchers to visualize and interpret weather patterns in a more user-friendly manner.

Tools can have a broad impact, as they may be adopted by other researchers in the field or even lead to new commercial applications.

e. Prototypes

Prototypes are early models or representations of new products, technologies, or systems that are developed as part of the research. Prototypes serve as a proof of concept for a new idea or invention and are often the first step before a full-scale product is created.

Example: In an engineering study to improve solar panel efficiency, the research team might develop a prototype of a new solar panel design that incorporates innovative materials or technologies. This prototype can be tested to evaluate its performance and scalability.

Prototypes help demonstrate the practicality and feasibility of new inventions or designs. They allow researchers and developers to identify potential issues before moving to large-scale production.

f. Patents

Patents are legal protections granted for new inventions or processes that provide a novel solution to a problem. Research that results in new technologies, methodologies, or products can lead to patents, which protect intellectual property and encourage innovation.

Example: A researcher developing a new drug delivery system may file a patent for their innovative method of administering medication through the skin, which could improve the efficiency and effectiveness of treatment for chronic diseases.

Patents protect the commercial value of new innovations, ensuring that the creators have exclusive rights to their inventions. Patents also stimulate further investment and development in research fields.

g. Methodologies

Methodologies refer to the systematic approaches or techniques that researchers use to conduct their investigations. Developing and sharing new methodologies can contribute to the field by offering better ways to collect data, analyze results, or solve problems.

Example: In a study on human behavior, the researcher might develop a new survey method that more accurately measures emotional responses to certain stimuli. This methodology could be adopted by other researchers in the field of psychology.

New methodologies can improve the quality and reliability of research findings. They may offer more efficient or accurate ways of addressing research questions, leading to more reliable results.

h. Organized Meetings, Workshops

Meetings and workshops are organized gatherings where researchers, stakeholders, and practitioners come together to share knowledge, discuss findings, and collaborate on future research. These events allow for the dissemination of research outputs and the exchange of ideas with a broader audience.

Example: A researcher might organize a workshop on the implementation of renewable energy solutions in urban settings. The workshop could bring together experts, urban planners, and policymakers to discuss the research findings and their implications for real-world energy strategies.

Workshops and meetings provide a platform for collaboration and networking, enabling researchers to share insights and engage with others who can contribute to the advancement of the field.

i. Conferences

Conferences are formal gatherings of experts in a particular field, where researchers present their findings, share knowledge, and discuss new developments. Conferences allow researchers to receive feedback from peers, network with other professionals, and stay up-to-date on the latest advancements.

Example: A scientist researching cancer treatments may present their findings at an international cancer research conference, where they can discuss their new therapeutic approach and receive feedback from global experts in oncology.

Conferences are vital for disseminating research to a wider audience, fostering collaboration, and obtaining valuable feedback. Presenting at conferences can also enhance a researcher's visibility and career opportunities.

In a research proposal, clearly stating the planned outputs is essential for demonstrating the potential impact and significance of the research. These outputs—such as scientific publications, databases, reports, tools, prototypes, patents, methodologies, workshops, and conferences—are tangible deliverables that show how the research will contribute to advancing knowledge and solving real-world problems. Listing these outputs helps funding agencies and stakeholders understand the practical applications of the research and the long-term benefits it will bring.

When preparing a research proposal, effective communication is crucial to ensure that the evaluation panel fully understands the significance, scope, and potential impact of your research. A well-organized proposal, with clarity in presenting each section, increases your chances of securing support for the project.

a. Title

The title of your research proposal is the first impression that the evaluator will have of your project. It should briefly and rigorously summarize the essence of the project while also being informative and catchy. A good title helps set the stage for your proposal by clearly stating the topic, and ideally, it should make the reader interested in learning more. Sometimes, using an acronym (identifier) can make the title easier to remember and refer to, particularly for long-term or multi-phase projects. A strong title will help grab the reader's attention, making them more inclined to read further and take your proposal seriously.

Example: MDCCVP (Monitoring Diseases of Cultivated Crop Varieties in the Philippines). SARAI (Smarter Approaches to Reinvigorate Agriculture as an Industry in the Philippines).

An acronym or a well-crafted title can set a positive tone for the entire proposal, helping you stand out from other research submissions.

b. Summary

The summary is one of the first sections that evaluators read, and its purpose is to give a brief, clear overview of the research project. It is essential that this section is concise, yet informative. In just a few sentences, the summary should address the following points:

- ✓ **What research problem you are addressing (1-2 sentences).** This establishes the research context and provides the main issue you aim to solve.
- ✓ **Why it is important (1-2 sentences).** This is the rationale for why the research is necessary and its relevance to the field.
- ✓ **How you will do it (3-4 sentences).** Summarize your methodology in a few sentences. Explain the key steps and approach you will use to address the problem.
- ✓ **The main contribution of your project (3-4 sentences).** Clarify what new knowledge or innovations the research will bring to the field and how it will advance existing work.
- ✓ **The importance and impact of the contributions (1-2 sentences).** Summarize the broader impact of your research, including potential societal, economic, or environmental benefits.
- ✓ **The nature of your work/institute.** Mention any relevant expertise or capabilities of the institution conducting the research

The summary should be direct and to the point while maintaining a tone that highlights the significance and impact of your work.

Example: This project aims to develop a new, cost-effective method for purifying drinking water in rural communities, focusing on the use of local, sustainable materials. Given the high levels of water contamination in these areas, this research could significantly reduce waterborne diseases, improving public health and quality of life. The methodology combines field testing with laboratory analysis to ensure both effectiveness and feasibility. The expected outcome is a sustainable filtration system that can be replicated globally. This research will not only contribute to environmental sustainability but also improve public health in underserved communities.

c. Problem Statement

The problem statement clearly outlines the issue you intend to solve, setting the foundation for your research. It should be direct and to the point, ensuring that the evaluator immediately understands the problem's significance. If necessary, you

can present this section using a synthesis diagram that visually represents the problem, making it easier for the reader to grasp the scope and impact. This section is essential because it justifies the need for your research and explains why the problem must be addressed.

Example: Access to clean water in rural areas is a significant issue, as contaminated water is linked to a range of waterborne diseases. The lack of affordable filtration systems exacerbates this problem, leading to high mortality rates. This project aims to provide a solution by developing a water filtration system that uses locally sourced materials.

d. Objectives

The objectives section should clearly state the goals of your research. These objectives must be specific, measurable, and achievable. Provide context and justification for why each objective is relevant and how achieving these goals will impact the field. This section should directly relate to the problem statement and explain how meeting these objectives will address the identified issue.

Example: (1) Develop a water filtration system that uses inexpensive, locally available materials. (2) Test the system for effectiveness in eliminating contaminants in rural water sources. (3) Evaluate the feasibility of mass production and distribution in underserved communities.

Each objective should be relevant to the overarching goal of the research and show how it contributes to solving the problem.

e. Relevance to the Call

This section demonstrates that your research proposal aligns with the funding agency's priority research areas or call for proposals. It's essential to show that there is a match between the objectives of the call and those of your proposal. This section will demonstrate that you understand the funder's goals and that your project fits within their framework. Evaluators want to see that the research you propose is directly aligned with their interests and priorities, making it more likely to be funded.

Example: This proposal addresses the funder's call for innovative solutions to rural water access and environmental sustainability. Our project directly aligns with the goal of improving public health through affordable and sustainable technology. By

focusing on rural communities, this research fits within the funder's mandate to promote social and economic development in underserved areas.

A well-organized and clear research proposal is essential for effectively communicating the significance of your project. The title should summarize the research in an informative and engaging way, while the summary offers a concise overview of the problem, methods, and expected impact. The problem statement defines the research issue, and the objectives section outlines your goals. Finally, demonstrating relevance to the call ensures that your proposal aligns with the funder's priorities, increasing your chances of success. Clarity and structure throughout these sections are key to persuading evaluators that your research is worth supporting.

3. Demonstrate Scientific, Economic, and Social Impact of Your Research:

When preparing a research proposal, demonstrating the scientific, economic, and social impact of your research is crucial to convincing evaluators that your project is worth funding and supports the advancement of knowledge or practical solutions. The ability to effectively introduce the research topic and explain its significance to the reader is key.

✓ Is the Research New?

The novelty of your research is often the key selling point for a proposal. New research typically means either addressing an underexplored area, tackling an unresolved problem, or proposing a unique method or theory that has not yet been fully explored in the field.

For example, research into new materials for energy storage may involve developing an innovative battery design that significantly improves energy capacity and charging speed compared to current technologies. This could be considered new if no such technology exists or has been fully explored. The novelty of your research demonstrates its potential to bring fresh insights and approaches to a field.

✓ Is the Research Significant to the Field of Research?

A key element in demonstrating the scientific impact of your research is to show how it contributes to or advances the field. Significance refers to the importance of the problem you're addressing, the current knowledge gaps, and how your research can fill those gaps.

For example, in the field of healthcare, a project on developing a vaccine for a previously untreatable viral disease would be significant as it addresses a critical public health issue. In contrast, an attempt to replicate existing research without offering new insights or improvements might not be as impactful, even if it has some merit.

In this case, the research's significance would be clear: it improves existing knowledge, advances disease prevention methods, and addresses a pressing healthcare problem. The proposal should explicitly articulate how the research adds value to the field and why it matters in a broader context.

✓ **Does it Point Out the Contributions of the Applicant to the Problem Solution?**

In your proposal, it is important to clearly explain how you, as the researcher, will contribute to solving the problem. Your contribution should be evident in both the research question you pose and the methods you intend to use. This will differentiate your proposal from others and highlight your unique qualifications to tackle the problem.

For example, in a climate change mitigation project, the applicant might contribute by developing new, more efficient solar panels, leveraging their expertise in material science. If the researcher has prior experience in the development of alternative energy technologies, this background will strengthen their position as someone capable of making meaningful contributions to solving the problem of energy sustainability.

In other words, explain why you and your team are uniquely qualified to solve the problem, including any past work, collaborations, or expertise that aligns with the research objectives. This adds credibility and underscores the potential for success.

✓ **Does It Improve or Contribute to Improving the Economy or the Lives of People?**

A powerful way to demonstrate the economic and social impact of your research is to link it to real-world benefits. This could mean improving lives, addressing societal challenges, or even contributing to economic growth. The broader social and economic benefits are often key drivers for funding, as

research that improves quality of life or solves societal problems is often prioritized.

For instance, research aimed at addressing food insecurity in developing countries through the development of drought-resistant crops could have profound social and economic impacts. The research would not only contribute to food security but could also stimulate the local economy by increasing agricultural productivity and reducing the costs of food imports.

Another example is healthcare research aimed at reducing the costs of treatment for chronic diseases. A study that proposes a new, cost-effective method for managing diabetes could have direct economic benefits by reducing healthcare costs and improving the quality of life for millions of people affected by the disease.

When preparing a research proposal, it's essential to demonstrate that your research is original, impactful, and provides value to the scientific community and society.

✓ **Is it Original?**

Originality in research refers to the novelty of your idea, method, solution, or the problem you are addressing. For your proposal to stand out, it must introduce something that hasn't been done before, or take an innovative approach to an existing problem.

Example: If you are proposing research to develop a new drug delivery system that uses nanoparticles to target cancer cells more efficiently, this could be considered original if no one has previously demonstrated the exact approach or methodology you are suggesting. In this case, your research would introduce a new technique or process that hasn't been explored or fully realized before.

Originality is essential because it shows that you are advancing the state of knowledge, rather than replicating or reiterating work that has already been done. It also ensures your research will bring new insights and potentially solve problems that existing knowledge has not addressed.

✓ **Previously Unaddressed Problem?**

Research that tackles a previously unaddressed problem focuses on identifying gaps in current knowledge or unresolved issues. These are areas where no research or limited research has been conducted, and addressing them can lead to breakthroughs in understanding or practical applications.

Example: Consider research into a new method for recycling plastic waste in a way that doesn't require large amounts of energy or toxic chemicals. If prior research has focused on recycling plastic through traditional methods, but your approach introduces a more environmentally friendly and efficient way of recycling, this could be a previously unaddressed problem. No one has fully explored this specific, novel method, and your research could have significant implications for environmental sustainability.

Addressing such a problem can lead to significant advancements in science and society because it fills a gap in the existing body of knowledge and responds to real-world needs. Your research may also help set the foundation for future studies and innovations.

✓ **Better Methodology to a Previously Addressed but Unsolved Topic (With Room for Improvement)**

In many cases, certain problems have been researched extensively, but solutions remain elusive. However, there may still be room for improvement in the existing methodologies. Proposing a better methodology to a previously addressed but unsolved problem means identifying weaknesses in current approaches and offering a more effective way to address them.

Example: In the field of cancer detection, there may already be methods such as MRI or CT scans that are commonly used to detect tumors. However, these methods may be expensive, have limitations in early detection, or have lower accuracy. If you propose an innovative AI-based diagnostic tool that uses more accurate image processing and machine learning algorithms to identify cancerous cells earlier and more accurately, you are offering a better methodology to an existing problem.

Even though the problem (cancer detection) has been addressed before, your proposal offers an improvement in the methodology, which can

have a profound impact on early detection rates, leading to better patient outcomes and potentially lower healthcare costs.

✓ **Better Methodology to a Problem with a Known Solution**

In some cases, there are problems for which solutions are known, but these solutions may have limitations, such as inefficiency, high cost, or limited scalability. Improving a known solution by offering a better methodology can be just as impactful as addressing a new problem.

Example: Take the example of solar energy systems, which are widely considered to be a solution for reducing fossil fuel dependence. However, the cost and efficiency of solar panels are still barriers to widespread adoption. If your research proposes a new, more affordable material for solar panels that increases their energy efficiency and reduces manufacturing costs, you are offering a better methodology to a problem with a known solution.

While solar energy has been widely researched and implemented, your research could make this solution more accessible, scalable, and cost-effective, which would contribute to greater adoption of renewable energy and have lasting impacts on the economy and the environment.

✓ **The Idea Should Have an Impact on Science and/or Society**

Lastly, your research should have a broader impact—either scientific or societal—meaning it should not only advance knowledge in your field but also improve real-world conditions. This could include contributing to solving pressing global challenges, improving people's quality of life, or creating new technologies that benefit society.

Example: A social science research project aimed at understanding the impact of remote work on productivity and mental health could have a significant societal impact, especially in light of the ongoing effects of the COVID-19 pandemic. This research could inform policies that improve work-life balance, guide employers on creating healthier work environments, and shape future discussions about the future of work.

In environmental science, a project focused on developing cost-effective solutions for water purification could drastically improve access to clean drinking water in regions with limited resources, directly improving the quality of life and health of underserved communities. This type of research

combines scientific innovation with tangible social impact, demonstrating its broad relevance and importance.

When preparing a research proposal, generating innovative and relevant ideas is crucial. There are many sources you can turn to for inspiration, guidance, and practical approaches to identify compelling research questions and projects. Below, we will explore various places and strategies where you can find research ideas, along with examples of how each source can contribute to the development of your research.

1. Your Own Background and Experiences

One of the most valuable sources of research ideas is your own personal background and experiences. Your academic training, professional work, hobbies, and personal experiences can all inspire research questions that are relevant and meaningful. This source draws from what you already know or have encountered in your life, making the ideas more authentic and connected to your skills.

Example: If you have a background in agriculture and have worked in a rural community, you might have noticed the challenges farmers face with irrigation systems in water-scarce areas. This could lead to a research idea focused on developing low-cost, sustainable irrigation technologies that use recycled materials or solar power. Your own experiences and knowledge of these challenges would make your research both relevant and impactful to those facing similar issues.

2. Brainstorming with Your Colleagues (Collaborators)

Collaborating and brainstorming with colleagues or other researchers is another effective way to generate research ideas. They bring diverse perspectives, expertise, and creative insights that you may not have considered on your own. Working with others can also help refine your ideas and provide constructive feedback on their feasibility and significance.

Example: In a biotechnology research group, you may brainstorm with a colleague from a different subfield, such as genetic engineering, and identify an interesting research problem related to gene editing technology. Through brainstorming, you could jointly decide to explore new applications of gene editing in crop improvement to create drought-resistant plants. The

collaboration may help refine the research focus and identify new angles that you might not have thought of working alone.

3. Research Agendas (From Your Institution, Funding Agencies, etc.) or Literature Reviews

Many institutions, funding agencies, and organizations publish research agendas that outline their key areas of interest and the types of research they are seeking to fund. These agendas can provide you with valuable insights into the current priorities within specific fields. Additionally, literature reviews are an excellent resource for identifying trends and gaps in existing research.

Example: The National Institutes of Health (NIH) may have a research agenda focused on rare genetic diseases. By aligning your research proposal with their priorities, such as studying genetic mutations that lead to specific rare diseases, you can position your research within an area that has clear funding opportunities. Reviewing existing literature on the topic also helps identify gaps, such as a lack of effective diagnostic tools for those diseases, leading to a new research idea.

4. Research or Project Reports

Research and project reports—such as those produced by previous research teams, government agencies, or organizations—can offer valuable insights into ongoing issues, challenges, and findings. These reports often include data, conclusions, and recommendations for future research directions. Reading these reports can help you identify areas that still need further exploration.

Example: If you are interested in environmental science, you might come across a government report on climate change impacts on coastal regions. While the report outlines key issues, it may highlight the lack of research on coastal ecosystems' adaptation strategies. This could inspire a research proposal focused on developing predictive models for ecosystem shifts due to climate change.

5. Visions by Leading Researchers

Leading researchers in your field often share their visions for the future of the discipline in their papers, keynote speeches, and interviews. These thought leaders may highlight emerging trends, technology advancements, or challenges that can provide inspiration for your own research.

Example: A pioneering researcher in artificial intelligence (AI) might present a vision for the future of AI in healthcare, discussing how AI could revolutionize early disease detection and treatment. This vision could inspire you to propose a research project focusing on AI-driven diagnostic tools for rare cancers, a promising area of future research.

6. Topics in Conferences That Are Applicable to Your Field

Academic conferences often bring together experts from different areas of research, and the topics discussed at these conferences can provide a wealth of ideas. Attending these events allows you to hear about the latest developments and unmet needs in your field.

Example: At a conference on renewable energy, you might hear discussions on energy storage solutions for solar and wind power. One of the sessions may discuss the limitations of current storage technologies and the need for new, more efficient solutions. This could lead you to propose research on innovative battery materials to improve the efficiency and longevity of energy storage systems.

7. "Conclusions and Future Works" Sections of Recent Good Papers

Many high-quality research papers include a "Conclusions and Future Works" section where the authors summarize their findings and suggest areas for further research. These sections are an excellent resource for identifying open questions or areas that require additional investigation.

Example: If you're reviewing a recent paper on autonomous vehicles, the "Future Works" section may suggest further research into improving the safety of self-driving cars in urban environments. This could inspire you to propose a project on advancing autonomous vehicle sensor technology to improve real-time decision-making in complex urban traffic scenarios.

8. Funding Agencies Programs and Research Priorities

Funding agencies, such as government bodies, charitable organizations, or international foundations, often publish programs and research priorities that outline the areas they are most interested in funding. By reviewing these programs, you can tailor your research ideas to align with their priorities and improve your chances of securing funding.

Example: The European Commission's Horizon Europe funding program may prioritize research on green technologies and climate change. If your research interests align with this priority, you could propose a project on developing more efficient renewable energy sources, such as advanced wind turbines or solar panels. Aligning your proposal with the priorities of such a funding program increases the likelihood of receiving support.

There are many places to look for research ideas, and the best proposals often emerge from a combination of sources. Drawing on your personal experiences, collaborating with colleagues, reviewing literature, analyzing reports, and keeping an eye on research agendas and funding priorities will allow you to generate a range of creative and impactful ideas. By combining these sources of inspiration, you can position your research to address real-world problems, contribute to scientific progress, and attract support from funding agencies.

A research question is the foundational element of any research project, guiding the study's focus, design, and methodology. The formulation of a research question is critical to the overall success of the project, as it helps define the scope of the research, aligns with the objectives, and ensures that the study remains relevant and feasible.

✓ **Relevant**

A research question must be relevant to the field of study, ensuring that the project addresses problems or issues that are of significant importance to the discipline. The question should relate to current challenges, gaps, or needs within the field, providing the basis for meaningful investigation. A relevant question also aligns with the research priorities of the funding agency or academic institution, increasing the likelihood of support.

Example: In the field of public health, a relevant research question could be, "What are the factors contributing to vaccine hesitancy among urban populations?" This question is relevant because it addresses a pressing public health issue, particularly in light of global vaccine distribution challenges and concerns about immunization rates.

✓ **Important**

A good research question must be important, meaning it addresses a key problem that requires exploration. The question should contribute to advancing knowledge, solving significant challenges, or filling gaps in existing research. It's important for the question to have broader implications for the field or society at large, whether in terms of practical applications, theoretical development, or policy influence.

Example: In environmental science, an important research question could be, "How does the rise in global temperatures affect the migration patterns of marine species?" This question is important because understanding the impact of climate change on biodiversity and ecosystem stability can help inform conservation strategies and policy-making efforts worldwide.

✓ **Clear**

The research question should be clear, meaning it is stated in unambiguous, straightforward language. It must avoid vagueness, ensuring that the question can be easily understood by the researcher, reviewers, and other stakeholders. Clarity in formulation helps establish a clear path for investigation and minimizes the risk of misinterpretation.

Example: A clear research question might be, "What is the effect of online learning on the academic performance of high school students during the COVID-19 pandemic?" The question is precise in its scope (online learning, academic performance, high school students, and COVID-19) and is easily understandable without any confusing terminology.

✓ **Precise**

A precise research question specifies exactly what is being investigated, leaving little room for ambiguity. It should be narrow enough to be manageable but broad enough to allow for meaningful exploration. Precision ensures that the study remains focused and does not wander into unrelated topics.

Example: A precise research question in the field of artificial intelligence (AI) might be, "How does the use of convolutional neural networks (CNNs) improve image classification accuracy in medical diagnostics compared to traditional machine learning models?" This question is specific

about the type of AI technique (CNNs), the application (image classification), and the comparison (with traditional models).

✓ **Researchable**

A researchable question is one that can be answered through the collection and analysis of data, whether qualitative or quantitative. It assumes that the necessary information, data, or sources to answer the question are available or accessible, or that the researcher can generate the required data through methods such as surveys, experiments, or case studies.

Example: In the field of psychology, a researchable question could be, "Does regular mindfulness meditation improve stress management among college students?" This question is researchable because data can be collected through controlled experiments or surveys, measuring stress levels before and after a set period of mindfulness practice.

These characteristics ensure that the research will contribute meaningful insights to the field, be easily understood and focused, and can be answered through available data. As researchers, it's essential to refine and focus our research questions to ensure they meet these criteria, setting the foundation for a successful research proposal or project. By addressing these aspects, researchers can create projects that have real-world applications, fill gaps in knowledge, and offer potential solutions to existing problems.

When preparing a research proposal, it is essential to demonstrate the scientific, economic, and social impacts of the research. These impacts reflect how the research will contribute to advancing knowledge, solving practical problems, and benefiting society as a whole. Research can be classified into pure research, applied research, and hybrid research, each contributing to scientific progress and societal development in different ways.

✓ **Pure Research (Basic or Fundamental Research)**

Pure research, also known as basic or fundamental research, is focused on increasing our understanding of the core principles of science without necessarily considering immediate practical applications. It aims to explain the fundamental mechanisms of how the world works and generate new theories or principles. While pure research may not always provide immediate commercial or societal benefits, it is crucial because it lays the groundwork for future advancements.

- a. **Scientific Impact:** The primary scientific impact of pure research is its contribution to the expansion of knowledge and theory. For instance, Albert Einstein's theory of relativity was a purely theoretical pursuit that revolutionized our understanding of space, time, and gravity. This research did not have immediate practical applications, but it became foundational to later scientific advancements in fields like astrophysics, quantum mechanics, and GPS technology.
- b. **Economic Impact:** Although the immediate economic impact may not be apparent, pure research eventually leads to innovations that can be commercially beneficial. For example, research in quantum mechanics laid the groundwork for technologies such as semiconductors and transistors, which power modern electronics. The economic benefits of these innovations have been immense, driving the technology industry and creating billions of dollars in value.
- c. **Social Impact:** On a societal level, pure research contributes by enhancing the collective understanding of complex issues and inspiring future applications. A clear example is genetic research, which initially focused on understanding the fundamental principles of genetics. This has led to breakthroughs in medicine, such as gene therapy and personalized medicine, which have the potential to transform healthcare and improve public health outcomes.

✓ **Applied Research**

Applied research involves the practical application of scientific knowledge to address real-world problems. This type of research is aimed at solving specific, often immediate, issues and may lead to commercial benefits. The focus is on finding solutions to known problems rather than generating new theories. Applied research takes the principles discovered in pure research and applies them in practical, often innovative ways.

- a. Scientific Impact:** Applied research has a direct scientific impact because it transforms theoretical knowledge into real-world solutions. For example, epidemiological models are used in applied research to understand how diseases spread and to design strategies for disease control. A specific application of this is the development of models for pest control in agriculture. Researchers use epidemiology to predict and manage pest outbreaks in crops, like corn fields, helping to improve food production and reduce crop loss.
- b. Economic Impact:** Applied research often leads to the development of new technologies, products, or services, which can generate significant commercial benefits. For example, software development is an applied research field that continually creates new tools to address various tasks. The development of new programming languages tailored to specific applications (such as data analysis, machine learning, or web development) has significant commercial value, providing businesses with more efficient and specialized tools to meet their needs.
- c. Social Impact:** Applied research has a direct impact on society by improving quality of life and solving pressing societal issues. An example is the research in renewable energy technologies like solar panels or wind turbines, which not only addresses the global challenge of reducing carbon emissions but also promotes sustainability, job creation, and energy access in underserved areas.

✓ **Hybrid Research**

Hybrid research combines both pure research and applied research, leveraging the strengths of both to produce practical solutions based on foundational knowledge. Hybrid research involves investigating fundamental scientific principles and simultaneously applying them to solve real-world problems. This type of research is valuable because it balances theoretical exploration with practical application, leading to innovations that are both scientifically grounded and capable of addressing real-world challenges.

- a. Scientific Impact:** Hybrid research is impactful because it expands fundamental knowledge while addressing specific practical challenges. For example, research on artificial intelligence (AI) involves deep theoretical work in computer science, algorithms, and machine learning models (pure research). At the same time, it is applied to real-world problems like medical diagnostics, autonomous vehicles, and predictive analytics. This

combination of theory and practice leads to both new scientific understanding and practical, transformative applications.

- b. Economic Impact:** Hybrid research has significant economic implications because it bridges the gap between theoretical advancements and commercial applications. For example, biotechnology research often operates in this hybrid space. Researchers may explore basic principles of cell biology or genetic modification (pure research) while simultaneously applying these principles to develop new drugs, therapies, or agricultural solutions (applied research). This results in both scientific breakthroughs and economically viable products or services that can improve public health or create new markets.
- c. Social Impact:** Hybrid research can have a profound social impact by providing solutions to major societal problems. A prominent example is the development of vaccines. The foundational research on viruses, immune responses, and vaccine development (pure research) is then applied to create vaccines that can prevent diseases like measles, polio, or COVID-19. This research not only advances scientific knowledge but directly benefits society by improving public health, reducing mortality rates, and promoting social well-being.

The impact of research, whether pure, applied, or hybrid, is profound and multifaceted. Pure research expands our understanding of the fundamental principles of science, which can later be used to drive technological and social innovations. Applied research takes existing knowledge and applies it to solve real-world problems, often with significant commercial and societal benefits. Hybrid research blends the best of both worlds, allowing for scientific exploration that directly addresses practical challenges, leading to innovations that benefit both science and society. By demonstrating the scientific, economic, and social impacts of your research, you can ensure that your proposal aligns with the broader goals of advancing knowledge and improving the world.

- 4. Prepare a Good Critical Coverage of the Related Literature:** When preparing a critical coverage of the related literature in a research proposal, it is essential to provide a clear and comprehensive overview of the existing body of work surrounding the problem domain you are investigating.

a. Outline the Current Knowledge of the Problem Domain

This refers to summarizing the existing theories, findings, and discussions surrounding the specific issue or field of study. **Example:** If you're researching AI in healthcare, you would review what has been done regarding AI for medical diagnoses, treatment recommendations, and the current limitations.

Example Sentence: "Current research in AI for healthcare reveals promising advances in diagnostic tools, such as deep learning models for identifying lung cancer in CT scans (Smith et al., 2022), but challenges remain in integrating these systems into clinical workflows (Jones et al., 2023)."

b. State of Existing Solutions

This involves detailing what existing solutions have been proposed or implemented and their strengths and weaknesses. **Example:** In the AI healthcare example, you might explain existing software solutions like IBM Watson for Healthcare, which offers diagnostic assistance, and the limitations in terms of accuracy and adaptability.

Example Sentence: "IBM Watson has made significant strides in cancer diagnostics, but its effectiveness remains limited by data diversity and training transparency, leading to variability in accuracy across different healthcare settings (Williams, 2021)."

c. Present Preliminary Ideas, Proposed Approach, and Results So Far

Provide an early glimpse into your approach to solving the problem and any preliminary data or ideas you've gathered. This shows the reader that you're not just beginning from scratch. **Example:** You might explain that you have tested a small-scale AI model with a dataset to identify patterns that current systems overlook, highlighting the success of your preliminary tests.

Example Sentence: "Preliminary experiments using a custom neural network trained on a broader dataset show a 15% improvement in diagnostic accuracy for melanoma detection compared to current methods."

d. Clarify the Differences and Novelty of Your Proposed Solution

It's important to explain how your approach differs from or improves upon existing solutions, emphasizing novelty and innovation. **Example:** Suppose your research explores AI in healthcare with a focus on personalized treatment

recommendations based on genetic data. You would outline how this differs from generic AI-based treatments.

Example Sentence: "While current AI healthcare models focus on diagnostic assistance, our proposed system integrates genetic profiling to provide personalized treatment recommendations, marking a significant departure from generalized diagnostic solutions (Smith et al., 2023)."

e. Demonstrate Feasibility and Capabilities

Provide evidence or justification that your proposed research is achievable. This could include initial results, methodology, or evidence that the necessary tools or data are available. **Example:** If you are researching a new AI algorithm, show that the necessary computational resources and data are available to you, or provide data from pilot studies or simulations.

Example Sentence: "Initial testing of our algorithm on a smaller, anonymized patient dataset has shown that it can identify anomalies with 90% precision, suggesting high feasibility for broader application."

f. Ensure You Are Not "Reinventing the Wheel"

Acknowledge the previous research that laid the foundation for your work, demonstrating that you're building upon existing knowledge rather than duplicating efforts. **Example:** Recognize key researchers who pioneered the field or developed core concepts related to your approach.

Example Sentence: "Our work builds upon the foundational principles established by Johnson (2018) in the area of AI-driven diagnostic algorithms, adapting their approach to a wider variety of medical conditions."

g. Give Credit to Those Who Have Laid the Groundwork

It's crucial to cite and acknowledge the contributions of previous researchers whose work you are using as a foundation. **Example:** If your research builds on a major study that introduced a new method or dataset, make sure to reference that.

Example Sentence: "The work of Kumar et al. (2020) on using convolutional neural networks (CNN) for medical imaging analysis provided the critical methodology from which our work was adapted."

h. Demonstrate Knowledge of the Research Problem

Show that you thoroughly understand the problem you are investigating. This involves familiarizing yourself with the scope, challenges, and the critical questions that remain unanswered. **Example:** If you're researching AI and healthcare, you should show that you understand the specific hurdles AI faces in clinical settings (e.g., ethical concerns, regulatory issues).

Example Sentence: "While AI systems have demonstrated high diagnostic accuracy, the integration of such systems into clinical settings remains hindered by ethical concerns, regulatory approval processes, and the need for transparency in decision-making (Adams, 2022)."

i. Understanding of Theoretical and Research Issues

Address the theoretical frameworks that underpin your research and how they relate to the problem you are investigating. **Example:** In the case of AI, you would describe how different machine learning models (e.g., supervised vs. unsupervised learning) relate to the research problem.

Example Sentence: "The theoretical framework for our research is based on the machine learning paradigm, specifically supervised learning, as it allows for the direct comparison of predicted outcomes to known results, making it well-suited for diagnostic tasks in healthcare."

j. Ability to Critically Evaluate Literature

It's essential to not only summarize existing research but to critically assess it—pointing out its strengths, weaknesses, and gaps. **Example:** A critical evaluation might show how a major study had methodological flaws, such as a limited sample size, which weakened its conclusions.

Example Sentence: "Although Zhang et al. (2021) found that deep learning models could predict heart disease with high accuracy, the study's small sample size and lack of demographic diversity limit the generalizability of their findings."

k. Integrate and Synthesize Existing Literature

Rather than simply summarizing studies, integrate them into a narrative that identifies patterns, debates, and themes that inform your research. **Example:** You might discuss how different approaches to AI in healthcare have evolved over the years and the controversies that have arisen.

Example Sentence: "While early studies focused on rule-based systems, more recent work (e.g., Lin et al., 2022) emphasizes the benefits of neural networks, yet disagreements remain about the best methods for data pre-processing."

I. Convince the Reader of Your Contribution

Your goal is to demonstrate how your research will address an important gap or issue in the field, thereby making a significant contribution. **Example:** If your research offers a solution that enhances existing technology or addresses an unexplored problem, make it clear why this matter.

Example Sentence: "Our proposed model will not only improve diagnostic accuracy but also provide a more interpretable framework, addressing one of the major limitations in current AI healthcare solutions—lack of transparency in decision-making."

COMMON PROBLEMS IN LITERATURE REVIEWS

A well-crafted literature review is crucial for any research project as it sets the context for the study, demonstrates familiarity with the field, and highlights gaps or opportunities for further investigation. However, many literature reviews fall short in various ways.



1. Lacking Organization and Structure

A poorly organized literature review lacks a clear structure, making it difficult for the reader to follow the argument or grasp the significance of the information being presented. The absence of logical flow can make the review feel disconnected and confusing. **Example:** A literature review that jumps from one topic to another without clear transitions or headings, such as starting with one theory, then switching to a methodology, then jumping back to a different theoretical framework, and without explaining the relationships between them.

Example Sentence: "In the first section, we discuss data processing techniques, followed by an unrelated analysis of clinical applications of AI, which doesn't link back to our main thesis."

2. Lacking Focus, Unity, and Coherence

A literature review should stay focused on the research problem, and each section or paragraph should contribute to the central argument or narrative. Without this focus, the review can seem fragmented or disjointed. **Example:** A literature review that presents a broad range of topics unrelated to the research question, including irrelevant studies or information that doesn't contribute directly to the main point.

Example Sentence: "While the impact of AI on education has been extensively discussed, this section should focus on healthcare, where AI applications show more immediate relevance."

3. Being Repetitive and Verbose

Repetition and verbosity make the literature review unnecessarily long and cumbersome. It can result in the same points or ideas being restated multiple times without adding new insight. **Example:** Repeating the same key points from multiple studies without offering any new analysis or synthesis, or using redundant phrases or long-winded explanations.

Example Sentence: "As several studies have shown, AI can be beneficial in healthcare, as it can improve efficiency. Efficiency is improved by AI because it can handle data much faster than humans. The speed of AI's data processing is a major factor in improving efficiency in healthcare."

4. Failing to Cite Influential Papers

Influential or seminal papers form the foundation of research in any field, and failing to cite these critical works can signal a lack of depth or awareness of key developments. **Example:** A review that discusses recent AI techniques in healthcare but fails to mention landmark studies or foundational papers like the seminal work on deep learning by LeCun et al. (2015) or early work on medical AI by Obermeyer et al. (2016).

Example Sentence: "While recent innovations in AI for healthcare have been widely recognized, we fail to mention the groundbreaking work of LeCun (2015), which introduced deep learning frameworks essential for many modern healthcare applications."

5. Failing to Keep Up with Recent Developments

A literature review must be current, reflecting the latest developments in the field. Failing to update the review with recent studies or findings can make it seem outdated or incomplete. **Example:** Citing studies from 2010 when there have been significant advancements in the field in the past few years. For example, a review on AI might mention older models without discussing new approaches like transformer-based architectures (e.g., GPT-3).

Example Sentence: "Despite the emergence of cutting-edge transformer models (Vaswani et al., 2017), the review continues to focus solely on traditional neural networks, thus missing out on the evolution of key technologies in the field."

6. Failing to Critically Evaluate Cited Papers

A literature review is not just a summary of existing research—it should also critically evaluate the strengths, weaknesses, and gaps in the literature. This allows you to highlight areas where further investigation is needed. **Example:** Simply summarizing the findings of studies without discussing their limitations or the methodological concerns they might have, such as a study's small sample size or biased data.

Example Sentence: "Smith (2018) found that AI improves diagnostic accuracy, but their study was limited by the small dataset used, and they didn't account for the diversity of patient demographics, which could affect the generalizability of their results."

7. Citing Irrelevant or Trivial References

Including sources that are not directly relevant to the research question or field can detract from the review's focus and credibility. It's important to only cite research that adds value to your review or helps to build the argument. **Example:** Citing a study on AI in retail when the focus is on healthcare, or referencing a trivial study that doesn't advance the discussion or theory.

Example Sentence: "Although studies on consumer behavior are interesting, they are not directly relevant to our investigation of AI's role in diagnosing diseases."

8. Depending Too Much on Secondary Sources

Relying heavily on secondary sources (i.e., reviews, summaries, or analyses of primary studies) rather than directly citing primary research papers can weaken the review's authority. Primary sources are more authoritative, as they report original findings. **Example:** Relying too much on one or two review articles to summarize entire areas of research, rather than directly referencing the primary research papers themselves.

Example Sentence: "Rather than directly analyzing the original studies on AI algorithms, the review mostly cites secondary sources like Johnson (2021) and Carter (2022), which themselves rely on secondary literature."

ADDRESSING COMMON ISSUES IN LITERATURE REVIEWS

- **Maintain Clear Organization:** Break the review into sections such as “Introduction,” “Historical Background,” “Current State of Research,” and “Gaps and Opportunities,” with each paragraph focused on a specific idea or theme.
- **Stay Focused and Cohesive:** Ensure that each paragraph contributes to the overall narrative, linking studies together around themes or research questions.
- **Be Concise:** Avoid unnecessary repetition and verbosity. Each sentence should add value or contribute to the argument.
- **Stay Up-to-Date:** Ensure you’re referencing the most recent studies, particularly those published in the last 5 years, unless seminal studies from earlier periods are central to your review.
- **Critically Analyze:** Rather than just summarizing studies, engage with them critically. Point out methodological flaws, theoretical disagreements, and gaps in the research.
- **Cite Primary Research:** Whenever possible, reference original studies. Secondary sources should only be used when necessary to provide broader context.
- **Be Selective in References:** Only cite sources that directly contribute to your research question and avoid irrelevant or tangential references.

- 5. Write a Convincing Methodology:** A convincing methodology section is a critical part of any research proposal or paper. It demonstrates the approach you will take to gather data, analyze it, and answer your research questions. A well-crafted methodology should clearly outline your research design, the techniques and tools you will use, and why these methods are appropriate for your research.

- **Sketch the Research Methodology**

This involves providing a detailed outline of the approach you will use to carry out your research. You should describe the type of research (qualitative, quantitative, or mixed methods), the methods of data collection,

and the process of data analysis. If you are conducting research on the impact of artificial intelligence (AI) in healthcare, your methodology might involve collecting quantitative data from patient records to analyze the accuracy of AI diagnostic tools compared to human doctors.

Example Sentence: "This study will adopt a quantitative research design, employing a comparative analysis of AI-based diagnostic tools and traditional human diagnosis methods using patient data from three major healthcare institutions. The data will be analyzed using statistical methods to determine diagnostic accuracy and efficiency."

- **Use Diagrams, Charts, Figures, and Tables**

Including visual aids like diagrams, flowcharts, and tables can help clarify complex concepts, structures, or processes in your methodology. These visuals make it easier for the reader to grasp the methodology at a glance and improve the overall readability of your proposal or paper. In your AI healthcare study, you could include a flowchart outlining the research process—from data collection (e.g., patient records) to analysis (e.g., comparison of diagnostic accuracy)—or a table summarizing the variables you plan to study.

Example Sentence: "The methodology section includes a flowchart (Figure 1) illustrating the step-by-step process of data collection, processing, and analysis, alongside a table (Table 1) outlining the key variables considered in the analysis, such as diagnostic accuracy, response time, and patient outcomes."

- **State the New, Different, or Better Aspects of the Suggested Solution**

It's important to highlight how your approach is innovative or improves upon existing methods. You should demonstrate how your methodology offers something new, whether it's a new technique, a more efficient process, or a unique application of an existing method. In the AI healthcare study, perhaps your methodology involves incorporating a new AI algorithm for diagnosis that improves accuracy or reduces false positives compared to current models.

Example Sentence: "The proposed methodology introduces a novel deep learning algorithm, which has been fine-tuned for medical imaging and outperforms traditional diagnostic models by reducing false positives by 10%, as shown in preliminary tests."

- **Cite References of the Methods**

A strong methodology is grounded in established practices and frameworks. You should cite relevant literature to justify why you have chosen the methods you're using. This shows that your approach is not arbitrary but is based on proven methods or previous successful applications. If your research involves a new data analysis method, you should reference previous studies where this method has been successfully used. Similarly, if you are using a well-known statistical test, you should reference the original work or widely accepted sources.

Example Sentence: "The data will be analyzed using a regression model, as outlined by Johnson et al. (2019), which has been successfully applied in similar healthcare studies to determine the correlation between diagnostic accuracy and the use of AI tools."

SAMPLE METHODOLOGY

Research Methodology

This research will employ a mixed-methods approach, combining quantitative and qualitative data to evaluate the effectiveness of AI diagnostic tools in healthcare settings. The quantitative component will involve a comparative analysis of diagnostic accuracy between AI systems and human doctors. The qualitative component will involve semi-structured interviews with healthcare professionals to assess their perceptions of AI tools.

Data Collection

The quantitative data will be gathered from patient records at three hospitals, focusing on cases where AI diagnostic tools have been employed. The sample size will include 1,000 patient records from each hospital, covering a range of diseases such as cancer, heart disease, and diabetes. These records will be anonymized to ensure privacy and ethical compliance.

The qualitative data will be obtained through interviews with 15 healthcare professionals, including doctors, nurses, and medical technicians. The interviews will explore their experiences and attitudes towards AI in healthcare, particularly its integration into diagnostic workflows.

Data Analysis

The quantitative data will be analyzed using statistical methods including t-tests and regression analysis, following the framework established by Smith et al. (2018). The regression analysis will examine the relationship between AI diagnostic accuracy and patient outcomes.

For the qualitative data, thematic analysis will be applied to interview transcripts to identify common themes and insights regarding the integration of AI in clinical practice. The analysis will follow the method described by Braun and Clarke (2006).

Innovative Aspects

Unlike previous studies that have focused solely on the diagnostic accuracy of AI, this research will also explore the human factors—such as trust, acceptance, and perceived reliability—among healthcare professionals. By combining these two dimensions (quantitative and qualitative), the research will provide a more holistic view of AI's role in healthcare.

Visual Aids

Figure 1: Flowchart outlining the research process.

Table 1: List of diagnostic tools and variables analyzed.

References

Smith, J., et al. (2018). "Statistical Methods for Analyzing Diagnostic Data in Healthcare." *Journal of Health Informatics*, 25(3), 120-135.

Braun, V., & Clarke, V. (2006). "Using Thematic Analysis in Psychology." *Qualitative Research in Psychology*, 3(2), 77-101.

A convincing methodology should be detailed, structured, and well-supported by references to ensure that the research is grounded in established practices and shows innovation. By clearly describing your methods, justifying your choices, and using visual aids to clarify complex concepts, you help the reader understand your approach and its potential to contribute meaningfully to the field.

6. Sell the Team: When writing a project proposal, one of the most important sections is convincing the evaluators that your team has the right qualifications, expertise, and capacity to successfully complete the project. The "Sell the Team" concept emphasizes the importance of clearly presenting the qualifications of your team members and how their unique skills contribute to the success of the project.

- Is the Team's Background Adequate to Convince the Evaluators the Project Will Succeed?**

The team's collective experience, expertise, and track record should demonstrate that they have the necessary skills to successfully carry out the project. The project leader, in particular, plays a crucial role in assuring the evaluators that the project is in capable hands. If your team is tasked with developing a new AI-driven healthcare application, the background of the project leader should reflect expertise in both AI and healthcare. You would want to showcase their experience with similar projects, relevant qualifications (such as advanced degrees in computer science and healthcare), and successful outcomes from previous initiatives.

Example Sentence: "Dr. John Smith, the project leader, has over 15 years of experience in AI and machine learning, with a proven track record of successfully leading multi-disciplinary teams in the healthcare sector. He spearheaded the development of a diagnostic AI system that was implemented in over 20 hospitals, reducing diagnosis time by 30%."

- **Clarify What Each Member Can Contribute to the Project's Goals**

It's essential to clarify the specific roles and responsibilities of each team member, ensuring that each person's expertise is aligned with the project's goals. This allows evaluators to understand how the team will work together to meet the project's objectives. If your project is about building an AI healthcare tool, each team member might bring a different skill set. The project leader could oversee strategy and coordination, while other team members might handle specific tasks such as data analysis, user experience design, software development, or regulatory compliance.

Example Sentence: "In addition to Dr. Smith, the team includes Jane Doe, a healthcare software engineer with 10 years of experience in developing secure healthcare applications, and Mark Lee, a data scientist who will lead the effort in training the AI models, having previously worked on AI-based predictive models for patient outcomes."

- **Industry Partners Could Help**

Collaboration with industry partners can add value to the project by bringing in additional expertise, resources, or access to real-world data. These partnerships can strengthen the credibility of the project and make it more likely to succeed. If your project involves developing a healthcare app, having an industry partner such as a hospital, health-tech company, or medical device manufacturer can provide access to clinical data, real-world testing environments, or technology integration.

Example Sentence: "We are partnering with ABC Healthcare, a leading hospital network, which will provide real-world clinical data and access to medical professionals for user testing. This collaboration ensures that our AI model will be grounded in practical applications, making it more reliable and effective."

- **Advice: Contact People You've Never Worked with Before, Who Are Knowledgeable in the Field**

Sometimes the team might benefit from advice or insights from experts who are outside of the core group but bring valuable perspectives to the project. This can help fill knowledge gaps and ensure that the project is grounded in the most current research and best practices. If your project involves novel AI algorithms, reaching out to a renowned AI researcher who has expertise in the specific algorithm you are using could enhance the

quality of the project. Their advice might help you avoid potential pitfalls or offer new insights on the project.

Example Sentence: "To ensure that our approach to AI-driven healthcare is grounded in the latest research, we have consulted with Dr. Alice Green, a leading AI expert at XYZ University, whose work on medical image recognition has been published in top journals. Her guidance will help us refine our model and ensure it aligns with cutting-edge practices in the field."

7. Prepare Adequate Management, Monitoring, and Evaluation Plans:

Preparing an adequate management, monitoring, and evaluation (M&E) plan is critical for ensuring the successful execution and timely completion of a project. This plan provides a structured approach to tracking progress, assessing outcomes, and making adjustments as needed to stay on track. It is essential to demonstrate how the project will be managed, how progress will be monitored, and how results will be evaluated to ensure the desired outcomes are achieved.

- Evaluation of Expected Results Compared to Existing Approaches**

An important part of any M&E plan is to define how the project's results will be evaluated. This involves comparing the outcomes of the proposed solution with existing approaches to identify whether the project has made improvements or achieved novel results. If your project is developing a new AI diagnostic tool for healthcare, your evaluation plan should include a comparison of the new tool's performance against existing diagnostic methods (such as human doctors or current AI models).

Example Sentence: "The effectiveness of our AI diagnostic tool will be evaluated by comparing its diagnostic accuracy and response time to the traditional diagnostic methods used in hospitals. We will also assess the tool's user acceptance and integration into existing workflows to measure improvements over current systems."

- Defining Measurable Goals**

Measurable goals are specific, quantifiable objectives that allow the project team to track progress and evaluate whether the desired outcomes are being met. These goals should be linked to the overall objectives of the project. Measurable goals for an AI diagnostic tool might include objectives such as improving diagnostic accuracy by a certain percentage, reducing patient wait times, or increasing healthcare professionals' satisfaction with the tool.

Example Sentence: "The project's main goal is to improve diagnostic accuracy by 15% compared to current AI models and reduce the average diagnosis time by 20%. We will also aim for an 85% user satisfaction rate among healthcare professionals who use the tool."

- **Specifying Project Deliverables, Milestones, and Timelines**

Clear deliverables, milestones, and timelines are essential to keep the project on track and ensure that all tasks are completed within the required timeframe. Deliverables refer to tangible outputs or results produced during the project, while milestones represent key achievements or progress points. For a healthcare AI project, deliverables might include a fully functional prototype of the diagnostic tool, a report on system performance, and user feedback data. Milestones could include the completion of data collection, the development of the first working version of the tool, and the completion of pilot testing.

Example Sentence: "The project will follow the following milestones and deliverables:

Milestone 1: Data collection from healthcare institutions completed by Month 3.

Deliverable 1: Initial prototype of the AI diagnostic tool by Month 5.

Milestone 2: Prototype testing and user feedback by Month 7.

Deliverable 2: Finalized version of the AI diagnostic tool ready for full-scale implementation by Month 9."

- **Can the Project Be Completed Within the Indicated Period?**

A crucial aspect of the M&E plan is to ensure that the project can be realistically completed within the indicated timeframe. This requires an honest assessment of the project's scope, available resources, and potential risks that could delay progress. If the timeline for developing the AI tool is nine months, the project manager should consider the complexity of the tasks involved and allocate sufficient time for data collection, model development, testing, and refinement. Potential risks, such as delays in data access or regulatory approvals, should be factored into the timeline.

Example Sentence: "The project has been broken down into clear, manageable phases with allocated time for each task. The timeline has been reviewed to account for potential delays such as data collection challenges or the need for additional regulatory approvals. Given the team's expertise and

the availability of key resources, we are confident that the project can be completed within the 9-month timeframe."

SAMPLE OF AN ADEQUATE MANAGEMENT, MONITORING, AND EVALUATION PLAN

Management, Monitoring, and Evaluation Plan for AI Healthcare Diagnostic Tool Project

I. Project Evaluation: The success of the AI healthcare diagnostic tool will be evaluated based on three key criteria:

- **Accuracy:** The tool's diagnostic accuracy will be compared with the current standard of care and existing AI tools. We aim for a 15% improvement in diagnostic accuracy over current AI models.
- **Efficiency:** We will measure the reduction in diagnosis time, targeting a 20% decrease compared to traditional methods.
- **User Acceptance:** A user satisfaction survey will be conducted with healthcare professionals to measure ease of integration and overall satisfaction. We aim for at least 85% positive feedback.

II. Measurable Goals

- **Goal 1:** Achieve a 15% improvement in diagnostic accuracy by the end of the project.
- **Goal 2:** Reduce diagnostic time by 20% compared to traditional diagnostic methods.
- **Goal 3:** Ensure that at least 85% of healthcare professionals who use the tool express satisfaction with its usability.

III. Deliverables and Milestones

- **Milestone 1 (Month 3):** Complete data collection from three major healthcare institutions.
 - ◆ **Deliverable:** Dataset ready for model training and testing.
- **Milestone 2 (Month 5):** Develop initial prototype of the AI diagnostic tool.
 - ◆ **Deliverable:** Prototype ready for preliminary internal testing.
- **Milestone 3 (Month 7):** Conduct pilot testing and collect user feedback.
 - ◆ **Deliverable:** Pilot testing report with detailed user feedback and system performance analysis.
- **Milestone 4 (Month 9):** Finalize and implement the AI diagnostic tool in participating hospitals.
 - ◆ **Deliverable:** Fully functional, deployable AI diagnostic tool with all features tested and refined.

IV. Project Timeline

- **Months 1–3:** Data collection and preliminary model development.
- **Months 4–5:** Prototype development and internal testing.
- **Months 6–7:** Pilot testing with healthcare professionals and data collection for evaluation.
- **Months 8–9:** Final implementation and monitoring of outcomes.

V. Risk Management and Feasibility: Given the expertise of the project team and our partnerships with healthcare institutions, we anticipate no significant delays. However, risks such as delays in data access or regulatory approvals have been accounted for in the timeline, and contingency plans are in place. We are confident the project can be completed within the 9-month period.

WRITING LOGICAL FRAMEWORK (Logframe)

"A logframe is a table that lists your program activities, short term outputs, medium term outcomes, and long-term goal. It is supposed to show the logic of how the activities will lead to the outputs, which in turn lead to the outcomes, and ultimately the goal." – Piroska Bisits Bullen/Tools4dev

Components of the Logical Framework

I. Activities

Activities are the specific tasks or actions that need to be carried out to achieve the desired outputs. These are the day-to-day operations that move the project forward. If your project involves developing an AI tool for healthcare, an activity could be.

Example: "Conduct surveys of healthcare professionals to gather feedback on the prototype of the diagnostic tool."

II. Outputs

Outputs are the direct products or deliverables that result from the completion of activities. Outputs should be tangible and measurable results. In the same AI healthcare project, an output could be:

Example: "A working prototype of the AI diagnostic tool tested in five hospitals."

III. Outcomes

Outcomes represent the medium-term effects or changes that result from the outputs. They reflect how the outputs will lead to changes in behavior, practices, or conditions in the target population or community. Continuing with the healthcare project, an outcome might be:

Example: "Healthcare professionals improve diagnostic accuracy by 15% through the use of the new AI tool."

IV. Goal

The goal is the long-term impact or overarching objective that the project aims to achieve. It's the desired end result that reflects the broader mission or vision. The long-term goal in the AI healthcare project could be:

Example: "To improve healthcare delivery by integrating AI into diagnostic processes, ultimately leading to better patient outcomes."

Project Component	Summary	Objectively Verifiable Indicators (OVIs)	Means of Verification (MoV)	Assumptions
Goal	The long-term goal is to enhance healthcare delivery by reducing diagnostic errors through the use of AI technology.	Improved healthcare delivery through AI-assisted diagnostics	Patient health data; improvement in diagnostic accuracy.	Healthcare professionals are open to using AI tools.
Outcomes	The project aims for measurable improvements in diagnostic accuracy and broad acceptance of the AI tool by healthcare professionals.	1. Diagnostic accuracy improved by 15%.	Diagnostic performance reports.	AI tool integrates well into existing workflows.
	Acceptance from healthcare professionals is crucial to ensure the successful adoption and use of the AI tool.	2. AI tool accepted by at least 80% of healthcare professionals.	User satisfaction surveys; feedback from healthcare professionals.	Healthcare professionals are trained adequately on the AI tool.
Outputs	The project will produce a working prototype of the AI tool that can be tested and refined based on real-world feedback.	1. Prototype of AI diagnostic tool developed.	Prototype ready and tested in five healthcare institutions.	AI technology used is compatible with hospital systems.
	Data collection from hospitals will be key for evaluating the effectiveness and usability of the AI tool in clinical settings.	2. Data collected from 5 hospitals for evaluation.	Survey data, test results, feedback.	Hospitals are willing to share patient data for analysis.
Activities	Testing the prototype in hospitals will allow for real-world validation of the tool's performance.	1. Conduct prototype testing in hospitals.	Completed tests in each of the five hospitals.	All participating hospitals provide access to relevant patient data.
	Surveys and interviews will help gather feedback from healthcare professionals to refine the tool and assess its usability.	2. Develop survey and interview questionnaires for healthcare professionals.	Survey questionnaires and interview protocols.	Healthcare professionals agree to participate in feedback collection.

8. Prepare a Realistic Budget: A detailed and realistic budget is essential for convincing funders that your project is financially feasible. Your budget should clearly itemize all the necessary resources, such as equipment, personnel, travel expenses, and any indirect costs like overheads. For example, if you're researching the effects of air pollution on public health, your budget should cover costs for lab tests, field surveys, research assistants, and the necessary technology. A transparent and well-justified budget helps to establish trust with the funding agency and ensures that the project can be completed without financial setbacks.

9. Prepare an Exit Strategy: The Sustainability of the Outputs: An exit strategy is a crucial aspect of project planning that outlines how the project will transition from its execution phase to a self-sustaining phase, where the project's results can continue to have an impact beyond the project's lifetime. The primary goal of an exit strategy is to ensure that the project's outputs are sustained over time, meaning that the benefits of the project continue even after the initial funding or project activity has concluded. This strategy also involves ensuring that the project results are applied and adopted by the relevant stakeholders.

Aspects of an Exit Strategy

I. How and by Whom the Expected Results Can Be Applied

The exit strategy should define how the results of the project (outputs and outcomes) will be applied in real-world contexts after the project ends. This may include how stakeholders (such as users, institutions, or governments) will implement the project's results to create value in the long term. If the project involves developing a new AI diagnostic tool for healthcare, the exit strategy should identify how hospitals, medical professionals, or governments will adopt and continue to use the tool after the project concludes. The strategy should outline:

Who: Hospitals, clinics, or health organizations that will use the tool?

How: Medical professionals will integrate the tool into their diagnostic processes, training healthcare providers on its use.

Why: Healthcare systems will benefit from faster, more accurate diagnoses, improving patient outcomes.

II. Demonstrating the Sustainability of the Project's Outputs

Sustainability refers to the ability of the project's outputs to remain relevant, effective, and operational after the project's official end. The project's results should be self-sustaining, meaning they don't rely on continuous external funding or resources. In a project that involves creating an AI diagnostic tool for healthcare, sustainability may be demonstrated by ensuring the tool is easy to maintain and can be updated with minimal cost after the project ends. The exit strategy should clarify how the tool will be kept up-to-date and functional, perhaps by creating a partnership with local technology firms or establishing a user support system.

- **Sustainability Measures:**

Funding: How the project's continuation will be funded after the end of external project funding. For example, the tool might be integrated into a government health initiative that provides ongoing funding or support.

Maintenance: Who will maintain and update the system? For example, the health department could hire dedicated staff to support and update the AI system.

Training: Continuous professional development for healthcare professionals to ensure they can use and update the tool as needed.

III. Which Project Outputs Should Live on After the Project Ends, and Who Will Want Them?

The exit strategy should specify which outputs of the project will be valuable and relevant to stakeholders after the project has concluded. It should also identify the parties who will benefit from these outputs and why they will want to continue using them.

For the AI diagnostic tool, the key outputs that should continue to exist and be used after the project ends are:

- The AI tool itself, which hospitals and clinics will want to continue using to improve diagnostic accuracy.
- Training materials and manuals that ensure healthcare providers are skilled in using the tool.
- Data and analytics gathered through the tool that provide ongoing insights for improving diagnostic procedures.
- Why stakeholders will want them: Healthcare organizations, particularly those aiming to improve patient care and operational efficiency, will value the AI tool. The tool's ability to improve diagnostic accuracy, reduce errors, and enhance healthcare outcomes will make it highly desirable.

IV. Concrete Results that Last

Concrete results are tangible and measurable outputs that the project delivers, which should continue to have an impact long after the project concludes. These results may include systems, products, processes, or organizational changes that are institutionalized or integrated into existing structures. In the case of the AI diagnostic tool project, concrete results might include:

- A fully functional AI diagnostic tool that can be continuously updated and used to assist in medical diagnoses. The tool can be licensed or sold to healthcare providers, ensuring it remains in use beyond the project.
- Training programs for healthcare professionals, ensuring they have the skills to use the AI tool and integrate it into their daily work.
- Data analytics dashboards for continuous monitoring of the AI tool's performance, providing hospitals with actionable insights for improving healthcare delivery.

Elements to Include in an Exit Strategy

I. Ownership and Responsibility

Clarify who will own and take responsibility for the project outputs after the project concludes. This could be a government body, a private company, a non-profit, or another entity.

Example: If the AI tool is developed, the healthcare institution or government health department might take ownership of the tool, ensuring its continued use and updates.

II. Financial Sustainability

Outline how the project's outputs will be financed after the project ends. This could involve securing ongoing funding or generating revenue through sales, licenses, or partnerships.

Example: The exit strategy for the AI diagnostic tool could involve licensing the tool to hospitals or offering a subscription-based service for continuous updates and support.

III. Partnerships and Collaborations

Building strategic partnerships is vital for sustainability. Identify key collaborators who can help sustain the project's outputs, such as industry partners, donors, government agencies, or local businesses.

Example: The project might form a partnership with a tech company that specializes in AI and healthcare, which could handle the maintenance and updates of the tool after the project's completion.

IV. Institutionalization

Ensure that the project outputs are integrated into existing structures or systems so they can continue to function without ongoing external project support. This may involve formalizing the outputs into the policies or operational practices of relevant organizations.

Example: The healthcare AI tool could become part of the national healthcare protocol for diagnostic practices, ensuring its continued use and dissemination.

An exit strategy ensures that the sustainability of the project's outputs is carefully planned and that results will continue to have a long-term impact even after the project is officially completed. This includes clear plans for ownership, ongoing funding, collaborations, and institutionalization, as well as making the results concrete and useful for the stakeholders who will benefit from them.

CHAPTER 2

CRAFTING A COMPREHENSIVE REVIEW OF RELATED LITERATURE

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Introduction

A **literature review** is a comprehensive and critical examination of scholarly sources related to a particular topic or field of study. It involves the systematic summary, classification, analysis, and comparison of existing research and publications to identify patterns, trends, gaps, and contradictions in the literature. More than just a summary, a literature review evaluates the quality, relevance, and contributions of previous studies, providing insights into how knowledge in the field has evolved over time.

The literature review is a foundational step in any research or thesis project, forming the basis upon which the entire study is built. It involves a thorough exploration and evaluation of existing scholarly work relevant to the research topic. By examining what has already been studied and published, the literature review enables researchers to identify gaps, inconsistencies, or underexplored areas within the current body of knowledge. These gaps help to justify the purpose and significance of the new research.

Conducting a literature review also ensures that researchers avoid duplicating previous work—often referred to as "reinventing the wheel"—by providing a clear understanding of what has already been addressed. This not only saves time and resources but also allows for more meaningful contributions by building upon or challenging established findings.



Moreover, a well-executed literature review demonstrates the researcher's depth of understanding of their subject area. It showcases their ability to engage with existing scholarship, critically assess different perspectives, and position their research within the broader academic discourse. In this way, the literature review reflects both scholarly competence and the relevance of the research, guiding the formulation of research questions, hypotheses, and methodologies.

Purpose of a Literature Review

A literature review is far more than a preliminary task in the research process—it's an essential scholarly activity that provides the foundation for meaningful and original inquiry. This chapter explores the core purposes of a literature review, highlighting its multifaceted role in shaping, refining, and contextualizing academic research. Understanding these purposes not only enhances the quality of your work but also equips you with the tools to engage effectively with the academic community.

a. Identifying Gaps in Knowledge

One of the most critical purposes of a literature review is to identify gaps or limitations in existing research. By carefully examining what has been published, researchers can uncover areas that are underexplored, inconsistently studied, or entirely overlooked. These gaps become opportunities for further investigation and form the basis for developing original research questions. Recognizing what is not yet known or fully understood is as important as understanding what is already established.

b. Avoid Redundancy

A thorough literature review ensures that researchers do not replicate work that has already been done, unless replication is necessary for validation or new interpretation. This helps avoid redundancy and ensures that research efforts are directed toward advancing knowledge, not merely repeating it. Being aware of the scope and findings of previous studies also allows researchers to refine their approach and build upon prior work more effectively.

c. Networking with Other Researchers

By reviewing existing literature, researchers gain insight into who is working in their field, what perspectives they hold, and what methodologies they employ. This awareness not only enriches the research process but also opens the door to potential collaborations, academic discussions, and professional networking. Engaging with the work of others fosters a sense of belonging within a research community and can lead to valuable connections and intellectual exchanges.

d. Demonstrating Research Depth

A well-crafted literature review is a reflection of the researcher's expertise, analytical ability, and command of the subject matter. It demonstrates the researcher's ability to engage critically with various sources, synthesize diverse viewpoints, and construct a coherent narrative about the current state of knowledge. This depth is essential not only for academic credibility but also for convincing peers, mentors, and evaluators of the rigor and relevance of your work.

e. Contextualizing Your Work

The literature review situates your research within the broader landscape of existing scholarship. It shows how your study relates to, supports, extends, or challenges previous findings. By providing this context, the literature review allows readers to understand the significance of your research and its potential contribution to the

field. It also helps to align your work with existing theoretical frameworks, guiding your methodological choices and interpretations.

In essence, the literature review serves as a strategic and indispensable foundation for any meaningful research endeavor. Far from being a mere academic formality, it plays a vital role in shaping the direction and depth of a study. By thoroughly examining existing knowledge, the literature review acts as a bridge between the known and the unknown—connecting past findings with future inquiry.

This bridge allows researchers to navigate the complex landscape of their field with greater clarity and purpose. It helps them avoid common pitfalls, such as redundant research or misinterpretation of concepts, by highlighting what has already been explored and how. It also serves to refine the research focus by providing a clearer understanding of where genuine gaps or opportunities lie.

Components of a Literature Review

A literature review is not merely a collection of summaries; it is a structured, coherent narrative that critically engages with existing research to set the stage for new inquiry. To achieve this, a literature review must be organized with clear components that guide the reader from general background information to a focused rationale for the proposed study. This chapter breaks down the essential components of a literature review into three main sections: **Introduction, Main Body, and Conclusion.**

a. Introduction

The introduction of a literature review serves as a vital starting point that orients the reader and lays the groundwork for the analysis to follow. It should begin by clearly and concisely defining the research topic or problem, establishing what the review will address. This is followed by an explanation of the significance of the topic, highlighting why it is important and deserving of scholarly attention. The introduction should also provide essential background context, including definitions of key terms, relevant historical developments, and foundational theories that shape the discussion. In addition, it must establish the scope of the review by clarifying what types of literature or perspectives are included or excluded, and the rationale behind those choices.

Finally, a brief outline of the review's structure helps guide the reader through the forthcoming sections. Overall, a well-crafted introduction sets the tone for the literature review and clearly communicates its purpose, relevance, and direction.

b. Main Body

The main body of a literature review is its core and most substantial component, where the analysis and interpretation of existing research are developed in depth. Rather than simply listing studies chronologically, this section should be organized thematically or conceptually, grouping literature around major trends, recurring themes, or theoretical approaches to create a coherent and logical flow of ideas. Each source should be summarized and synthesized, highlighting key arguments, methodologies, and findings, while also drawing comparisons, identifying contradictions, and emphasizing areas of consensus.

In addition to summarizing, the main body must include critical analysis, evaluating the quality, credibility, and relevance of the sources, and discussing the strengths and limitations of various approaches. Clear transitions between paragraphs and sections are essential to maintain coherence and ensure that the review reads as an integrated narrative rather than a fragmented list of studies. Ultimately, the main body goes beyond presenting what is known—it interprets and connects the literature, revealing deeper insights, patterns, debates, and gaps that shape the direction of future research.

c. Conclusion

The conclusion of a literature review brings together the key insights gained throughout the analysis and prepares the foundation for the forthcoming research. It should begin by summarizing the major findings, such as recurring themes, theoretical contributions, or common methodological approaches identified in the reviewed literature. Importantly, it highlights the gaps or limitations where critical questions remain unanswered or where previous studies are outdated or insufficient. By pointing out these gaps, the conclusion outlines specific areas for future research, suggesting directions, questions, or frameworks that could advance understanding within the field.

Additionally, this section connects your own research to the broader scholarly conversation by explaining how your study will contribute to, expand upon, or challenge existing knowledge. An effective conclusion thus not only synthesizes the literature but also clearly demonstrates how the review has justified and informed the need for your research, emphasizing its relevance and potential impact in the academic community.

Each component of a literature review plays a vital role in crafting a compelling, scholarly narrative. The introduction frames the research problem, the main body organizes and evaluates existing knowledge, and the conclusion synthesizes key insights while opening pathways for further inquiry. Together, these components ensure that the literature review serves not only as a summary of what has been done, but as a meaningful contribution to the research process—clarifying the academic conversation and inviting new perspectives into it.

Steps to Prepare a Literature Review

A well-prepared literature review is the foundation of any academic or research project. It not only frames your research question but also provides context and justification for your study by synthesizing existing knowledge.

1. Defining Your Topic

The first step in preparing a literature review is to clearly define your research topic. Begin by identifying a broad subject area that interests you or aligns with your research goals. Once you have the general theme, narrow it down to more specific research questions or problems that need exploration. This focus helps guide your search and ensures your review is manageable and relevant.

Tip: Use techniques like brainstorming, mind mapping, or consulting with mentors to refine your topic.

Example: If your broad area is “climate change,” you might narrow it down to “the impact of climate change on coastal ecosystems in Southeast Asia.”

2. Determining the Approach and Objective

A literature review can take various forms depending on your research aims and the discipline. It is essential to decide on the type of review you intend to conduct early on.

- **Narrative Review:** Provides a comprehensive overview of a topic, often summarizing and discussing a wide range of studies.
- **Systematic Review:** Uses a rigorous and reproducible method to identify, evaluate, and synthesize all relevant studies on a specific question.
- **Thematic Review:** Organizes literature around key themes or concepts rather than chronologically.
- **Chronological Review:** Traces the development of a topic over time.
- **Issue-Based Review:** Focuses on specific controversies or problems within the literature.
- **Theory/Model Review:** Examines the theoretical frameworks or models used within a field.

3. Searching for Literature Review

Effective literature searching is critical to ensure your review is thorough and up to date. Use academic databases like Google Scholar, Scopus, Web of Science, PubMed (for biomedical topics), or discipline-specific databases. Develop search strategies using keywords, Boolean operators (AND, OR, NOT), and filters to refine results. Review references in key papers to find additional relevant studies (snowballing). Consider including grey literature (theses, reports, conference papers) for a comprehensive view. Document your search process for transparency, especially if conducting a systematic review.

Lastly you may use AI tools in searching literature review such as:

Finding papers

- Undermind
- EvidenceHunt
- Litmaps
- Google Scholar
- Omni Iota Science Limited (OIPub)
- arXiv
- Semantic Scholar
- R Discovery
- PubMed

Reading Papers

- Scholarcy
- Enago (Crimson Interactive)
- SciSummary
- ScribeAI
- Petal
- Outread
- Paper Digest
- Pub Reader
- Deep Dyve

Writing Literature Review

- Paperpal
- ResearchPal
- Review-it
- Grammarly
- Overleaf
- Google Doc
- LaTeX Project
- Scrivener
- Evernote
- Focus Writer

Data Extraction

- SciSpace
- SciSummary
- AnswerThis
- Elicit AI
- Perplexity AI

4. Evaluating the Literature

Not all literature is created equal, so it is essential to critically evaluate each source for its relevance, credibility, and overall quality. Begin by assessing the authorship—consider the author's qualifications, institutional affiliation, and expertise in the subject area. Next, evaluate the type of publication, giving preference to peer-reviewed journals, which typically undergo rigorous scrutiny and are more reliable than informal or non-academic sources. Examine the study's methodology to determine whether the research design, sample size, and analytical methods are appropriate and robust.

The date of publication is also important, as more recent sources are likely to reflect current knowledge and perspectives. Be alert to any potential biases or conflicts of interest, which may influence the objectivity of the research.

Finally, consider how each source contributes to your research question or fits within the broader thematic or theoretical framework of your review. This process of critical evaluation ensures that the literature you include is both high in quality and directly relevant to your study.

5. Identifying Patterns and Trends

After gathering and evaluating your sources, the next step is to analyze them to identify patterns and trends within the literature. This involves looking for recurring themes, consistent findings, or contrasting results across studies, which can reveal the current state of knowledge in your area of research. Grouping the literature based on methodologies, theoretical frameworks, or major findings helps to organize your review and clarify how different studies relate to one another. Pay attention to contradictions or gaps in the research, as these often point to areas that require further investigation and can help justify your own study. Emerging topics or shifts in focus over time can also indicate evolving trends within the field.

To better visualize relationships and trends, you may use tools like concept maps, summary tables, or thematic charts. Identifying these patterns not only strengthens your understanding of the subject but also provides a foundation for constructing a coherent narrative in your literature review, showing how previous work leads to and supports your own research direction.

6. Drafting the Manuscript

Drafting the manuscript involves organizing your literature review into a clear and coherent structure that effectively communicates your findings. Begin by preparing an outline that typically includes an introduction to define the scope and objectives, a body section that presents the literature organized by themes, chronology, or methodology, and a conclusion that highlights key insights, identifies research gaps, and outlines implications for future study. As you write, aim for clarity, objectivity, and critical analysis—go beyond summarizing individual studies by evaluating their significance and connecting them to broader patterns. Be diligent with citations, ensuring all sources are properly referenced according to the required style guide for your discipline. Once the draft is complete, revise thoroughly to enhance the logical flow, coherence, and completeness of your arguments.

This step transforms your collection of sources into a well-structured narrative that not only synthesizes existing research but also builds a strong foundation for your own scholarly contribution.

Defining the Topic

Defining a clear and focused topic is the foundational step in conducting any research or writing an effective literature review. A well-defined topic provides direction for your study, helps streamline your literature search, and ensures that your work remains relevant and manageable.

1. Understanding the Importance of Topic Definition

Before diving into the research process, it is essential to understand why defining your topic matters. A clearly articulated topic not only guides your search for literature but also frames your research questions, objectives, and methodology. Without a well-defined topic, you risk producing a scattered or unfocused review that lacks coherence and depth.

Examples of Topics

To begin defining your topic, start with general subject areas that align with your interests or academic goals. Here are some examples of broad research topics in the field of plant sciences:

- **Diseases of Tomato** – A wide-ranging topic that may include various pathogens, environmental factors, and management strategies.
- **Management of Mango Diseases** – Focused on approaches to controlling or mitigating diseases affecting mango crops.
- **Plant Species in Mindanao** – A regional topic that could explore biodiversity, conservation, or ecological studies specific to Mindanao.

These examples illustrate how topics can be broad at the initial stage, giving you room to explore and refine your focus.

2. Narrowing Down Your Focus

Once you have a general topic, the next step is to narrow it down to a more specific research question or area of interest. This makes the topic more manageable and allows for deeper investigation. Consider the scope, time, available resources, and your research objectives when refining your topic.

For instance:

- Diseases of Tomato can be narrowed to Fungal Diseases of Tomato in Lowland Areas or Resistance Breeding Against Tomato Wilt.
- Management of Mango Diseases could focus on Biological Control Methods for Anthracnose in Mango or Effectiveness of Organic Treatments for Mango Powdery Mildew.
- Plant Species in Mindanao may be refined to Endemic Medicinal Plants in Northern Mindanao or Diversity of Ferns in Mt. Apo Region.

Narrowing your focus involves identifying a specific issue, location, population, method, or timeframe within the broader topic. This refined focus not only helps in targeting the right literature but also makes your research contribution more precise and impactful.

CHAPTER 3

PREPARING MANUSCRIPT AND SELECTING THE RIGHT JOURNAL

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Publishing research is a critical aspect of academic life, serving as a means to disseminate knowledge, establish expertise, and contribute to the advancement of various fields. This chapter aims to guide researchers through the essential steps of preparing a manuscript for publication, highlighting the importance of publishing, types of publishable articles, and best practices for drafting and presenting research findings.



The Importance of Publishing Research

- **Establishing Expertise**

Publishing research positions researchers as authorities within their specific fields by demonstrating their knowledge, skills, and contributions to advancing science. Through the dissemination of original findings and critical analyses, authors build a professional reputation that enhances their credibility among peers, institutions, and the wider academic community. This recognition not only fosters trust in their expertise but also opens doors to collaborative opportunities, invitations to speak at conferences, and participation in influential projects or committees.

- **Competitive Advantage**

In today's increasingly competitive academic and professional environments, having a strong publication record can significantly differentiate candidates when applying for job promotions, tenure, or new academic positions. Publications serve as tangible evidence of a researcher's productivity, commitment, and impact, making them a key factor in hiring and evaluation processes. The ability to demonstrate a history of successful research dissemination often provides an edge over equally qualified peers, thus facilitating career growth and stability.

- **Dissemination of Knowledge**

Research publications play a critical role in the advancement of science by sharing new findings, methodologies, and insights with the broader scientific community and the public. By publishing their work, researchers contribute to the collective understanding of complex issues, enabling others to build upon their discoveries. This exchange of knowledge not only accelerates innovation but can also lead to practical applications that improve health, technology, policy, and overall quality of life, thereby amplifying the societal impact of academic research.

- **Career Advancement**

Publications are frequently a fundamental requirement for advancing within academia, including the attainment of advanced degrees such as master's or doctoral qualifications. Furthermore, a robust publication record is often essential for securing competitive research funding and grants, as it demonstrates a researcher's ability to generate valuable and credible scientific contributions. Consistent publication success can thus provide the necessary credentials and financial support to sustain and expand future research endeavors, fostering long-term professional development.

Types of Publishable Articles

Understanding the various types of articles that can be published is crucial for researchers. The following are common formats:

1. Original Research Articles

Most common type of scholarly publication. They present full reports of data derived from original research studies and are typically structured according to the IMRaD format—Introduction, Methods, Results, and Discussion. This structure ensures a logical flow of information, from the background and objectives of the study to the methods used, the findings obtained, and their interpretation within the broader scientific context. Original research articles are fundamental to advancing knowledge in a field, as they offer new data and insights. They are generally subject to rigorous peer review to ensure the quality, validity, and significance of the research before publication.

2. Short Reports or Letters

Also known as brief communications or research notes, are concise articles that communicate preliminary findings or novel insights deserving rapid dissemination. Typically limited to 2 to 5 pages, these publications focus on delivering essential information clearly and efficiently, without the extensive detail found in full research articles. They are especially useful for reporting time-sensitive results, pilot studies, or emerging observations that may lead to further investigation. Although brief, they are peer-reviewed and valued for their ability to stimulate discussion and inform ongoing research in a timely manner.

3. Review Articles

Comprehensive syntheses of existing research on a specific topic, aimed at summarizing, evaluating, and interpreting the current state of knowledge in a given

field. Typically written by experts with extensive experience and insight, these articles do not present new experimental data but instead draw from a wide range of published studies to provide a critical overview. Review articles play a crucial role in identifying patterns, emerging trends, and gaps in the literature, making them valuable resources for researchers, practitioners, and policymakers. They often serve as foundational references for new studies and help guide future research directions.

4. Case Studies

Detailed reports that focus on specific, often unique instances encountered in practice, research, or experimentation. Commonly used in clinical and medical fields, they illustrate rare phenomena, unusual patient presentations, or unique responses to treatment, offering practical insights that may not emerge from larger studies. Typically structured with a background, case presentation, and conclusion, case studies emphasize real-world application and are often used to highlight exceptions or inform clinical decision-making. While they may not provide generalizable data, they are valuable for teaching purposes, generating new hypotheses, and encouraging further investigation into uncommon or emerging issues.

5. Methods Papers

Focus on the development, refinement, or validation of research methodologies, offering detailed descriptions of innovative experimental techniques or significant improvements to existing methods. These articles are essential for advancing scientific practice, as they provide the technical foundation upon which future studies can build. By thoroughly explaining procedures, tools, or protocols, methods papers enable reproducibility, facilitate broader application across various research contexts, and promote standardization within a field. They are especially valuable when new approaches increase efficiency, accuracy, or accessibility in data collection and analysis, thereby contributing to methodological progress and reliability in scientific research.

6. Discussion Papers

Also known as opinion or perspective articles, provide thoughtful commentary on current research, emerging scientific issues, or theoretical concepts within a particular field. Unlike original research articles, they typically do not include new experimental data but are grounded in scholarly reasoning and a deep understanding of existing literature. These papers offer critical reflections, propose new interpretations, or suggest directions for future research, often challenging conventional viewpoints or highlighting underexplored areas. By encouraging

academic debate and intellectual discourse, discussion papers play a vital role in shaping scientific thought and fostering deeper engagement with complex topics.

7. Data Papers

Specialized publications that focus on the detailed description of datasets rather than testing hypotheses or offering interpretations. Their primary purpose is to facilitate data sharing by thoroughly documenting how the data were collected, organized, and processed, as well as outlining their potential applications in future research. By making datasets publicly accessible and clearly described, data papers promote transparency and reproducibility, allowing other researchers to validate findings, perform secondary analyses, or build upon existing data. These papers play a crucial role in open science, encouraging collaboration and maximizing the value of research data across disciplines.

8. Book Reviews

Scholarly evaluations of newly published books, aiming to critically assess a work's contribution to its field. They typically examine the book's strengths, weaknesses, originality, and relevance to current academic discourse. Written by knowledgeable reviewers, these articles provide insight into the quality and usefulness of a text for researchers, educators, and students who may consider it for study, citation, or teaching. Beyond simply summarizing the content, book reviews offer thoughtful analysis and contextualization, helping to uphold scholarly standards and guide readers in making informed decisions about engaging with recent publications.

Structuring the Manuscript

A well-structured manuscript is critical for ensuring clarity, coherence, and scientific rigor. Following a standard organization not only facilitates the reader's understanding but also streamlines the peer review and publication process. Below is a recommended framework for organizing a scientific manuscript, along with elaboration on each component:

- Title**

The title should be concise, specific, and informative. It must accurately reflect the content and scope of the study, including the key variables or organisms under investigation. Avoid unnecessary jargon or abbreviations, and aim to engage the reader's interest while maintaining scientific accuracy.

- Abstract**

The abstract serves as a standalone summary of the paper and is often the most-read section. It should succinctly describe the background or rationale, the

objectives of the study, the methods used, the key findings, and the main conclusions. A well-crafted abstract allows readers to quickly assess the relevance of the study to their interests. Typically, it is limited to 150–300 words and 5–7 keywords, depending on journal guidelines.

- **Introduction**

The introduction sets the stage for the research by providing essential background information that contextualizes the study within the broader scientific landscape. It should discuss relevant literature to demonstrate an understanding of existing knowledge and to highlight what has already been established in the field. This review of prior work helps identify a specific research gap or niche that the current study aims to address. Finally, the introduction should clearly articulate the research question, hypothesis, or primary objectives, guiding the reader toward the study's purpose and significance.

- **Materials and Methods**

The materials and methods section must provide sufficient detail to allow other researchers to replicate the study accurately. This includes clear descriptions of all materials, equipment, and software used, as well as a comprehensive explanation of the study design, including sampling techniques, experimental procedures, and statistical analyses. When established protocols are followed, proper citations should be included instead of repeating known procedures. Transparency and clarity are essential in this section, as vague or incomplete methods can result in misinterpretation, hinder reproducibility, and ultimately affect the credibility of the research.

- **Results**

The results section presents the findings of the study objectively and clearly, without offering interpretation or analysis. It should describe overall patterns or trends using concise and coherent text, while complex data can be effectively summarized through well-organized tables and visually represented using figures. Each table or figure must include informative captions and be understandable on its own, without needing to refer extensively to the main text. It is also important to report statistical significance, confidence intervals, and other relevant metrics to ensure clarity and transparency in the presentation of data.

- **Discussion**

This section interprets the findings of the study within the broader context of existing research and scientific understanding. It should clearly highlight the main conclusions and emphasize their significance, explaining how they contribute to the advancement of the field. This section also involves comparing the results with those of previous studies, identifying areas of agreement or disagreement, and exploring possible reasons for any discrepancies. A thorough discussion acknowledges the study's limitations, such as sample size, methodological constraints, or potential sources of bias, while also offering mechanistic explanations or theoretical insights that help to explain the observed outcomes. Finally, it should propose directions for future research, suggesting how the current findings can inform or inspire further investigation.

- **Ethical Considerations**

Before submission, researchers must ensure that their study complies with all relevant ethical standards. This includes obtaining ethics approval from the appropriate review boards for any research involving human or animal subjects, thereby ensuring the protection of participants and adherence to legal and institutional guidelines. When individual data or identifiable information is included, researchers must secure informed consent for publication from the participants. Additionally, authors are required to transparently declare any competing interests or conflicts of interest that could potentially influence the study's outcomes or interpretations, maintaining integrity and trust in the research process.

- **Acknowledgements**

This section is used to recognize individuals, institutions, or organizations that contributed to the research but do not meet the criteria for authorship. This may include colleagues who provided technical assistance, reviewers who offered valuable feedback, or institutions and funding agencies that supported the project financially or materially. It is important to follow ethical and journal-specific guidelines when acknowledging such support, particularly when disclosing financial contributions.

- **References**

This section lists all sources cited throughout the manuscript and must be formatted precisely according to the target journal's citation style, such as APA, MLA, Chicago, or Vancouver. Proper citation ensures scholarly integrity, allows readers to verify

sources, and helps avoid issues that could delay publication due to formatting errors or incomplete bibliographic details.

Selecting the Right Journal

It is best to choose your journal before you start writing. The reasons are that journals have specific criteria related to the manuscript structure, word limits, and reference style; they have specific focuses, or scopes; and editors will often look at your references to see whether you have cited articles published in their journal. So, once you have chosen a journal, identify articles published there that have a bearing on your manuscript and include them among your references.

A tip for how choosing the journal is to perform a search with the keywords (or title) of your manuscript in literature databases such as Medline and PubMed. This search can identify similar or related studies and the journals where they were published. Try to find between three and five manuscripts published in the last five years and decide whether they resemble yours in terms of quality and scope. Identifying previously published papers in your specific subject area is an excellent way to be sure that your research topic is of interest to the readership of a particular journal, and this will obviously increase your chances of review.

There are also a variety of online resources that suggest target journals based on keywords, abstract content and so on: **Journal/Author Name Estimator (Jane)®**, **Manuscript Matcher®**, and **JournalGuide® (Clarivate)**, etc. But remember that journals that have not previously published in the same area of research might also be interested in your findings.

The Journal Landscape

Before selecting a journal, it is essential to understand the broader landscape of academic publishing. Journals generally fall into two main categories: open access and subscription-based. **Open access journals** allow readers to access content freely, usually supported by **Article Processing Charges (APCs)** paid by authors or their institutions. In contrast, **subscription journals** restrict access to paying readers or institutions, with costs typically covered by academic libraries or research organizations. Understanding which model best fits your goals and funding situation is key. Additionally, researchers should familiarize themselves with major commercial and scientific publishers such as **Elsevier**, **Springer Nature**, **Wiley**, and **Taylor & Francis**, each of which follows distinct editorial practices and publication policies. Another critical element is journal indexing. Journals indexed in reputable databases like **SCOPUS** and **Web of Science** signal legitimacy and wide discoverability. Similarly, impact factor, which reflects the average

number of citations to articles published in a journal, is often used as a proxy for quality and prestige—though it should be considered alongside other qualitative factors.

Considerations for Journal Selection

Choosing the most appropriate journal for your research is a crucial decision that can significantly influence the visibility, credibility, and impact of your work. With an ever-expanding number of academic journals available, selecting the right one requires more than just a surface-level understanding of publication venues. Authors must weigh a variety of factors to ensure that their manuscript reaches the intended audience, aligns with the journal's scope, and meets the standards required for acceptance.

- **Impact Factor**

Impact factor is still the default method to assess the quality and reputation of a journal. It displays the total citations made of the journal's articles. IF is the most important factor that researchers consider when they submit a paper, and it is often used as a measure of a researcher's success in his/her field. Funding agencies, Institutions, employers, and university committees also consider IF the best method to evaluate a paper. Journals with higher IF often have a higher profile, and this obviously will increase your article's visibility.

Nonetheless, the validity of the Journal IF as a metric for journal quality is controversial due to the many factors that can influence the rating achieved, and to the fact that not all these factors are directly related to the quality of the publications within the journal. Although it is tempting to submit a manuscript to the journal with the highest IF factor, it is important to evaluate your research objectively and decide whether it is truly suitable for a high IF journal. Otherwise, you will risk wasting valuable time and effort as you submit your manuscript time and again to multiple journals.

Other scores are: Scimago Journal Rank, Eigenfactor, SNIP, Cited Halflife, Altmetric Attention Score, and Cited Score, etc.

- **Aims and Scope**

Even remarkable research may be rejected if the topic is not in line with the scope of the journal. This information is usually readily available on the journal's homepage. Check to see whether the journal is publishing research like yours. The topics, the focus and the novelty and potential impact are all important factors.

- **Publication Types**

Find out which article types (e.g., originals, reviews, systematic reviews, metanalysis, case reports, images, and so on) are accepted and which are not; limits on length (word count) or number of illustrations or references; whether supplementary files are allowed, or the prior inclusion of a preprint (unsubmitted draft) in a preprint server such as arXiv or bioRxiv. Submission to a journal that does not accept the type of article you have written is a sure way of guaranteeing immediate rejection. Please read the guide to authors carefully and follow the instructions closely. The abstract and cover letter are your way of presenting yourself to the Editor: Take your time over them.

To avoid initial rejection, the registration of research in international databases (ClinicalTrials, Research Registry, PROSPERO, etc) is often mandatory. The inclusion of a reporting Checklist, depending on the type of manuscript (e.g., STROBE, PRISMA, and so on) is normally required. You should check this before sending your manuscript.

- **Publication Mode and Rights**

You should be familiar with the journal's characteristics: Type of publication: print only, print plus online version (PDF), which may be a longer version, with or without early view ("early online", "online first", or "ahead of print") version, or only online version, which is becoming the most usual type. Supplementary materials/media and relevant links: Many journals have links to supplementary materials in an online repository. Type of subscription: Membership-based, pay per view, site license, subscription, or open access.

- **Open Access**

Open access means that the entire content of the paper is freely available to all readers, with no need to subscribe to a journal or pay to access the paper. Many researchers prefer this publication model because it can help disseminate their research to a wider audience. There is no doubt that increasing the accessibility of your article will ensure that your target audience will have access to your article worldwide, but expenses are high. There are three formats:

- **Green Open Access**

Which means free access to preprint or accepted manuscript (final draft) on a personal website, institutional website, or nonprofit repository such as

Pubmed®, with or without a time delay before uploading; in most cases the copyright will be retained by the publisher.

- **Gold Open Access**

Free access to the final published version (typically on the publisher's website), and authors retain copyright. Gold open access gives you ownership of your work after publication and ensures that the most accurate, final form of the paper is available to all readers.

- **Hybrid open access**

Some content is open access, and some is subscription-based; this can depend on authors' choice or on journal policy, which may include "delayed open access".

- **Copyright**

It may be owned by the author or the journal publisher. Another important issue is whether a Creative Commons license is available.

- **Publication Charges**

Publication charges are the fees that you will be charged to publish in a journal. It is essential to read the section about charges very carefully. If you are on a tight Article budget, you may need to rule out open access journals or journals with high publication charges. There are several types of charge: Submission fee, production fee and charges for color figures (usually black and white images do not incur charges). Find out whether there are free batches of reprints or online copies, and free online access for authors to published articles. Some editorials waive article processing charges to authors from developing countries for open access publication.

Find out whether the following services are provided free or included in the publication charge: Editing/illustration service; news release service; marketing; social media promotion; post-publication commenting and altmetrics (article-level metrics) tracking.

- **Publication Frequency**

Check the journal's table of contents for the number of monthly/weekly articles, articles per issue and issues per year, and how often articles appear in the journal's Online First section.

- **Time from Acceptance to Publication**

There are several publication times: From submission to first/final decision, first online publication, final (online) publication. If you need rapid publication, you should specifically look for journals that offer fast response times and short periods from acceptance to publication.

The normal time taken for a good manuscript to be published in a reputed journal is around 9 mo to 12 mo. The optimum time limit for rejection is 4-6 wk[7]. The best time is to wait for the special editions from reputed journals and then submit a relevant paper: due to the smaller number of research papers submitted at that time, your research stands a better chance of being published.

- **Rejection Rates**

It is important to know the selectivity (% acceptance rate) of the journal. The acceptance rate in poor journals is over 90%, while predatory journals publish almost everything, they can lay their hands on. In good journals the acceptance rate is 10%-20%.

- **Readership**

Identify the interests of the readers. Be sure that the target audience you are trying to reach is part of the readership of the journal. Your goal is not just to be published, but also to be widely read in your field. Review the "Most Downloaded" or "Most Cited" lists from your potential journals. If you find that your manuscript is similar in scope to articles in this list from one of your potential journals, this suggests that if you publish in this journal your article will be widely read as well.

- **Indexing**

To increase the online visibility of your article, be sure that the journal is indexed in the online databases that your target audience will use to find articles. PubMed® and Scopus® are the main indexing services used by researchers in the biomedical sciences.

- **Editor's Preferences**

It is also very useful to identify the interests of the journal's editor. Just because your manuscript may be similar in scope to the journal, this does not mean that the Editor is currently interested in your topic. Check when similar

articles were published in the journal. If similar articles have been published within the last two or three years, this suggests that the Editor is probably interested in your topic. Look at recently published Editorials, Review Articles, and Special Issues, because these usually focus on topics the Editor feels are currently important for the field. If you find that your manuscript is similar in scope to others published by one of your potential journals, this suggests that the Editor may regard your research topic as important.

- **Peer-Review**

Articles published in peer-reviewed journals enjoy high esteem among the academic and scientific community. The quality of the reviewers is also a crucial factor. There are several types of peer-review: The most common is a closed (single- or double-blind) review, but open peer-review is also performed. Other types of review are collaborative (in which reviewers may discuss issues with each other, or reviewers/editors may discuss specific points with the authors) and transparent (in which reviews are published with or without reviewers' names). As for the speed of peer review, you should find out whether fast-track review and pre-submission inquiries are allowed. Journals with very short review times (1-2 wk) are often poor quality (though bear in mind that there are also some top journals with very short review times).

- **Transfer Cascades**

One feature of scientific publishing that many researchers are unaware of is the existence of "families" or portfolios of journals inside the same publishing house. Many portfolios with prestigious journals that receive a high volume of submissions also contain less competitive journals that publish papers on the same or similar topics. In many cases, if a publisher with this type of portfolio rejects your paper from a high IF journal, they may offer to transfer it to a lower IF journal inside the same "family". This can help accelerate the overall publication process by avoiding the need to identify a new journal, reformat the paper and prepare a new submission. Bear in mind that some transfer cascades direct you to journals with publication charges.

- **Journal Reputation**

Remember that publishing in poor quality journals does not count as scientific contribution to knowledge. Avoid sending work to predatory journals, as this

is a waste of time and effort. There are many points to check in order to ensure the quality of the journal before sending your manuscript:

- ◆ Are the journal/publisher, editor and editorial board well known?
- ◆ Is the journal affiliated to a professional society?
- ◆ Is the journal recommended by your library/society?
- ◆ Do your colleagues read the journal, or have they been cited there, or have they published there?
- ◆ Is the journal known for ethics, quality content, language, and production?
- ◆ Is the journal included in respected general or specific indexes, with a long history and a permanent online archive?
- ◆ What are the journal's bibliometric scores (IF)?
- ◆ How old is the journal (those aged 10 years or more are often good)?

After all the hard work that goes into performing successful research, the final crucial step is choosing the right journal in which to publish. With almost 10000 journals in the Directory of Open Access Journals alone, choosing the best journal can be a daunting prospect even for experienced researchers, and making the wrong decision can cost valuable time, money, and effort. Key factors are being aware of the aims and scope of the journal; identifying papers that are similar in quality and scope; assessing the journal's restrictions; and considering the impact factor and potential reach. Despite the existence of support platforms, the development of artificial intelligence platforms may help us to decide the best journal for our research. Items like specific area, number of patients included, clinical relevance and innovation may well be able to identify the most interesting journal.

Search Platforms for Journal Selection

To aid in journal selection, a range of digital tools and platforms can help identify suitable outlets based on your manuscript's content. One of the most user-friendly tools is the Journal/Author Name Estimator (JANE), which allows authors to paste their title or abstract and receive a list of potential journals ranked by relevance and impact. JANE draws on data from MEDLINE and PubMed to match your manuscript with suitable venues. Additionally, platforms like SCOPUS and SciMAGO Journal & Country Rank provide detailed journal metrics, including citation data, h-indexes, and ranking by discipline. These tools allow you to explore journals by field and geographic region, helping you make a data-informed choice. Furthermore, visiting individual publisher websites—such as those maintained by Elsevier, Springer, or PLOS—can offer valuable insights into submission guidelines, editorial processes, and recent publications, giving you a better sense of whether your work would be a good fit. Combining these tools and resources provides a comprehensive approach to finding the right journal for your research.

Avoiding Predatory Journals

Predatory journals—also called fraudulent, deceptive, or pseudo-journals—are publications that claim to be legitimate scholarly journals, but misrepresent their publishing practices. Some common forms of predatory publishing practices include falsely claiming to provide peer review, hiding information about Article Processing Charges (APCs), misrepresenting members of the journal's editorial board, and other violations of copyright or scholarly ethics. Because of their increasing prevalence, this article aims to provide helpful information for authors on how to identify and avoid predatory journals. These are disreputable or deceptive publishers that exploit the open access model by charging publication fees without providing genuine peer review, editorial oversight, or transparent policies.

Common Characteristics of Predatory Journals

1. Claims to be a peer-reviewed open-access publication but does not provide adequate peer review or the level of peer review promised (some predatory journals repeatedly use a template as their peer review report).
2. Advertises a Journal Impact Factor or other citation metric on the website that is incorrect or cannot be verified.
3. May advertise an unrealistic time line for publication.
4. Publishes all articles for which authors pay an APC even if the article is low quality, unrelated to the topic of the journal, or nonsensical.
5. Publishes articles that have many grammar mistakes (little or no copyediting).

6. Editorial board includes people who do not exist, do not have credentials relevant to the topic of the journal, have affiliations that cannot be verified, or are real people who are not aware that they are listed as members.
7. Mimics name or website of other well-known, legitimate journals.
8. Aggressively targets potential authors through e-mails.
9. May state that offices are in one country but contact details are in another
10. Solicitation e-mails contain grammatical errors of phishing scams.
11. Lack of transparency about acceptance process or APCs, so that authors do not know how much they will be charged until their article is accepted.
12. Requires authors sign away their copyright to the article at the time of submission, making it impossible for the author to submit the article to another publisher.
13. Publishes articles submitted before the authors have signed the publishing agreement, then refuses to take the article down if the author withdraws the submission.
14. Removes articles or entire journals from the web without warning or informing authors.

Helpful Tips to Determine Whether a Journal or Publisher Is Predatory

- ✓ Are there spelling or grammatical mistakes or other questionable characteristics on their website or in the solicitation e-mail
- ✓ Is the peer review process clearly stated on the website?
- ✓ Does the website clearly state the publishing fees?
- ✓ Is the journal indexed in databases that you use,¹⁸ such as MEDLINE¹⁹ for biomedical journals?
- ✓ Note: Not all journals with articles in PubMed are indexed for MEDLINE. To check if a journal is indexed for MEDLINE, check the journal's page in the NLM Catalog—you can do this by following the link for journal in the article's record in PubMed. If the NLM Catalog listing says the journal is "Currently indexed for MEDLINE," this means that all articles published in this journal will appear in PubMed.
- ✓ Can you easily contact the publisher?
- ✓ Are the time stamps of incoming e-mails consistent with the working hours of the reported country of origin?
- ✓ Does the phone number have the correct country code?
- ✓ Is the journal a member of the Committee on Publication and Ethics (COPE) or Open Access Scholarly Publishers Association (OASPA) or listed in the Directory of Open Access Journals (DOAJ)?

Free and Subscription Resources That May Be Helpful for Identifying Predatory Journals.

Free resources

- 1. ThinkCheckSubmit.org** is a nonprofit website with a step-by-step guide to evaluating journal quality.
- 2. The Directory of Open Access Journals (DOAJ)** is a nonprofit database containing a searchable list of high-quality, peer-reviewed open-access journals in all scholarly disciplines.
- 3. The Committee on Publication Ethics (COPE)** is a group of publishing organizations that agree to uphold certain standards ethical publishing practices. The COPE website provides a searchable database of reputable publishers and journals, guidance for authors and editors on addressing suspected misconduct, and example cases and advice for authors that have dealt with predatory publishers.
- 4. SCImago Journal Rank** is a free online database that provides measures of journal citation rates based on data in the Scopus database. Journals in SCImago can be sorted and filtered by subject, country, and open-access status. Using SCImago can help you determine whether a journal is actually indexed in a major citation database and help you identify other high-quality journals in your subject area.
- 5. For biomedical journals, you can check to see whether a journal is in the National Library of Medicine (NLM) catalog.** If a journal's entry in the NLM Catalog is listed as "Currently indexed for MEDLINE" that means that all new articles published in this journal will appear in the citation database PubMed. If a journal is not in the NLM catalog or has an entry in the NLM Catalog but is not listed as indexed for MEDLINE that may mean that it is either not considered a biomedical journal or that it might not be considered a trustworthy journal.
- 6. Stop Predatory Journals** is a crowd-sourced project that provides lists of potentially predatory journals and publishers, journals with names intended to imitate those of legitimate journals, and potentially fake or misleading journal metrics systems. However, the administration is anonymous so the process for labeling predatory publishers lacks transparency.

Subscription Resources

- 7. Cabells International** is a for-profit company that sells subscription-based journal directories—Cabells' Whitelist, which contains journals verified to provide high-quality, peer review, and transparent business practices, and Cabells' Blacklist, which contains journals with questionable or problematic business practices. Both lists

contain in-depth explanations for each entry, an explanation of their methods, and ways for users and publishers to report errors or appeal mis categorizations.

8. **Journal Citation Reports (JCR)** is a journal analysis tool that is currently owned and maintained by Clarivate Analytics. JCR uses data from Web of Science, a subscription citation database also owned by Clarivate, to provide high-quality measures of journal impact metrics, including Journal Impact Factor (JIF). This tool can help authors verify citation metrics for potentially predatory journals and identify high-quality journals in their field.

CHAPTER 4

THE PEER REVIEW PROCESS

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The peer review process is a critical component of academic publishing, ensuring that research is validated and meets the standards of the scientific community. This book aims to provide a comprehensive understanding of the peer review process, its importance, and how to navigate it effectively.



Why Manuscripts Are Reviewed?

Peer review is a fundamental process in academic publishing designed to maintain the integrity and quality of scientific literature. Manuscripts are reviewed primarily to assist editors in making informed decisions about the publication value of a paper, ensuring that only research meeting established standards is disseminated. Reviewers critically evaluate the work to identify any factual errors, methodological flaws, or gaps in the literature that may undermine the study's validity or novelty.

Additionally, peer review provides constructive feedback that helps authors refine and improve their manuscripts, enhancing clarity, accuracy, and overall quality before publication.

The Ingredients of Good Science

High-quality scientific research is characterized by several essential elements that contribute to its significance and reliability. First, the novelty of the research topic is crucial, as it should address unexplored questions or offer new perspectives that advance knowledge in the field. Comprehensive coverage of relevant literature demonstrates that the study is well-grounded in existing research and appropriately situates its contributions. The use of robust, high-quality data combined with rigorous and transparent analytical methods ensures the validity and reproducibility of findings.

Finally, thought-provoking discussions that interpret results within a broader context, explore implications, and suggest future research directions are vital for pushing scientific understanding forward.

Effective science reporting is essential for communicating complex research clearly and persuasively to the intended audience. Good organization and structure facilitate logical flow and readability, guiding readers through the study's background, methods, results, and conclusions seamlessly. The appropriate use of tables and figures plays a critical role in summarizing data, illustrating trends, and highlighting key findings, making the information more accessible and engaging.

Additionally, writing style and language should be tailored to the target readership, whether specialists or a broader scientific community, ensuring that the manuscript is both understandable and compelling without sacrificing scientific rigor.

Types of Peer Review

The three most common types of peer review are **single-blind, double-blind, and open peer review**. Peer review is constantly evolving. Over time, new models have developed, such as **transparent, collaborative, and post-publication peer review**. Read our helpful guide below to learn more about the types of peer review conducted at Wiley.

- **Single-Blind Review**

In the single blind peer review model, the reviewers remain anonymous to the authors, while the reviewers know the identity and affiliation of the authors. This approach is the most commonly used form of peer review in scientific journals. By keeping reviewer identities hidden, the process aims to encourage reviewers to provide candid and unbiased critiques without fear of retaliation or personal conflict. At the same time, knowing who the authors are allows reviewers to consider the context of the research, including the authors' previous work and expertise, which can inform a more informed and nuanced evaluation of the manuscript.

One of the main advantages of single blind review is that anonymity protects reviewers, enabling them to offer honest and sometimes critical feedback without concern for personal repercussions from authors. This freedom can enhance the thoroughness and objectivity of the review. Additionally, because reviewers know the author's identity and institutional background, they can leverage this information to assess the credibility of the research and interpret findings in light of the author's prior contributions and expertise. This contextual knowledge can be especially helpful in highly specialized fields where author reputation and past work may provide important insight.

Despite its benefits, single blind review has notable drawbacks. Knowing the identity of the authors may unintentionally bias reviewers, sometimes leading them to give more favorable treatment to well-known or prestigious researchers, potentially resulting in less rigorous scrutiny of their work. This can undermine the fairness and objectivity of the review process. Moreover, there is a risk of discrimination based on non-scientific factors such as gender, nationality, or institutional affiliation, which can unfairly disadvantage certain authors. Such biases are ethically unacceptable and can compromise the integrity and inclusivity of academic publishing. Therefore, while single blind review has practical strengths, it requires ongoing vigilance to minimize these potential issues.

- **Double-Blind and Triple-Blind Review**

In the double-blind peer review model, both the authors and reviewers remain anonymous to each other, creating a system where neither party knows the identity of the other. This method is widely adopted in social sciences and humanities journals, where author identity might otherwise influence the review process. Extending this further, the triple-blind review conceals the identities of the authors, reviewers, and even the editors managing the manuscript, maximizing anonymity throughout the entire review process. This heightened level of confidentiality aims to minimize bias and ensure a fairer evaluation based solely on the content and quality of the research.

One of the key advantages of double- and triple-blind review is the reduction of bias in the evaluation process. By keeping identities concealed, reviewers are less likely to be influenced by factors such as the author's reputation, gender, ethnicity, or institutional affiliation, leading to a more objective assessment of the manuscript's merit. This system also provides mutual protection: authors are shielded from potential prejudices, while reviewers can critique the work freely without concern for personal backlash. This mutual anonymity fosters an environment that encourages honest, unbiased feedback, promoting fairness and integrity in academic publishing.

Despite the theoretical benefits, true anonymity is not always guaranteed in double- or triple-blind reviews. Reviewers may be able to deduce the author's identity based on distinctive research topics, citation patterns, writing style, or specialized methodologies, particularly in niche fields where the pool of researchers is small. This can inadvertently reintroduce bias into the process. Furthermore, some critics argue that knowing the author's identity can help reviewers assess the work more accurately by providing context, such as the author's previous contributions or expertise, which may inform the interpretation of results. Without this information, reviewers might miss nuances or misunderstand the significance of the research, potentially impacting the quality of the review. Therefore, while double- and triple-blind reviews aim to enhance fairness, they also face practical challenges and debates about their overall effectiveness.

- **Open Peer Review**

Open peer review is a model where the identities of both authors and reviewers are fully disclosed to each other throughout the review process. This form of peer review is gaining traction in a growing minority of journals, although it has yet to become widely popular or universally accepted among reviewers. In some cases, journals also publish the reviewers' comments alongside the final article, making both the feedback and the reviewer's identity publicly accessible. This level of transparency seeks to foster a more open and constructive dialogue between authors, reviewers, and readers.

The primary advantage of open peer review is the enhanced transparency it brings to the evaluation process. Knowing that their identities and comments are visible encourages reviewers to act with greater accountability and professionalism, which often leads to more thoughtful, thorough, and civil critiques. This openness can improve the overall quality of both the review and the published article, as reviewers are motivated to provide well-reasoned and constructive feedback. Additionally, the publication of review comments alongside the article offers readers valuable insights into the peer review process, promoting trust and deeper understanding of the research's strengths and limitations.

Despite its benefits, open peer review also faces significant challenges. Some reviewers may decline to participate in journals using this system due to concerns about being publicly associated with negative or critical feedback, fearing potential backlash or damage to professional relationships. This reluctance can reduce the pool of willing reviewers and potentially slow the review process. Moreover, junior or

early-career researchers might feel hesitant to critically evaluate the work of senior or influential figures in their field, especially if their own career advancement depends on maintaining good professional networks. This dynamic could undermine the objectivity and rigor of reviews, limiting open peer review's effectiveness in certain contexts.

- **Transparent Peer Review**

Transparent peer review is an evolving model in which the entire peer review process—including reviewer reports, authors' responses, and editors' decision letters—is published alongside the final accepted article. This approach aims to increase openness by giving readers direct access to the critical dialogue that shaped the manuscript, providing deeper insight into the rigor and integrity of the evaluation process. Notably, transparent peer review can be implemented alongside traditional single- or double-anonymized review models, preserving reviewer anonymity if desired. Authors typically have the option to opt out of transparent peer review at the time of submission, allowing them to choose the level of openness they are comfortable with.

Compatibility with Existing Review Models is transparent peer review is designed to work flexibly within existing journal workflows. For journals that utilize Wiley's Manuscript Transfer Program, which facilitates the transfer of manuscripts and reviewer reports between journals, the publication of transferred reviewer reports under transparent peer review is subject to obtaining prior consent from both the authors and reviewers. This ensures respect for the confidentiality and preferences of all parties involved while promoting transparency. By integrating transparency without mandating full openness, this model balances the benefits of accountability and reader engagement with the need for discretion and protection within the peer review process.

Author Control and Consent is a key feature of transparent peer review is the empowerment of authors to decide whether their manuscript's peer review history is made publicly accessible. This opt-out option acknowledges that not all authors may feel comfortable with public disclosure of reviewer comments or editorial decisions, which can include sensitive or critical feedback. Offering this choice respects individual preferences and encourages wider adoption by addressing concerns related to privacy and professional risk. Through this flexibility, transparent peer review fosters a culture of openness and trust while accommodating diverse comfort levels within the research community.

- **Collaborative Review**

Collaborative review encompasses a range of peer review approaches where multiple individuals work together as a team to evaluate a manuscript. One common format involves two or more reviewers jointly assessing the paper, engaging in discussions to reconcile differing viewpoints, and submitting a single, unified report. Another variant encourages direct collaboration between reviewers and authors, where reviewers actively engage with authors to refine and improve the manuscript iteratively until it meets the standards for publication. This method fosters a more

interactive and cooperative dynamic, shifting the traditional adversarial model of peer review toward a partnership focused on enhancing the quality of the research.

A significant advantage of collaborative review is its constructive and inclusive nature. By removing the traditional barriers that separate authors and reviewers, it promotes open communication and mutual understanding, which can lead to more meaningful and detailed feedback. The collaborative process often feels less restrictive and more supportive, as it emphasizes teamwork and shared goals rather than unilateral judgment. This approach can accelerate manuscript improvement and foster positive professional relationships, encouraging a more collegial research culture where authors benefit directly from reviewers' expertise during the revision process.

Despite its strengths, collaborative review presents some potential drawbacks. One concern is the loss of independent evaluations, which are fundamental to traditional peer review's rigor. When reviewers work together closely, there is a risk that diverse perspectives may be diluted or that consensus might suppress legitimate criticism. Furthermore, direct collaboration between authors and reviewers can blur the lines between critique and authorship, raising questions about the originality of contributions and the impartiality of the appraisal. This close involvement may complicate the clear separation of roles necessary to maintain transparency and objectivity in the review process.

- **Post-Publication Review**

Post-publication review refers to the ongoing evaluation and critique of research papers after they have been formally published. This can take various forms, such as interactive comment sections, discussion forums, or online platforms where readers, experts, and the wider community can appraise, question, and discuss the findings presented in the article. Importantly, post-publication review typically complements, rather than replaces, traditional pre-publication peer review. It recognizes that scientific knowledge is dynamic and benefits from continual scrutiny and refinement beyond the initial editorial process.

One of the key advantages of post-publication review is that it acknowledges the evolving nature of scientific understanding. By allowing research to be reassessed and updated in response to new evidence, critiques, or alternative interpretations, it promotes transparency and continuous improvement. This system enables errors to be identified and corrected more promptly, and it opens up scholarly dialogue to a broader audience, including those who may not have been involved in the initial peer review. Consequently, post-publication review can enhance the accuracy, relevance, and trustworthiness of the scientific literature over time.

Despite its benefits, post-publication review challenges some foundational principles of academic publishing, particularly the concept of the "version of record." This traditional model relies on a fixed, citable version of an article that provides a stable reference point for future research. Revising papers after publication may complicate this stability, raising questions about how to properly cite and contextualize updated versions. Moreover, established mechanisms such as corrections, errata, and letters to the editor have historically addressed post-publication issues within journals.

While these methods are more formalized and controlled, the open and often informal nature of post-publication review can sometimes lead to inconsistent or unmoderated critiques, which may affect the perceived reliability of the scholarly record.

The Importance of Selecting Appropriate Reviewers

Choosing qualified and impartial reviewers is critical to the integrity of the peer review process. Reviewers should have expertise relevant to the manuscript's topic, allowing them to critically evaluate the scientific rigor, novelty, and significance of the work. Additionally, selecting reviewers without conflicts of interest ensures an unbiased assessment, fostering trust in the review's fairness. Journals and authors often suggest potential reviewers based on their knowledge of the field, but it is essential to verify that these individuals can provide objective, constructive feedback. Proper reviewer selection ultimately strengthens the quality and credibility of published research.

Preparing for Submission

Before submitting a manuscript, authors must complete several important preparatory steps to ensure a smooth review process. All co-authors should review and approve the final version of the manuscript to confirm accuracy and agreement with the content and findings. Preparing a list of potential reviewers—experts who are knowledgeable in the subject area and free from conflicts—can facilitate the editorial process and speed up the review. Additionally, authors should carefully check all references for accuracy and completeness, ensuring proper citation of prior work. Adhering strictly to the target journal's submission guidelines, including formatting, word limits, and ethical disclosures, is essential to avoid delays or outright rejection due to procedural errors. This thorough preparation reflects professionalism and respect for the publication process.

The Peer Review Process

Reviewers play a crucial role in ensuring the quality and integrity of academic publications by carefully evaluating several key aspects of a manuscript. They first assess the originality and novelty of the work, determining whether the research presents new insights, advances knowledge, or fills a meaningful gap in the existing literature. The appropriateness of the study design and methodology is also scrutinized to ensure that the research questions are addressed using valid, reliable, and ethically sound methods. Reviewers examine the clarity and transparency with which results are presented, including whether data are reported accurately and supported by appropriate tables and figures. They also evaluate the discussion to confirm that interpretations are well-reasoned, grounded in evidence, and contextualized within the broader scientific field. Finally, reviewers assess the reliability and significance of the conclusions, ensuring that they are justified by the data and contribute constructively to advancing understanding in the discipline.

Reviewers serve as gatekeepers and mentors in the academic publishing ecosystem, validating the scientific rigor and credibility of submitted research. By critically appraising manuscripts, they help improve the overall quality of published work, guiding authors to refine their studies and strengthen their arguments through constructive feedback. Beyond quality control, reviewers contribute to the advancement of their fields by promoting robust and ethical research practices. Additionally, their involvement fosters networking and

collaboration within research communities, connecting experts across institutions and disciplines. This collaborative dynamic not only enriches the peer review process but also supports professional development, knowledge exchange, and the collective progress of science.

Facing Paper Rejection

"Rejection is redirection" – Bryant McGill and Matt Haig. Rejection is an inevitable and common experience in the research publication process, affecting even the most experienced authors. Rather than viewing rejection as a failure or personal setback, it should be understood as an integral part of scholarly growth and development. Manuscript rejection provides valuable opportunities for reflection and improvement, encouraging authors to refine their ideas, strengthen their arguments, and enhance the overall quality of their work. Embracing rejection with a constructive mindset helps build resilience and fosters continuous learning, ultimately contributing to greater success in future submissions.

Common Reasons for Rejection

Manuscripts are often rejected for several recurring reasons that authors should be aware of to improve their chances of acceptance. One common cause is misalignment with the journal's aims and scope, where the topic or focus of the study does not fit the publication's target audience or thematic priorities. Poor writing quality and presentation can also lead to rejection, as unclear, disorganized, or error-ridden manuscripts hinder comprehension and diminish the perceived credibility of the research. Additionally, papers that fail to offer new or significant contributions to the field are less likely to be published, as journals prioritize studies that advance knowledge and provide novel insights over repetitive or incremental findings.

Learning from Rejection

Constructive reviewer feedback is one of the most valuable outcomes of manuscript rejection and should be carefully considered to improve the manuscript. Authors can use this feedback to address identified weaknesses, clarify ambiguities, and strengthen the rationale, methodology, and conclusions. After making the necessary revisions, resubmitting the manuscript to a more appropriate journal—one whose scope better matches the research focus or whose audience may be more receptive—can increase the likelihood of acceptance. Viewing rejection as an opportunity for revision and strategic repositioning empowers authors to navigate the publication process more effectively and enhance their overall scientific contribution.

What Not to Do After Rejection?

After receiving a rejection decision, it is important to avoid common pitfalls that can harm your professional reputation and future publication prospects. One major misstep is responding impulsively or emotionally, such as reacting defensively to criticism or sending angry messages to editors or reviewers. Complaining about the decision publicly, whether on social media or academic forums, can damage relationships and reflect poorly on the author. Additionally, disregarding reviewer comments or dismissing feedback outright without consideration undermines the opportunity to improve the manuscript. Maintaining composure and professionalism at this stage is crucial, as how you handle rejection can influence future interactions with editors, reviewers, and colleagues.

Guidelines for Responding to Feedback

When responding to reviewer feedback after rejection or revision requests, it is essential to approach critiques objectively and constructively. Avoid taking criticism personally; instead, recognize that feedback is intended to improve the clarity, accuracy, and impact of your research. Carefully read all comments, even those that may seem harsh or unfair, and identify actionable suggestions for improvement. In your responses to editors or reviewers, maintain a respectful and professional tone, addressing each point clearly and thoroughly. If you disagree with specific comments, explain your reasoning politely and provide supporting evidence. Demonstrating professionalism and openness to constructive dialogue not only enhances the quality of your manuscript but also builds a positive reputation within the academic community.

The peer review process is a cornerstone of academic research, playing a vital role in upholding the quality, reliability, and credibility of published work. It serves as a rigorous quality control mechanism through which experts critically evaluate manuscripts to ensure that research findings are sound, methodologies are appropriate, and conclusions are justified by the data. By subjecting studies to this thorough scrutiny, peer review helps prevent the dissemination of flawed, misleading, or unsubstantiated claims, thereby protecting the integrity of the scientific record. Moreover, understanding the nuances of this process—including the expectations of reviewers, the types of feedback commonly received, and the reasons behind decisions such as rejection—empowers researchers to approach publication strategically. Learning to navigate challenges like manuscript rejection with resilience and openness to constructive criticism enables authors to refine their work, improve clarity and impact, and ultimately contribute more meaningfully to the advancement of knowledge in their fields. Embracing peer review as a collaborative and iterative part of research development not only strengthens individual studies but also fosters a culture of excellence and continuous improvement across the academic community.

Addressing Peer Reviewer Comments Effectively

The peer review process is a foundational element of academic publishing, serving as a quality control mechanism that helps validate the integrity, originality, and significance of scholarly work. Through careful assessment by subject matter experts, peer review offers authors valuable critiques that can strengthen their research. This chapter is designed to support authors in navigating one of the most challenging yet vital parts of publishing: responding to reviewers' comments. By offering practical guidance and strategies, it aims to demystify the process, helping researchers turn critique into constructive improvement and ultimately increase their chances of successful publication.

Understanding Reviewer Comments

Reviewer comments typically fall into distinct categories that require different types of responses. Constructive criticism includes specific, actionable suggestions intended to improve the manuscript's clarity, accuracy, or depth. General feedback offers broader observations that may lack specific guidance but highlight overall areas needing attention, which authors must interpret carefully. Factual corrections point out concrete errors in data, references, or methodology that must be addressed to maintain the credibility of the work. Among these, constructive criticism is especially valuable, as it helps authors refine their

arguments, consider alternate perspectives, and deepen their engagement with relevant literature—contributing to both personal growth and scholarly rigor.

Preparing to Respond

Before drafting a response, authors must first collect and thoroughly review all feedback received from editors and reviewers. It's essential to approach this process with an open mind, recognizing that while revisions can be demanding, they present an opportunity to elevate the quality of the research. Authors should then prioritize the comments, identifying which suggestions are critical to address—such as major methodological concerns or conceptual weaknesses—and which are more cosmetic or stylistic. By distinguishing between essential and minor revisions, authors can manage their time effectively and ensure that their responses are both thoughtful and efficient.

Crafting Your Response

An effective response letter is structured and professional. It typically opens with a brief summary of the manuscript and expresses appreciation for the reviewers' insights. Each comment should then be presented—usually verbatim—followed by a clear, point-by-point response. Authors must respond to every comment, whether positive or negative, to demonstrate thoroughness and engagement. Explanations should be concise, respectful, and direct, avoiding defensiveness. This structured and transparent approach helps reviewers and editors quickly understand how concerns were addressed, ultimately facilitating a smoother review process and increasing the likelihood of acceptance.

Strategies for Effective Responses

One of the most effective ways to engage with reviewer comments is to agree with valid critiques and clearly explain how they were addressed in the manuscript. However, in cases where authors disagree with a suggestion, it's crucial to respond respectfully and with evidence-based justification. Maintaining a polite and professional tone, even in disagreement, reflects academic maturity. Supporting one's position with references to established literature or data can strengthen the response and reassure reviewers that the decision to retain or revise certain elements was well considered and scientifically grounded.

Making Revisions

After formulating responses, authors should implement the necessary changes directly in the manuscript. These revisions should aim to clarify the writing, enhance methodological robustness, or improve the presentation of results—based on reviewer input. It is equally important to highlight where these changes have been made. Authors can use tracked changes, line numbers, or a separate annotated version of the manuscript to clearly guide reviewers through the updates. This transparency not only saves reviewers' time but also demonstrates the author's attention to detail and responsiveness to feedback.

Finalizing Submission

Before resubmitting, authors should carefully review their response letter to ensure that it is clear, organized, and professionally worded. The tone of the letter is crucial—it should reflect gratitude and respect toward the reviewers and editors for their time and expertise. A polite and appreciative tone acknowledges that the peer review process is a collaborative effort aimed at improving the quality of academic work. Demonstrating

professionalism in communication not only reflects well on the author but also contributes to a constructive and collegial scholarly environment.

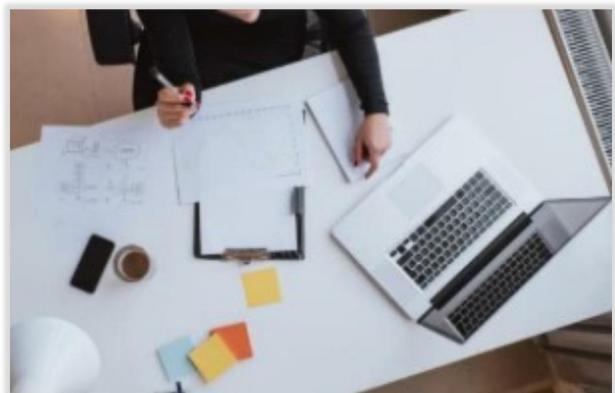
Responding to reviewers' comments is a vital skill for any researcher. By mastering this process, authors can enhance their manuscripts, contribute to the academic community, and ultimately achieve publication success. This book serves as a comprehensive guide to navigating the complexities of reviewer feedback and improving the quality of scholarly work.

CHAPTER 5

ETHICAL RESEARCH

ETHICAL RESEARCH

Ethical considerations in research are not mere options – they are the foundations and core to the responsible conduct of research. They safeguard not only the protection of research participants but also the integrity, validity, and value of the process and output itself. As Murphy and Dingwal's Ethical Research theory emphasize, ethical research adherence with formal rules, but about ongoing, reflexive judgment and respect for all those involved in and affected by the researchers, research activities, and research outputs. Therefore, ethical considerations must be infused in every phase of the research – from conceptualization and design to collection, analysis, and dissemination.



Core Ethical Principles

Murphy and Dingwal's Ethical Research theory, structured on established traditions in research ethics, outline four core ethical principles that aim to guide researchers. These ethical considerations are widely applicable across different research disciplines but are significantly relevant especially in the social sciences and humanities research:

1. Non- maleficence

It is a significant ethical obligation of researchers to avoid causing harm, encompassing physical, psychological and reputational harm, to participants. The researchers must ensure that the design and process of the research minimize potential negative impacts, and researchers must be attentive to unintended consequences throughout the study. This critical assessment of potential negative impacts and risks must extend throughout the duration of the research, including post-research impacts.

For example, in the context of social sciences and humanities, interviews that explore into sensitive topics such as trauma, marginalization, and identity may trigger psychological discomfort or emotional distress. Additionally, research initiatives may cause social harm (e.g., causing damage to participant's reputation within the community), cultural harm (e.g., misappropriation or misrepresentation of traditions), or legal harm (e.g., exposing someone's undocumented status).

In order to avoid causing harm to research participants, researchers must employ and engage in various risk assessments all throughout the research process. Ethical reflexivity—constantly assessing or questioning potential implications and impact of one's actions – is imperative. Researchers may

employ confidentiality safeguards, trigger warnings, debriefing sessions, or even adjusting and modifying questions to mitigate sensitivity.

2. Beneficence

More than avoiding harm, researchers have ethical obligation to yield positive outcomes and identifiable benefits. While non-maleficence focuses on avoiding harm, beneficence put emphasis on the proactive pursuit of good. Research must offer value – these may include contributing new insights, solving practical problems, serving as standpoint of policy, or addressing social needs. Furthermore, beneficence includes a commitment to reciprocity, such as sharing results with participants or involving them in shaping how findings are used. For instance, a study exploring narrative experiences or case studies about marginalized youth could be a basis of more inclusive and responsive educational policies or youth support programs.

3. Autonomy (Self-determination)

The autonomy/ self-determination of research participants must be respected. Respecting the autonomy/ self-determination of research participants is means acknowledging and supporting research participants' rights to make informed choices about their engagement and participation in research. Respecting research participants' autonomy involves reinforcing the requirement for informed consent – meaning that the consent to participate is based on a full understanding of the research objectives, methods and design, risks, and potential benefits. Informed consent must be an ongoing process, not a one-time formality, and participants must be free to withdraw without consequences at any stage. For instance, those researches involving vulnerable groups or long-term engagement such as ethnography, consent must be consent and dialogic -- revisited and reaffirmed throughout the research process.

4. Justice

Ethical research demands researchers to be fair in participant selection, treatment, and the distribution of research benefits. This principle raises critical questions about who is included in research, who benefits, and who bears the costs. Special attention should be given to vulnerable populations to prevent exploitation or marginalization. Selection of research participants should be based on scientific and ethical justification. Justice also stresses cultural sensitivity and equitable representation in research outputs,

guaranteeing that findings do not reinforce stereotypes or marginalization. Researchers must ensure that no group is unduly burdened or excluded without justification, and that vulnerable populations are not exploited. Justice also requires equitable access to the benefits of research, such as improved services or knowledge dissemination. For instance, if a study is conducted in a low-income community, it is ethically problematic for the community to bear the burden of participation without gaining access to the study's benefits. Researchers must share the fruits of research equitably—by making findings accessible (e.g., through public reports or community meetings), acknowledging contributors appropriately, and advocating for changes that benefit those studied.

Other Ethical Considerations

1. Commitment to Honesty

Honesty ensures the credibility of research and fosters trust among researcher community, research participants and the wider public. Researchers must highly uphold truthfulness and integrity in every stage of research process – from conceptualization of research and formulation of research questions to gathering and analyzing of data to reporting of results. Commitment to honesty includes being transparent about methods, acknowledging limitations of the study, and reporting of findings accurately, even if the results are unexpected or unfavorable.

2. Avoidance of Plagiarism

Plagiarism—presenting someone else's work or ideas as your own without proper attribution—is a serious ethical breach. Researchers must credit all sources appropriately and respect intellectual property. Avoiding plagiarism is not only about avoiding copying texts but also about acknowledging conceptual contributions, data, or methodologies borrowed from others.

3. Respect for the Dignity and Privacy of Participants

Every participant in research has a right to be treated with respect, dignity, and confidentiality. This means being sensitive to personal values, cultural backgrounds, and individual vulnerabilities. Researchers must ensure privacy by protecting personal data, anonymizing information where appropriate, and avoiding intrusions into areas deemed private by participants.

4. The pursuit of truth

This principle highlights the responsibilities of the researchers to seek knowledge rigorously without bias and to be guided by intellectual curiosity, critical thinking, and methodological rigor, not personal or political agendas.

Ethical considerations are fundamental to every stage of the research process. Researchers must always be reminded that ethical considerations are not peripheral to the research process; they are its moral and intellectual compass.

To be always reminded of ethical considerations, here are the "**10 reminders**" of ethical research based on aforementioned discussion:

1. Do not falsify, fabricate, or misrepresent data — uphold a Commitment to Honesty at all stages of research.
2. Do not plagiarize the work, ideas, or words of others — always credit original sources.
3. Do not disregard the dignity or privacy of research participants — treat all individuals with respect and confidentiality.
4. Do not suppress or distort findings — honor The Pursuit of Truth and the public's right to accurate knowledge.
5. Do not cause harm — adhere to the principle of non-maleficence by minimizing risks to participants.
6. Do not conduct research without the intent to benefit — ensure the study promotes Beneficence and has meaningful outcomes.
7. Do not ignore participants' rights to make informed decisions — respect their Autonomy or Self-Determination throughout the process.
8. Do not discriminate or show bias — uphold Justice by treating all individuals equally and fairly.
9. Do not involve individuals in research without Informed Consent — always provide full disclosure and ensure voluntary participation.
10. Do not compromise ethical principles for convenience or personal gain — ethical conduct must guide every phase of the research process.

How do Higher Education Institutions Operationalize Ethical Research?

In the Philippines, the Commission on Higher Education (CHED) sets the framework for ethical research in higher education institutions by implementing policies like CHED Memorandum Order No. 31, s. 2012, that integrates ethical standards into institutional research programs. Higher Education Institutions are mandated to create/establish Research Ethics Committees (RECs) or Institutional Review Boards (IRBs) to monitor and review research involving human participants. These bodies are guided by internationally accepted research ethics principles such as justice, respect for persons, and beneficence, consistent and reinforced with pertinent documents such as Declaration of Helsinki and the National Ethical Guidelines for Health and Health-Related Research (NEGHR) by the Philippine Health Research Ethics Board (PHREB).

Universities in the Philippines operationalize ethical research by implementing policies by:

- Requiring ethics clearance prior to data collection;
- Offering training and certification for faculty and student researchers on research ethics;
- Institutionalizing plagiarism detection tools and ethical authorship guidelines;
- Integrating ethics education in graduate and undergraduate research courses.

These comprehensive ethical research practices ensure that Universities in the Philippines align local research activities and programs with global ethical standards while nurturing a culture of integrity and accountability in academic research. The operationalization of this policy is managed by the University Research Ethics Office (UREO), which oversees ethics review through several mechanisms.

Ateneo de Manila University

Ateneo de Manila University put an eye on integrity and honesty, justice and fairness, safety and beneficence, human rights and dignity, and competence in its University Code of Ethics in Research. The Ateneo de Manila University's Code of Ethics in Research **provides a comprehensive framework for ethical conduct in scholarly inquiry**, guiding all members of its academic community. This code **emphasizes principles of integrity and honesty**, requiring accuracy in data, proper acknowledgement of sources, and transparency in research practices. It also **advocates for justice and fairness**, ensuring respectful collaboration, appropriate credit for contributions, and recognition of intellectual property rights. Furthermore, the code **prioritizes safety and beneficence**, promoting the responsible dissemination of knowledge, the humane treatment of animals, and research that benefits the community. Finally, it **upholds human rights and dignity**, mandating equal treatment, informed consent, and the protection of participants' privacy and autonomy.

Ateneo de Manila University also highlights department-level committees that handle undergraduate research involving minimal risk, faculty oversight for class-based human-interaction studies to ensure informed consent and data privacy, and the provision of flowcharts and templates for informed consent documents, available in both English and Filipino.

De La Salle University (DLSU)

At De La Salle University (DLSU), the Code for the Responsible Conduct of Research prioritizes respect for person, beneficence, and environmental justice. To implement this, DLSU employs a two-tier review system. DLSU ensures adherence to **respect for persons** through **obtaining informed consent from participants** as well as **protecting their privacy and confidentiality**. In terms of beneficence, the university mandates researchers **to maximize gains and minimize harm to participants, animal subjects, and environmental resources**. To ensure justice,

the university obligates researchers **to treat human participants morally, ensuring** a balance between potential benefits and risks, making research responsive to the needs of participants and communities, and justifying the inclusion/exclusion of participants. Other important ethical guiding principles from the University Code for the Responsible Conduct of Research include: excellence, truth, integrity and professionalism, cooperation, accountability, and zeal and growth.

The University Research Ethics Committee (U-REC) first classifies submissions as exempt (for projects collecting data from publicly available databases or public documents), expedited (for projects posing "minimal risk"), or full review (for projects posing "more than minimal risk" to participants, the environment, and communities), followed by a more detailed assessment/examination by the Research Ethics Review Panels (RERP). These bodies have authority to approve or disapprove research protocols depending on ethical standards and scientific merit, ensuring the protection of participants. Ethical compliance is further supported through digital submission protocols requiring version-controlled documents and adviser certifications.

The University of the Philippines Los Baños (UPLB) implements ethical research, primarily related to human participants, largely through its Research Ethics Board (REB) and the UPLB REB GL02 manual. The approval of a research protocol by the REB is contingent upon various factors, such as the minimization of risk to participants and communities, a reasonable benefit-to-risk ratio, equitable selection of participants, proper informed consent, proper monitoring of data for safety, and measures to protect privacy and confidentiality. Importantly, the REB also provides further safeguards for participants who are vulnerable to coercion or undue influence.

One of the core and obligatory duties for all researchers – staff, faculty, and students alike – is the determination and minimization of research risks. This entails a determination of foreseeable risks and individuals who may be impacted, an explicit estimation of the likeliness and extremity of such risks, categorization of the research risks, and formulation of a comprehensive risk avoidance or management plan. The UPLB seeks to neither underestimate risks that may put participants to unreasonable harm nor overestimate them and block valuable research. The REB thoroughly examines research protocols in accordance with evidence established by the researcher's comprehensive risk assessment and mitigation plan.

University of the Philippines Los Baños (UPLB)

The University of the Philippines Los Baños (UPLB) operationalizes ethical research, principally concerning human participants, mainly through its **Research Ethics Board (REB)** and the **UPLB REB GL02 guidance document**. The REB's approval of a research protocol is dependent on various criteria, such as the minimization of risks to participants and communities, a reasonable risk-benefit ratio, fair participant selection, informed consent, proper data monitoring for safety, and measures for privacy and

confidentiality. Importantly, the REB also provides further protections are in place for participants who may be susceptible to coercion or undue influence.

One of the core and obligatory duties for all researchers –students, faculty, and staff alike – is the **assessment and mitigation of research risks**. This entails identifying foreseeable risks and individuals who may be affected, gauging the likelihood and severity of these risks, classifying the research risks, and developing a comprehensive risk mitigation or management plan. The UPLB seeks to neither underestimating risk, which could expose participants to unjustified harm, and overestimating them, which could prevent beneficial research. The REB rigorously evaluates research protocols based on the evidence provided by the researcher's detailed risk assessment and mitigation strategy.

Internationally renowned universities operationalize ethical research through vigorous institutional frameworks, mandatory training, and rigorous review processes.

Harvard University

Harvard University operationalizes ethical research in the form of Institutional Review Board (IRB). All research subjects and participants need to be reviewed and approved by Harvard IRB, and function according to federal regulations (45 CFR 46, the "Common Rule") as well as the ethical principles of the Belmont Report (**respect for persons, beneficence, and justice**). Harvard IRB has authority to approve, require modifications, disapprove, suspend, or terminate research, and to monitor consent procedure and conduct of research. Harvard IRB also thoroughly assesses conflicts of interest, ensuring Comprehensive Oversight. Harvard University also highlights Mandatory Ethics Training, where all researchers participating in human subject research have to undergo ethical conduct of research training. Harvard fosters a culture of compliance and continuous education to the research community through responsible conduct of research seminars and resources for understanding ethical standards.

Stanford University

Stanford has established a central reference point or all university policies and regulatory training requirements on the ethical conduct of research. All research students, postdocs, faculty, and staff involved in research—including those funded by the National Science Foundation—must take the **Responsible Conduct of Research (RCR) Training** course that encompasses topics such as conflicts of interest, data management, and research integrity. Stanford implements seven-element framework that includes Organizational Leadership, Culture, and Governance; Standards and Procedures; Right People, Right Roles; Education and Awareness; Program Evaluation and Guidance; Consistent Enforcement of Standards

and Discipline; and Response and Prevention. The university's ethics committees and compliance offices ensure adherence to both internal policies and external regulations, fostering a culture of ethical research conduct.

University of Cambridge

University of Cambridge operationalize ethical research through **University Research Ethics Committee (UREC)**, which oversees the research ethics framework, sets high-level expectations, and provides guidance for ethical decision-making regarding research involving human participants and/or personal data. In terms of Ethics Policy and Procedures, researchers are required to consider ethical risks before starting research. Research projects with more than minimal risk must undergo review by school-level or department/faculty-level ethics committees. The level of ethical review is matched to the risk posed by the research, ensuring appropriate scrutiny while facilitating responsible research. Cambridge offers support and training to staff, students, and others engaged in research to maintain high ethical standards and awareness

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About the Authors

MR. GLEN B. MILLAR is a Licensed Professional Teacher, Research Specialist, and consultant. His academic foundation includes a Bachelor's degree in Secondary Education with a focus on General Science from Tayabas Western Academy and a Master's in Education specializing in Educational Management from Lipa City Colleges. He currently advancing his expertise through doctoral studies in Science Education at the University of Perpetual Help System Dalta. His distinguished career encompasses roles at prestigious institutions, including National University Manila. His teaching portfolio spans crucial subjects such as Science, Technology and Society, Assessment in Learning, and Inorganic and Organic Chemistry. Recognition of his excellence includes being named Asia's Outstanding College Instructor and Researcher by Instabright Publication, and receiving acclaim as an Exemplary Practitioner in Education and Educational Management. In the scholarly community, Mr. Millar maintains significant influence as an editorial board member for multiple international journals, including the International Journal of Social Science, Management and Economics Research. His research contributions include authored publications spanning one book, four research articles, and ten literary pieces in national and international journals. He further serves as the academic community as a Research Consultant and Book Reviewer for ETCOR – Educational Research Center. His commitment to educational advancement extends to active participation in numerous professional organizations, including the International Association of Research Scholars and Educators, and the Philippine Institute of 21st Century Educators, where he contributes to shaping the future of education and research methodologies.

DR. MINSOWARE S. BACOLOD, PD-SML (on-going) graduated from Emilio Aguinaldo College-Cavite in 2008 with a degree of Bachelor of Secondary Education major in History. At Philippine Christian University, he earned his Master of Arts in Education specialize in Educational Administration & Supervision in 2021 and his Doctor of Education specialize in Educational Management in 2023. Currently, he is also pursuing his Post-Doctoral Studies in Strategic Management and Leadership at the same institution. His exceptional performance and unwavering commitment to his profession earned him recognition as an "Outstanding Teacher". Throughout his career, Dr. Bacolod has held positions as a part-time instructor at Philippine Christian University and PNTC Colleges in Dasmariñas City, Cavite. Currently, he serves as Associate Professor I, Ethics Review Committee (ERC), Internal Quality Auditor Team of NU Philippines, former Social Sciences Cluster Head, former Nationalian Coordinator at NU MOA in Pasay City. In this capacity, he imparts his vast knowledge and expertise by teaching a variety of Social Sciences courses.

Additionally, Dr. Bacolod is a published and registered author-writer at the National Book Development Board of the Philippines and various publishing industry platforms, further contributing to the dissemination of knowledge and his expertise. He authored and co-authored numerous textbooks and magazines.

DR. PAUL O. DAYANDAYAN is a nurse educator, family nurse practitioner, and humanitarian whose professional journey spans over three decades and multiple countries. A graduate of De Ocampo Memorial College in Manila (BS Nursing, 1995), he went on to earn his Master of Science in Nursing, major in Family Nurse Practitioner, from the University of the West Indies, Mona, Jamaica (2016). He completed his Doctor of Philosophy in Nursing Education, major in Nursing Leadership and Management, at Saint Paul University, Manila.

Dr. Dayandayan's life and career are a testament to compassionate service, academic excellence, and leadership. He spent nearly two decades (2000–2018) in Jamaica as a brother evangelist and nurse coordinator under the religious order Missionaries of the Poor, where he cared for the abandoned, homeless, and chronically ill—offering selfless service without compensation. He was the Principal of the Missionaries of the Poor Institute of Learning for Practical Nursing, where he trained over 150 missionaries, many of whom went on to become licensed healthcare professionals around the world.

Paul also served as an adjunct faculty member at the Nell Hodgson Woodruff School of Nursing at Emory University, Georgia, USA (2009–2012), where he co-developed a program that integrated spiritual and holistic care into nursing education. This same program was accredited by the Jamaican Ministry of Education under his leadership.

Currently an Associate Professor 1 and College Research Coordinator at the Department of Nursing, National University, Manila, he previously held academic and leadership positions at Emilio Aguinaldo College. His clinical background includes work in operating room nursing, community outreach, pediatric care, and mental health. He holds multiple certifications, including as a Certified Infusion Nurse, NLP Master Practitioner, and diplomas in Mental Health and Psychology.

A prolific researcher and published author, Paul has contributed articles and studies on chronic wound management, caregiving in residential facilities, spiritual and mental health, and medical wound care. His scholarly excellence has earned him multiple awards, including:

- Award of Excellence in Education and Innovation in Health Sciences (AHEdMRI & UNIFFIED INC, 2022)
- Service Award for Educational Leadership (UNIFFIED INC, 2023)
- Best Paper Presenter at PANACCEA International Research Congress (2025)
- Best Paper Presentation at the NU Research Congress (2025)

He is affiliated with numerous professional organizations such as the Philippine Nurses Association (PNA), Critical Care Nurses Association of the Philippines, Inc. (CCNAPI), Nurses Association of Jamaica (NAJ), Philippine Nursing Research Society, and the Philippine Association of Nursing Authors for Clinical, Community, Education, and Administration (PANACCEA), among others.

Guided by a deeply rooted Christian philosophy, Paul believes in teaching not just skills, but values. He inspires his students with the mantra: "Be a source of hope to those who are hopeless, and a source of light to those who are in total darkness." His

work reflects a profound commitment to service, faith, and the transformative power of education.

REDEN P. LATAG, LPT, MAED as an educator and researcher, Reden P. Latag hopes to bring a wealth of expertise to the field of education. A proud graduate of Manuel S. Enverga University Foundation Candelaria Inc. with a degree in Bachelor of Secondary Education major in English, Reden P. Latag furthered his academic pursuits by earning a Master of Arts in Education major in English from Laguna State Polytechnic University San Pablo City, Laguna. Currently, Reden P. Latag is pursuing Doctor of Education major in Educational Management at Laguna State Polytechnic University San Pablo City. Professionally, Reden P. Latag serves as Senior High School Research Coordinator, Academic Coordinator, and Part-time College Instructor. With a strong passion for education and research, Reden P. Latag hopes to contribute to the academic community through teaching, research, and service. Currently, Mr. Reden works at CSTC Inc. - Sariaya Campus.

PROF. RODERICK T. VERZOSA is a writer, researcher, and educator. He is a distinguished faculty member of the General Education Department at Emilio Aguinaldo College, Cavite Campus, where he also serves as the Team Leader for the course The Contemporary World.

He holds a Bachelor of Arts in Political Science from the University of Pangasinan and a Bachelor of Secondary Education, Major in Social Science, from Lyceum Northwestern University. He is a Licensed Professional Teacher and earned his Master of Arts in Public Administration from Rizal Technological University in Mandaluyong City. He is currently pursuing his Doctor of Philosophy in Administration Management, with a specialization in Public Governance, at Philippine Christian University in Taft, Manila.

Beyond academia, Professor Verzosa is a Professorial Lecturer at Far Eastern University – Silang, Cavite, where he teaches Political Science and courses such as Qualitative and Quantitative Analysis of Political Data.

His diverse professional background includes working at a prominent law firm in Makati City and serving as an Account Coordinator for Ernst & Young in the Middle East. His interdisciplinary expertise and global experience enrich his teaching, research, and writing in the fields of politics, governance, and public administration.

About the Editor

DR. JOVI JANE CULLARIN-BERNALES is a distinguished educator and researcher in the field of Physical Education and Sports. She currently serves as Assistant Professor IV at the University of Batangas Lipa Campus, where she has been a dedicated faculty member since 2013. She also served as the Physical Education Coordinator from 2020 to 2023. Dr. Bernales holds a Doctor of Philosophy in Educational Management from Batangas State University (2021) and is currently pursuing another Ph.D. in Physical Education and Sports at the University of Perpetual Help System in Las Piñas City. She also holds a Master's degree in Physical Education and Sports from Pamantasan ng Lungsod ng Maynila (2007), and a Bachelor's degree in Secondary Education major in MAPEH from the University of Batangas (1999).

Her leadership extends beyond the university, serving as the Director of Extension and Linkages of Instabright International Guild for Educators and Researchers, Inc. and Vice President for Program and Events at the International Association for Physical Education and Sports, Inc. since 2022. Dr. Bernales has earned numerous accolades, including the Most Outstanding Educator in the field of Physical Education and Sports by the International Eminence Awards in Tokyo, Japan (2025), Outstanding Educator of the Year by the 4th Instabright International Guild (2024), and Outstanding Individual in the Field of Sports and Recreation by the Instabright Global Excellence Awards (2023). She is also a Dangal ng Lahi Awardee as the Philippine Exceptional College Professor and Researcher of the Year (2023), and was recognized with a 10-year Service Award at the University of Batangas in 2023.

Her expertise and insights have also been sought after in various conferences and seminars. She has served as a resource speaker at national and international forums, including the International Conference on Educational Leadership and Research (2023), a research webinar on thesis advising for Physical Education and Sports (2023), a MAPEH-focused online education seminar at FAITH College (2022), and a youth leadership training workshop in Sariaya, Quezon (2024). Her unwavering commitment to academic excellence, research, and community engagement has made her one of the most respected figures in her field.

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Contact Number: 0927-7753-471
Website: www.philcadademian.com
Email Address: filcad2023@gmail.com

ABOUT THE AUTHORS



GLEN B. MILLAR, MAED, LPT, CRS
Assistant Professor IV
College of Education, Arts and Sciences
University of Batangas - Lipa City, Batangas
Research Specialist
International Journal Reviewer Research Consultant, ETCOR Inc.
Reviewer & Editorial Board of Phil-cad Academician Publishing



DR. MINSOWARE S. BACOLOD, PD-SML (C)
Associate Professor I
School of Arts and Sciences
NU MOA, Pasay City, Philippines
Founder & President, Phil-cad Academician Publishing
Founder, Association of Social Science Teachers, Researchers, Editors, Authors & Writers Inc. (ASSTREAW)



PAUL O. DAYANDAYAN, RN, MSN-FNP, PhD
Associate Professor I
College of Nursing
Research Coordinator
National University - Manila, Philippines
Published Author & Writer, Phil-cad Academician Publishing



REDEN P. LATAG, LPT, MAED
Part-time College Instructor
Senior High School Research Coordinator
Academic Coordinator
CSTC Inc. - Sariaya Campus
Published Author & Writer, Phil-cad Academician Publishing



RODERICK T. VERZOSA, MPA, LPT
Licensed Professional Teacher
College Professor
Far Eastern University-Silang Campus
Emilio Aguinaldo College-Cavite
Published Author & Writer, Phil-cad Academician Publishing

ABOUT THE EDITOR



DR. JOVI JANE CULLARIN-BERNALES
Associate Professor
University of Batangas
Community Service Coordinator
UBLIC-CCJE Department Adviser
UBLIC Red Cross



0927-77-53471

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Block 20 Lot 7, Purok Rosal Brgy. Datu Esmael-H1,
Dasmarinas City, Cavite, 4114, Philippines