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WRITING A RESEARCH PROPOSAL:
Essential Steps for an Effective Proposal
A Course for Master 2 EFL Students in Didactics of Foreign Languages



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Contents

Course Overview	2
Introduction	3
I. Course Description	3
II. Syllabus	4
III. Prerequisites	5
IV. The Place of the Course in the Curriculum	6
V. Course Objectives	6
VI. Modes of Assessment	7
VII. Useful Resources	8
Unit 1: Introduction to Research Proposals	9
1. Introduction to Research Proposal Writing	10
2. Crafting the Title Page and Cover Page	15
3. Writing the Introduction/Background	20
4. Statement of the Problem	31
5. Formulating Research Questions and Hypotheses	45
6. Defining Research Aims/ Purpose	61
7. Explaining the Significance of the Study	68
Unit 2: Literature Review	73
8. Developing Digital Reading Strategies	74
9. Conducting a Literature Review	82
Unit 3: Methodology	89
10. Writing the Methodology Section	90
11. Sampling Techniques in Research	101
12. Understanding Experimental and Quasi-Experimental Designs	108
13. Observational Methods	116
14. Designing and Conducting a Pilot Study	122
15. Questionnaires	128
16. Interviews	138
17. Tests	149
Unit 4: Proposal Completion and Academic Writing	160
18. Reviewing and Editing the Abstract	161
19. Compiling the Reference List	168
20. Sample Research Proposal Evaluation	181
Conclusion	183
References	184

Course Overview

The chief objective of the Research Skills course is to equip students with a clear, practical, and step-by-step guide to preparing and presenting their research projects, beginning with the development of a research proposal as the foundation of their work. The lessons are carefully structured to address learners' needs, through guiding students from selecting a clear and focused research title to compiling a properly formatted reference list.

The course introduces students to the essential principles of designing a research project, selecting appropriate research methods, and understanding the key components of a strong proposal. It guides them in identifying research problems, recognizing gaps in the literature, formulating research questions and hypotheses, as well as in establishing measurable objectives. Special attention is given to reviewing prior studies, building a theoretical framework, and applying effective digital reading strategies, *with the understanding that this focus does not replace print-based reading strategies but aims to raise students' awareness of digital reading practices, as they increasingly rely on digital devices during the course.*

In addition, the course explains how to design the methodology section by discussing research purposes (exploratory, descriptive, and explanatory), research strategies (such as experiments, surveys, and case studies), and the use of quantitative, qualitative, or mixed methods approaches. Students are also introduced to data collection techniques, including questionnaires, interviews, tests, and observations, along with procedures for piloting tools so as to ensure reliability and validity.

Through practical examples, guided exercises, and self-assessment activities, this course intends to aid students in building a robust foundation in research and ultimately producing a concise and comprehensive research project.

Introduction

Scientific writing is distinct from everyday writing. It is characterized by a specific methodology or logic of inquiry that differs from other methods because of its adherence to particular rules and characteristics essential for achieving scientific rigor. Engaging in the writing process requires time and a clear understanding of key components and concepts. It is not a collection of quotes and paraphrases, but it is rather a matter of analysing, evaluating and arguing a point based on evidence. Writing a research proposal for Master's students specializing in the Didactics of Foreign Languages is an essential initial step preceding the dissertation writing. However, it can be a challenging task, as many students tend to underestimate its importance. A research study should be reliable, valid, and unbiased. It should follow a logical approach grounded in a solid theoretical foundation, clearly address the research questions, and employ accurate measurement tools that are free from personal interests. Students are expected to utilize scientific methods to address real-world problems so as to advance second knowledge. Consequently, the Research Skills course, designed for Master's students in Didactics, presents a general overview of the fundamental principles of designing a research project, along with appropriate methods of investigation, to facilitate the research process and guide students through this academic endeavour.

I. Course Description

The Research Skills course includes 4 unites divided into 20 lessons, each designed to enhance research expertise and likewise strengthen writing skills, and covers reading strategies such as skimming, scanning, and careful reading to improve students' ability to navigate academic materials. The course provides a thorough overview of the procedures to be followed in writing a research proposal. It starts with a theoretical synopsis of key concepts, such as the purpose and relevance of a research proposal in a didactic context. Students are guided through the process of organizing the proposal, establishing precise research objectives, and developing measurable research questions and hypotheses in Lessons 5 through 6, for example. The course emphasizes the importance of critically reading online materials, synthesizing academic work, identifying research gaps, and highlighting the research's

contributions to the field. In subsequent lessons, students are trained to consider the research design, data collection methods, and data analysis techniques, ensuring alignment with their research aims. They will also learn how to pilot research tools before the main study begins. Additionally, ethical considerations and proper citation practices are addressed. The course encourages critical thinking by engaging students in hand-on activities such as evaluating sections of scientific articles, theses, and dissertations, either individually or in groups. Thereby, students will be able to draft well-structured research proposals and use them as a foundation for their dissertation. The time allotted for the course is 45 hours over 15 weeks, with three hours of instruction per week. All the course content and assignments are covered in class.

II. Syllabus

Unit 1: Introduction to Research Proposals
1.Introduction to Research Proposal Writing
2.Crafting the Title Page and Cover Page
3.Writing the Introduction/Background
4.Statement of the Problem
5.Formulating Research Questions and Hypotheses
6.Defining Research Aims/Purpose
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Unit 4: Proposal Completion and Academic Writing
18. Reviewing and Editing the Abstract
19. Compiling the Reference List
20. Sample Research Proposal Evaluation

III. Prerequisites

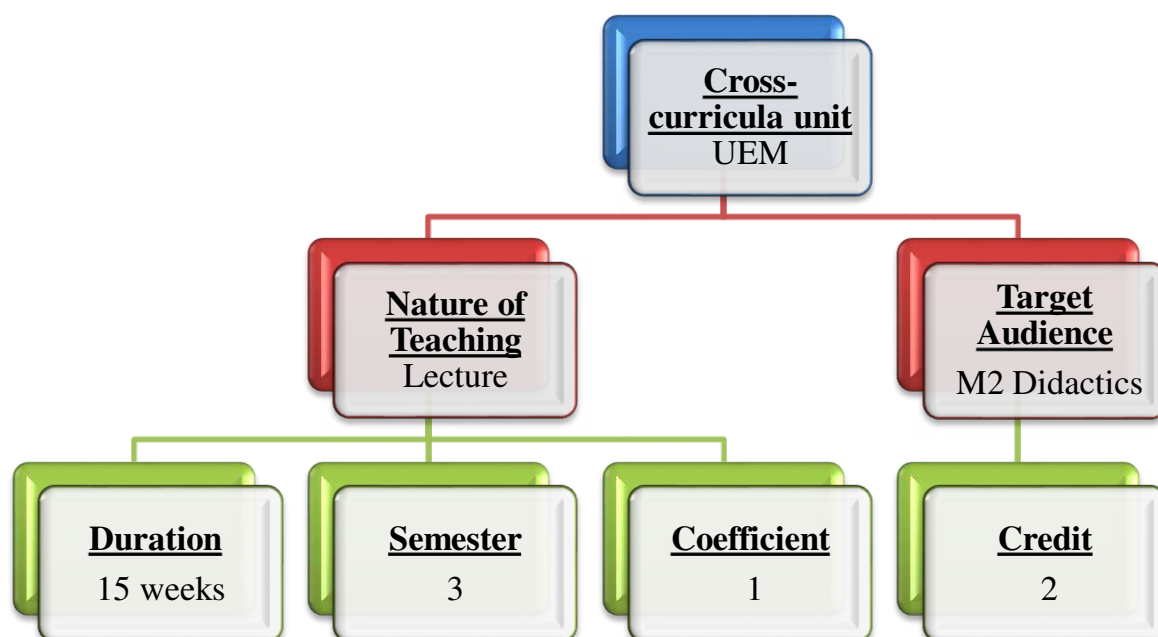
An understanding of **the basic concepts *acquired*** throughout **L3** and **M1 Research Skills course** is required to fulfil the course objectives.

Pre-Test: Diagnostic Questionnaire

Learning Objective: Identify areas that need improvement

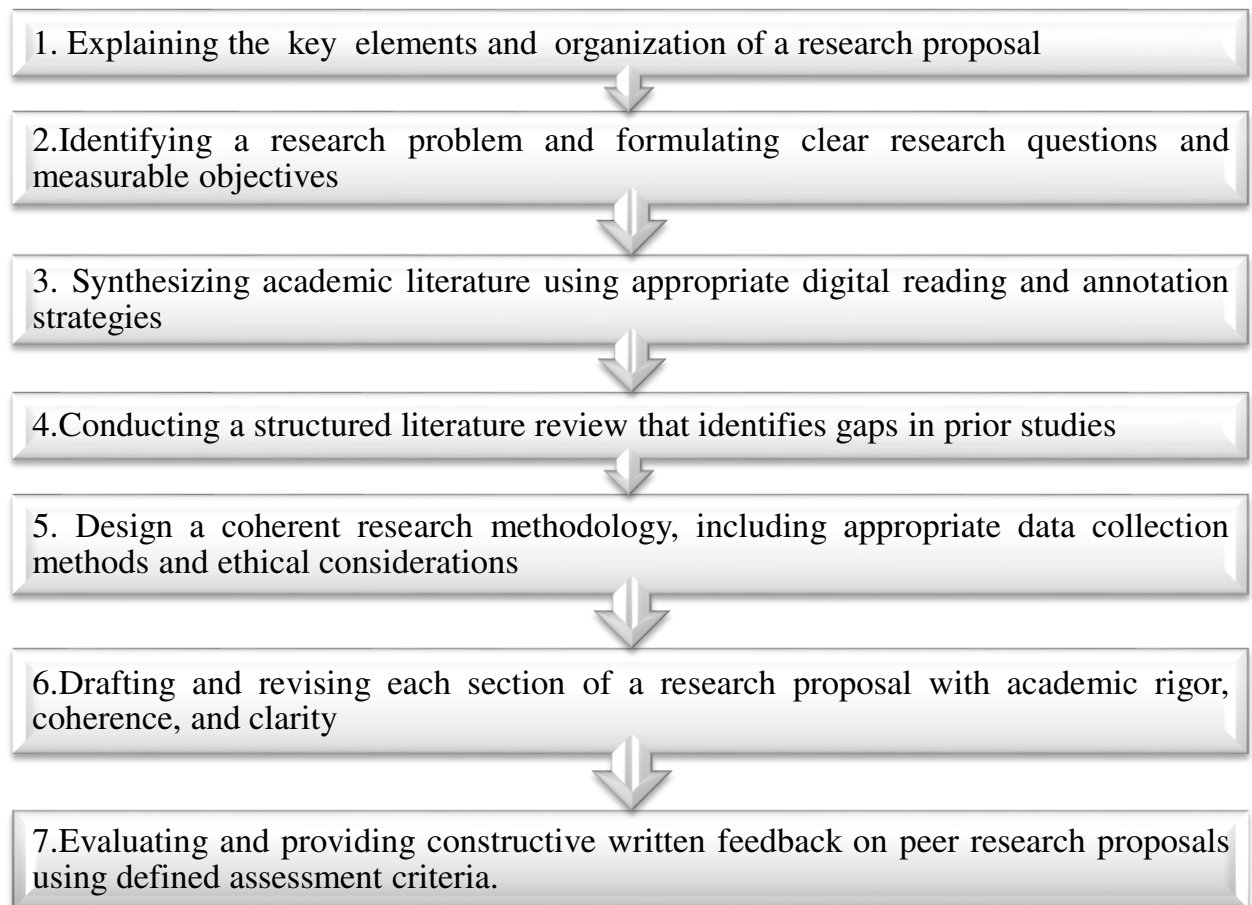
	<i>What key research skills did you learn in the last year's Research Skills module?</i>
	<i>Which concepts from the previous module do you find most applicable to your current research?</i>
	<i>What aspects of the Research Skills module did you find most challenging, and how did you overcome them?</i>
	<i>In what ways did the module contribute to your overall development as a researcher?</i>

IV. The Place of the Course in the Curriculum



V. Course Objectives

At the end of this course, the student is expected to be capable of:



VI. Modes of Assessment

This course includes *two graded assessment components*: **one continuous assessment test** and **one final examination**.

1. Continuous Assessment

- The continuous assessment accounts for **25%** of the final average grade.
- It is an individual writing test taken at the end of a given unit (mid-term test).
- The duration is forty-five (45) minutes.
- The format of the questions is similar to the final exam but shorter.
- A surprise test (in Week 10 or Week 12) may also be administered.

2. Final Examination

- The final examination accounts for **75%** of the final average grade.
- It consists of a written test taken at the end of the course.
- The duration of the exam is one hour and thirty minutes (1 hour 30 minutes).
- The exam covers all the lessons included in the syllabus.
- The overall pass mark for the course is **10/20**.

3. Extra Credit

Additional points may be awarded based on:

- Attendance
- Participation in class activities

❖ Formative Assessment

Formative assessment takes place during regular classroom sessions. Its purpose is to help students monitor their learning progress and understanding before the final examination. It may include:

- Written tests
- Short-answer questions
- Discussion questions
- Other classroom activities

The diagram on the left represents the overall grade; however, the one on the right shows the continuous assessment grade.

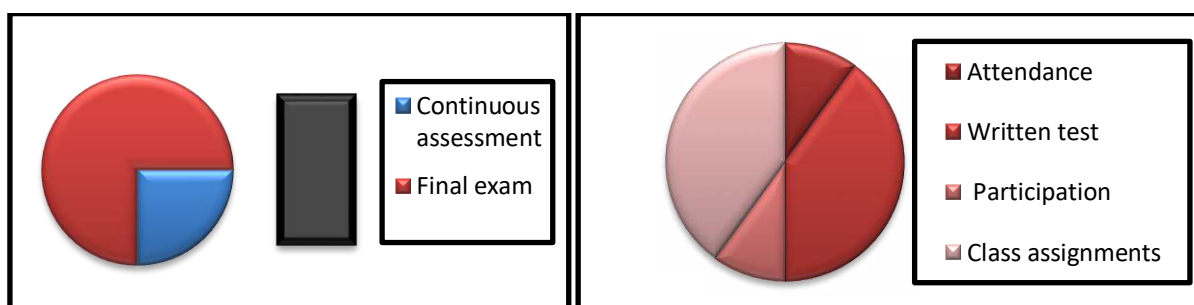


Diagram1: The Course Pass Grade

Diagram 2: The Continuous Assessment Grade

VII. Useful Resources

To improve your understanding of research skills and prepare for the course, the following books are highly recommended:

1. Cohen, L., Manion, L., & Morrison, K. (2012). *Research methods in education* (7th ed.). Routledge.
2. Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
3. Robson, C., & McCartan, K. (2016). *Real world research: A resource for social scientists and practitioners* (4th ed.). John Wiley & Sons.

❖ **Photo credit: Images obtained via Google Image**

Unit 1:
Introduction to Research Proposals



Introduction to Research Proposal Writing

Objectives: *At the end of this lesson, students will be able to:*

- ✓ Define the purpose of a research proposal
- ✓ Recognize the importance of crafting a well-structured research proposal
- ✓ Explain the key components and structure of a research proposal or thesis proposal.

1.1. What is a Research Proposal?

A research proposal is a formal manuscript that **outlines the plan** for a thesis or dissertation project [\[2, 5, 13\]](#). It describes:

- **What** is to be studied (*the research topic*).
- **How** the research will be conducted (*methodology*).
- **Why** the research is important (*justification for the study*).
- **When** the study will take place (*timeline and deadlines*).

A strong research proposal communicates *the overall research plan* to the thesis advisor and second reader(s), serving as a *roadmap* for the project. It is akin to the blueprint of a house that guides the construction of the research project [\[13\]](#).

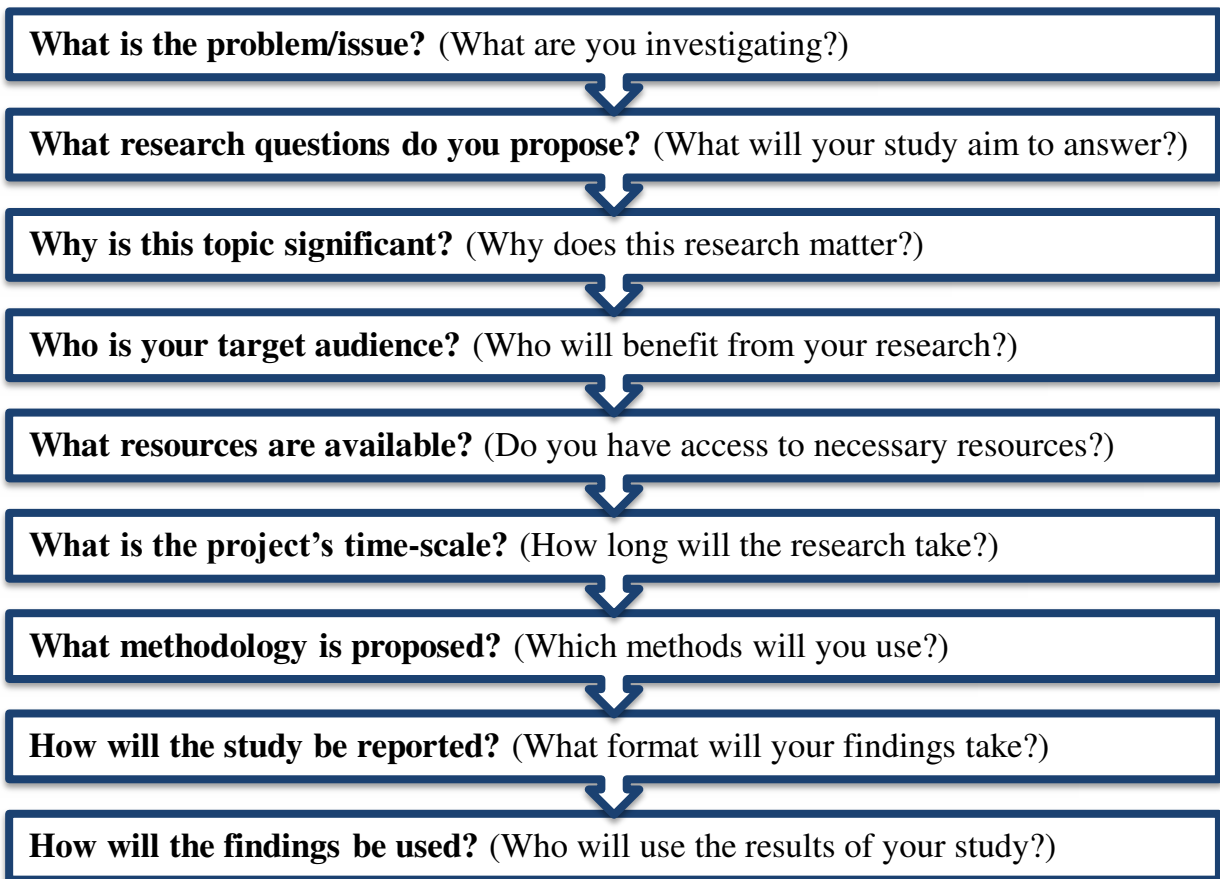
1.2. The Importance of Crafting a Research Proposal

Crafting an effective research proposal is essential because it sets forth the basis of your research. It helps:

- Identify the **research problem** and ensure it addresses a significant gap in knowledge.
- Establish a well-defined **methodology** for collecting and analyzing data.
- Demonstrate the **feasibility** of the research project by outlining resources, timeline, and available tools.

1.3. Key Questions for Novice Researchers

When drafting a research proposal [\[9\]](#), novice researchers should consider these key questions:



These questions will certainly guide you in narrowing down your topic, identifying the appropriate research strategy. Likewise, they help you ensure the clarity of your research objectives [\[9\]](#).

1.4. Structure of a Research Proposal

A coherent research proposal generally comprises the following elements:

Title	• A concise description of your research topic.
Abstract (Optional at this level)	• A brief summary of the proposed study, including objectives, methodology, and significance.
Introduction	• An introduction to the research problem, context, and significance of the study
Statement of the Problem	• Clearly identify the problem, specify what remains unsolved and delineate the gap your study addresses.
Research Questions	• Clearly state the research questions.
Research Objectives	• Clearly explain what you intend to accomplish.
Significance	• Detailed explanation of the importance and relevance of the research within its respective discipline.
Methodology	• Detailed explanation of the methods for data collection, analysis, and interpretation.
Timeline	• An outline of the project timeline, including key milestones and deadlines.
References	• List of sources cited in the proposal.

1.5. Finding a Research Topic

Undoubtedly, the initial stage in selecting a topic for a didactics research project is to make a list of topics that interest you and are pertinent to your specialty, then select one or two that seem promising. You will need to read a variety of sources if the topic is broad in order to narrow it down [\[17\]](#). Therefore, it has to be:

- Appropriate to your course or field of study.
- Aligned with your personal academic interests.
- Worth investigating due to its significance.

Here are some useful tips for narrowing down your topic [\[17\]](#):

- ✚ **Browse course textbooks** → Look for study questions or key concepts that intrigue you.
- ✚ **Attend advanced lectures** → Listen for areas of controversy or topics you would like to explore.
- ✚ **Engage with instructors** → Ask about current debates in the field.
- ✚ **Explore online forums** → Participate in academic discussion lists or browse archives of debates.
- ✚ **Review university websites** → Check out department sites for research interests and resources.

Your research project will be guided by the research proposal, which will assist you in defining the problem and research questions, choosing the appropriate methodology, and establishing a timeline for completion. In essence, *knowing how to develop a clear and concise proposal is crucial to the success and ease of your research.*



1.6. Let's Practice

Learning Objective: Discuss the main elements of a proposal relevant to your field of study.

Exercise 1: Identify the key components of a proposal by skimming through the following link:

1. York St John University. (2026). *Examples of research proposals*.

<https://www.yorksj.ac.uk/study/postgraduate/researchdegrees/apply/examples-of-research-proposals/>

Instructions:

Skim through **documents 3** and **4**, and review the others as needed to identify their main components. Pay attention to the following sections:

1. What is the overall structure of the proposal (main headings and subheadings)?
2. Can you find a section that outlines the purpose or objectives of the proposal?

3. Look for any methodology or approach mentioned. What does the proposal suggest for accomplishing its goals?
4. Are there any references or sources mentioned?
5. Write a brief summary of the key sections you identified

Exercise 2: *Group Work*

Choose a research topic from your field of study and brainstorm the key questions you would consider for the proposal.

Exercise 3: *Peer Review*

Share your research proposal structure with a peer and get feedback.

Further Reading

<https://pmc.ncbi.nlm.nih.gov/articles/PMC3282423/>

<https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=7254&context=etd>



Crafting the Title Page and Cover Page

Objectives: *At the end of this lesson, the student is expected to be able to:*

- ✓ Evaluate the appropriateness of a research title
- ✓ Create a research title that accurately reflects the scope and nature of the topic.

2.1. Crafting a Good Title

The title of a dissertation or a thesis plays a crucial role, as it *establishes the foundation of the work*. Its relevance, clarity, and precision are contingent upon how well it attracts readers. Although the process of designing a project title may seem straightforward, it is, in practice, one of the most challenging phases. A well-crafted title requires careful attention to detail, avoiding unnecessary elements while preserving originality, accuracy and correctness. Accordingly, the title should be *brief and descriptive* and covers the idea of your research [2]. A good title [5] is a *descriptive account of the research topic*, and it should:

- ✚ *Introduce your readers to the subject of your research.*
- ✚ *Specify the type of study to be conducted (e.g., qualitative, quantitative, experimental).*
- ✚ *Provide considerable detail which tells readers what is involved exactly in this research (what the research investigates).*

2.2. Exercise 1: What do the following titles tell us about the research? How are they framed?

1.Exploring the Impact of Digital Reading on Student Academic Writing in Algerian Universities

2. Understanding the Role of Social Media in Shaping Public Opinion: A Comparative Study between Algeria and France

3. The Influence of AI-Assisted Learning Tools on University Students' Critical Thinking Performance

4. The Impact of Emotional Intelligence on Speaking Performance in Secondary Education: A Case Study of Algerian High School Students

2.3. Components of the Title Page

This section outlines the key elements that should appear on the title page of your research work.

Research Title

- It is the most prominent text on the page.
- It summarizes the research topic succinctly.

Student Researcher's Full Name

- It is clearly stated below the title.
- It identifies who has conducted the research.

Institution Name

- It is about the academic institution where the research is conducted (e.g., University of Ali Lounici Blida 2).

Department Name

- The department that oversees the research (e.g., Department of English Language)

Supervisor(s)

- It includes full name(s) of the project's supervisor(s) guiding the student throughout the research.

Submission Statement

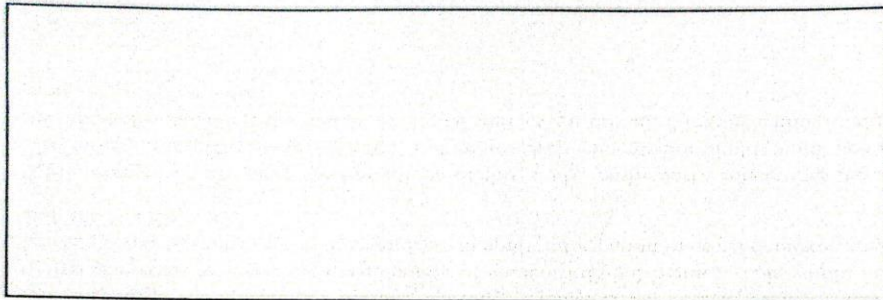
- A statement acknowledging the submission of the thesis in partial fulfilment of the degree requirements.
- Include the academic year or month and year when the thesis was defended or submitted.

By following these guidelines, you can create a well-organized and professional title page that aligns with the academic expectations for thesis and dissertation submissions.

2.4. Cover Page Template

The following is a concrete example you can use:

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
UNIVERSITY ALI LOUNICI - BLIDA 2
FACULTY OF ARTS AND LANGUAGES
DEPARTMENT OF ARTS AND ENGLISH LANGUAGE



Dissertation submitted to the Department of English in partial fulfillment of
the requirements for the degree of Master in Didactics of English Language

Submitted by:

Supervised by:

Board of Examiners:

Academic Year:

Submitted in :

Defended on :

CS Scanné avec CamScanner



2.5. Let's Practice

Learning Objective: Assess one's ability to identify title relevance.

Exercise 1: Fill in the table with your answers. For each title, indicate whether it is relevant to the field of didactics. If the title is not relevant, provide a brief justification and suggest an improved version of the title that better aligns with didactic research.

Proposed title	Relevant	Non-relevant	Justification	Improved title
Teaching African Literature in EFL Classrooms : The Case of the English Department of Blida 2 University				
A Study of Literature and Identity				
Some New Teaching Methods in Higher Education				
A Study of the Psychological Impacts of Student Behaviour in Classrooms				
Integrating Multilingualism in Language Teaching				

Exercise 2: Pair Work

What do the following titles indicate about the topic and type of study?

1. Abdalhamid, Fouad. (2012). *Listening comprehension strategies of Arabic-speaking ESL learners*. [Master's thesis, Colorado State University] <https://api.mountainscholar.org/server/api/core/bitstreams/88646ecb-b505-477e-9b0f-366dd2e21a0a/content>
2. Weerakanto, Pornnicha. (2019). *Digital literacies of english language teachers and students and their perceptions of technology-enhanced language learning and teaching in Thailand*. [Doctoral thesis, The University of Arizona]. <https://core.ac.uk/download/pdf/222806168.pdf>
3. MERABTI, Fayrouz. (2021). *Enhancing master students' dissertation writing through effective feedback: Electronic versus face-to-face feedback the case of second year master students at the department of English, University of 08 Mai*

1945 –Guelma- [Master's thesis, University of 8 Mai 1945, Guelma].
<https://dspace.univguelma.dz/jspui/bitstream/123456789/12734/1/M821.325.pdf>

4. Boumerzoug, Halima, & Bouakacha, Zahia. (2024). *Students and teachers' perceptions of the importance of project-based learning in fostering critical thinking: The case of Hassiba Ben Bouali –Chebli- secondary school –Blida* [master's dissertation]. University of Blida2.

5. Mermoul, Houssam. (2024). Emotional intelligence as a predictor of EFL learners' productive skills achievement: The case of third year EFL students and teachers in the department of English at the University Centre of Mila [Doctoral thesis]. Blida 2 University.

6. RIHANI, Bariza. (2021). *Investigating the role of the “cake application” in enhancing english foreign language learners' speaking skill the case of first year students of English at Biskra university.*[Master's thesis, Biskra University].
http://archives.univ-biskra.dz/bitstream/123456789/18462/1/RIHANI_Bariza.pdf



Writing the Introduction/Background

Objectives: *At the end of this lesson, you are expected to be capable of:*

- ✓ Identifying the purpose and significance of the background section within a research proposal
- ✓ Evaluating the key components that constitute to a well-developed background of the study
- ✓ Composing a coherent and relevant background section for your research project.

3.1. Importance of the Introduction to Research Writing

The introduction is one of the most crucial elements of any piece of research writing since it establishes the framework for the dissertation, even if it can be one of the most difficult to write. In this regard, a good introduction should engage the reader and encourage them to read the rest of the thesis by clearly *presenting the context of your topic, the motivation for your study, and the importance of your research*. The introduction helps *put your project in conversation with other projects on similar topics*. A compelling conclusion provides readers with a clear articulation of the thesis and enhances their understanding of the importance of the research; accordingly, it should be contingent upon an engaging introduction that captures their interest and prepares them for a deeper comprehension [\[17\]](#).

3.2. Common Structures of Introductions

Together, the topic and problem presented in introductions may differ according to their target audience. However, irrespective of the discipline, there exists an underlying structure that readers anticipate in all introductions. The most common structure [\[17\]](#) comprises three components:

Contextualizing the background

The opening context is called common ground because it establishes a shared understanding between the reader and the writer regarding the issue being addressed.

Statement of the problem (cf. Section 4.1)

It includes a state of incomplete knowledge or understanding and stresses the consequences of that condition—a significant gap in understanding.

Response to the problem

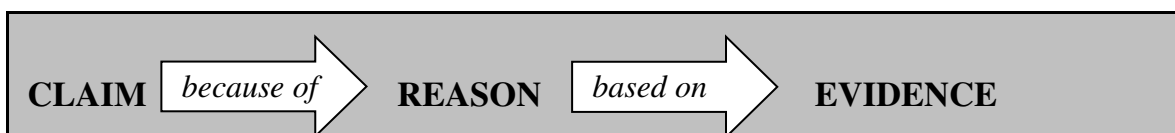
How the problem can be solved is by stating your solution explicitly toward the end of your introduction.

3.3. Background of the Study

Generally, the introduction of a research proposal gives necessary background information to your study and present readers with some sense of your overall research concern [1]. Stated differently, background of the study presents *a comprehensive review of the field, highlighting current developments, ongoing debates, major breakthroughs, prior research, and pertinent theoretical foundations*. This should include:

- ✚ **Study focus:** What is being investigated and why it matters.
- ✚ **Data used:** Rationale for the choice of data.
- ✚ **Contribution:** Significance of the project for the field

The researcher initially starts by arguing through stating their *claim*, which is essentially the main point or the assertion they intend to prove. The claim sets the foundation for the *argument* and provides a clear statement of the researcher's position on a specific topic. Accordingly, the core of a research argument consists of:



Source: Adapted from [17, p.112]

Example 1: *Anxiety negatively affects student performance*

This is the **claim**—it is the central *argument* that the researcher will explore and substantiate throughout the dissertation. The claim represents what the researcher is aiming to *confirm* or *establish*.

The next phase is that the researcher needs to explain **why** this claim is being made by providing a *reason* or the *rationale* behind it. The reason helps contextualize the claim and shows why it is both relevant and significant. Essentially, it provides the *logic* or *reasoning* for why the claim matters. This step explains the broader context of the argument, offering insight into the cause-and-effect relationship or the theoretical framework that underpins the claim.

Example 2: Anxiety can result in cognitive deficits that affect focus, memory, and decision-making—all of which are critical for academic success. When students experience anxiety, they find it extremely difficult to concentrate during lectures, remember material, and complete assignments.

In this step, the researcher provides the **reason** for the claim, showing why the claim makes sense and what the theoretical or psychological foundations are behind it.

Finally, the claim and reason need to be supported by **evidence**. This is where the researcher provides *concrete data*, *studies*, or *expert opinions* that validate the reasoning and prove that the claim is not just a personal opinion, but a well-supported argument grounded in facts or expert knowledge. The evidence could come from previous research findings, statistical data, experts' opinion, or real-world examples.

Example 3: Langah et al. (2024) found various anxiety-related factors that impact students' academic performance. Distractions, absent-mindedness, and decreased motivation were identified as obstacles hindering the academic progress of higher education students. Additionally, feelings of fatigue, loneliness, fear, panic, and depressive tendencies were found to be triggering factors of anxiety that negatively affect students' academic achievements [30].

Here, the evidence is provided from prior research (Langah et al. (2024), which supports the reason that anxiety impairs cognitive functions, and therefore impacts student performance.

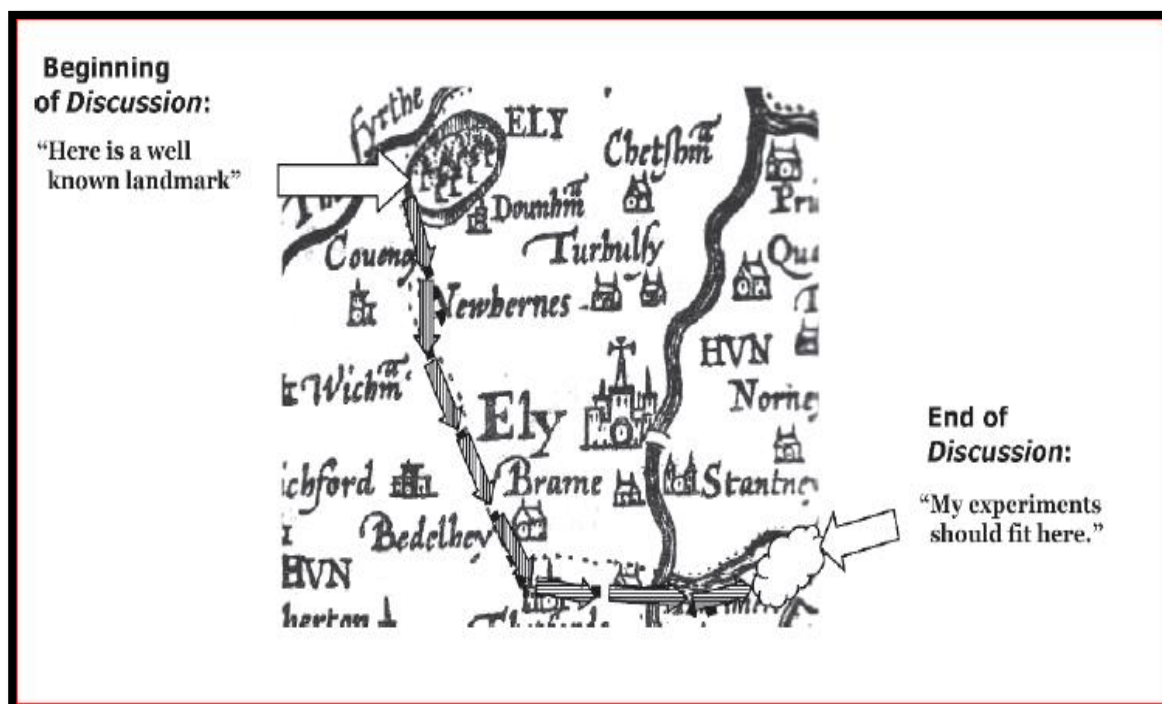
3.4. Skeleton of the Introduction/Background

The skeleton of the introduction/background comprises [16, p.140]:

- ❖ “Currently-Accepted General Statements”
- ❖ “Available Supporting Data”

Figure1

Skeleton of the Introduction/Background



Source: Adapted from [16, p.137]

The *Introduction* section begins by orienting the reader. It describes a part of the scientific puzzle that is complete, a region with well-recognized landmarks and clearly defined contours. The *Introduction* then leads the reader down a short, direct path toward an empty space—a gap in the puzzle—and announces, “Our data should fit here” [16, p.137].

The introduction thus establishes the research context.

3.5. Essential Elements of a Good Introduction

Thereupon, a good introduction [5] should:

- Establish the general field or real-world setting in which your research takes.

- Present the foundational concepts, theories, or empirical situations that frame your study, citing relevant literature where appropriate for readers to understand *where your study is coming from*.
- Give a clear sense of the project's breadth without going into excessive detail, ensuring that later sections like the purpose and literature review remain meaningful.
- Make the introduction interesting and informative to draw readers into your study.

Consider the following example:

Study box3.1

Title: *Exploring the Relationship Between Novice Teacher Autonomy and Workplace Engagement, Burnout, and Intentions to Remain in the Teaching Profession*

Introduction

“Over the last several decades amidst the backdrop of education reform and school improvement efforts, a maligned contest of tug-of-war has stymied progress for students in schools across America. On one end of this power struggle are independently-minded teachers, vying for more control over their work. Many teachers see the need for autonomy as paramount. Research indicates teachers believe autonomy facilitates creativity and innovation while providing room for experimentation and adaptation to suit the needs of their students (Vansteenkiste et al, 2004). Teacher autonomy contributes to teacher empowerment, and is a significant predictor for commitment to the teaching profession (Ertürk, 2023). When teachers believe they have higher levels of autonomy support from their leadership, they report lower levels of burnout and higher levels of workplace engagement (Skaalvik & Skaalvik, 2017). At the other end of the rope are state officials, district leaders, principals, and teacher leaders working to promote equity and uniformity in the name of serving all students. Evidence-based practices suggest that a guaranteed and viable curriculum is the best way to promote student achievement and narrow achievement gaps (Reeves, 2011) (Marzano et al, 2001). Decentralization of accountability measures in pursuit of autonomy can have a negative impact on disadvantaged and minority populations by allowing the reallocation of resources and a divergence from

proven instructional strategies (OECD, 2012). The dichotomous perception of this issue has caused many school leaders to see their role as a balancing act: restrict autonomy enough to ensure equitable, research-based practices are in place and accountability in schools exist, but provide enough autonomy to avoid burnout and strain which could lead to attrition among highly qualified teachers.

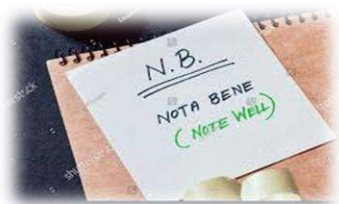
But what about the highly qualified teachers of tomorrow? This heuristic may serve leaders in a broad sense when making decisions for their faculty, but may be ineffective for vulnerable albeit significant population within their faculty: novice teachers. The present research aims to explore the effects of autonomy, both positive and negative, on this population, with the hopes that this clarity will help school leaders manage their novice teachers in a way that promotes engagement, avoids job strain, and diminishes attrition.”

Source: Bennett, B. (2025). *Exploring the relationship between novice teacher autonomy and workplace engagement, burnout, and intentions to remain in the teaching profession* [Unpublished doctoral thesis]. University of Arkansas, Fayetteville. <https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=7254&context=etd>

The background effectively establishes the research within the context of ongoing debates about teacher autonomy in schools. *The example uses real-world challenges in the education system, such as the struggle between teacher autonomy and the need for standardized, evidence-based practices.* It references existing literature on the benefits of autonomy for teacher creativity and engagement, as well as the challenges of balancing autonomy with equity in education (e.g., Ertürk, 2023; Skaalvik & Skaalvik, 2017; Vansteenkiste et al., 2004). The scope of the study is clearly indicated, focusing on how autonomy affects novice teachers, particularly in relation to engagement, burnout, and retention. *The background outlines the general focus on the relationship between teacher autonomy and workplace engagement, burnout, and retention, especially for novice teachers.* The introduction is engaging, framing the issue as a critical challenge for school leaders, particularly regarding the support and management of novice teachers. *The introduction is written in a way that invites the reader to consider the importance of the topic. The question about the impact of autonomy on novice teachers adds an element of curiosity, engaging the*

reader by positioning the research as a necessary step in resolving a complex problem.

Consequently, the purpose of the background section is to introduce and support the validity of the research study [5].



It is better to define **key terms** early in the introduction because defining key terms clarifies the concepts essential to understand the research study. Definitions may appear in a standalone section, be integrated into the literature review, or be placed where most relevant. For the reason that precision is required in formal research, articles introduce important terms early, and theses/dissertations often include a dedicated “Definitions” section grounded in reliable sources. Each term should be defined at its first mention, typically in the introduction, so the problem, research questions, and hypotheses are immediately clear. It is preferable to use operational definitions that state how the term is used or measured in your study rather than relying on abstract, purely conceptual meanings [33]. Thereupon:

- *When introducing terms, define them at their initial mention and, if suitable, organize them into a separate section.*
- *Ensure definitions are derived from reliable sources and are adjusted to align with the study's context.*
- *Emphasize operational definitions by explaining how they are observed or measured, rather than focusing solely on conceptual explanations [33].*



3.6. Let's Practice

Learning Objectives: Discuss key components of research backgrounds and assess their relevance and coherence with academic standards.

Exercise 1:

Examine the following introduction/backgrounds from master 2 levels and discuss their relevance to the typical structure of a study's background?

Title	<i>Gamification in Virtual Classrooms: A 6-Month Study on Student Engagement</i>
Background	“Online learning has become a key part of education, but many students struggle with staying motivated in virtual classrooms. This research will test whether using game elements—such as earning points, unlocking badges, or competing in challenges—helps students feel more connected and focused in their classes. By focusing on core subjects like math and science, this study aims to show how small changes in course design can make a big difference in keeping students on track. While earlier studies, such as Martinez et al. (2021), demonstrated that rewards systems improved participation in physical classrooms, fewer have focused on fully online settings. Building on work by Jones and Patel (2020), which found that competition between students increased motivation, this study will focus specifically on virtual learning environments, looking at how different game mechanics influence engagement and participation in real-time.”
Source	Parker, D. (2024, September 23). <i>Research proposal example: The one you'll ever need</i> . EssayPro. https://essaypro.com/blog/research-proposal-example
Title	<i>Investigating the Role of the “Cake Application” in Enhancing English Foreign Language Learners’ Speaking Skill The case of first year students of English at Biskra University</i>
Background	“English is recognized as a worldwide language. It is the official language for many countries where the people communicate using it are called natives, and also it is considered as a second language for many other countries. Over the last decades, English has become an essential foreign language in the world. English is the language of all international communications: science, technology, commerce, literature. It became the "lingua franca" for the power it possesses.

	Speaking or communicating in the English language becomes a purpose of all people worldwide because of its status. Humans learn to communicate in their mother tongue naturally, yet linguists have differing theories about how they learn to speak in their mother tongue. However, most linguists agree that it is a complicated process that cannot be accomplished without effort to learn a second or foreign language. For non-native English speakers or English foreign language learners (EFL learners), learning to converse in English successfully is essential, and using it as a native like or at least reach an advanced level in this language becomes the primary concern for them. To fulfil this goal scientific studies and theories have been conducted. Technology has made its portion in this matter and many applications were developed. The “Cake application” in specific will be studied in this investigation; its characteristics, study modes, and how it helps in developing speaking; as well as, the attitudes of EFL teachers and learners toward it will be explored.”
Source	Rihani, B.(2021).<i>Investigating the role of the “cake application” in enhancing English foreign language learners’ speaking skill the case of first year students of English at Biskra University</i>. [Master’s thesis, Biskra University].http://archives.univ-biskra.dz/bitstream/123456789/18462/1/RIHANI_Bariza.pdf
Title	<i>Enhancing Master Students’ Dissertation Writing Through Effective Feedback: Electronic versus Face-to-face Feedback The Case of Second Year Master Students at the Department of English, University of 08 Mai 1945 –Guelma-</i>
Background	“In higher education research, Master Dissertation is regarded as students’ hardest and most voluminous piece of academic writing ever accomplished, it contributes significantly to students’ academic and professional achievements as it demonstrates their capacities and skills as researchers. Nevertheless, the dissertation-writing process requires a variety of planning and research skills; in addition to receiving effective

	supervisor feedback, which is a fundamental constituent in foreign language (FL) writing as it enhances, regulates, and promotes students' writing proficiency. Furthermore, there are two modes of feedback provision, face-to-face feedback also known as handwritten feedback; it is considered as a traditional method through which instructors provide comments and responses directly to students in classroom settings. Yet, it is worthy to mention that with the emergence of computer-based teaching and learning facilities, a new mode of feedback known as electronic feedback appeared. It is characterized by the instrumentality of technology and electronic mediums such as emails and the like, to provide instructional and corrective comments to students beyond classroom settings. Undoubtedly, in EFL master dissertation writing, teachers' facilitative or directional feedback helps in stimulating students to progress in their writings and to produce better later drafts. However, it is assumed that different modes of feedback have different impact on the elaboration of students' written drafts.”
Source	Merabti, F.(2021). <i>Enhancing master students' dissertation writing through effective feedback: Electronic versus face-to-face feedback the case of second year master students at the department of English, University of 08 Mai 1945 –Guelma</i>-[Master's thesis, University of 8 Mai 1945, Guelma].
Title	<i>Social Media Use and Its Effects on Adolescent Mental Health: A Longitudinal Study</i>
Background	“The rise of social media has transformed how adolescents interact and form relationships. However, increasing screen time and exposure to online content have also raised concerns about the mental health effects of prolonged use. With studies indicating a correlation between social media and increased anxiety and depression rates, this research aims to explore these issues in a 2025 context, where adolescents spend an average of four hours daily on social platforms. Given the complexity of mental health, this study will look at multiple factors, including

	social comparison, cyber bullying, and content type, to understand the nuanced impacts of social media on young users. Previous studies have shown mixed results regarding the effects of social media on adolescent well-being. While research like Twenge et al. (2020) highlights a sharp increase in depression rates linked to screen time, other studies, such as Orben et al. (2019), suggest that the impact is more nuanced and depends on the type of social media engagement. This study aims to build on these findings by taking a longitudinal approach and focusing on specific platform usage patterns to reveal more in-depth relationships between social media and mental health.”
Source	Parker, D. (2024, September 23). <i>Research proposal example: The one you'll ever need</i> . EssayPro. https://essaypro.com/blog/research-proposal-example

Exercise2:

Assignment- Pair-Work: Visit the university library and review some Master’s dissertations related to your study. Reflect on the titles and the background sections of these dissertations. How do they compare to your own research in terms of scope, context, and focus?



Statement of the Problem

Objectives: *At the end of this lesson, you are expected to be capable of:*

- ✓ Defining the research problem
- ✓ Distinguishing between different types of research gaps
- ✓ Editing a well-structured problem statement.

4.1. Statement of the Problem

The process of identifying the significance of a research problem can be challenging, even for experienced researchers. To effectively formulate a statement of the problem, researchers must understand the underlying issues they aim to solve. A research problem is characterized by *what is not yet known or poorly understood regarding a practical issue* [17]. This term takes on a different meaning in academic research compared to its everyday use, where problems are typically something to be avoided. In research, however, a problem is something to seek out or even invent, as it is essential for the advancement of knowledge. Without a clear research problem, researchers face a significant challenge, as it forms the foundation of their work [17].

Although it is impossible to solve the world's greatest issues in a single research work, researchers can contribute to understanding specific aspects of these problems. By focusing on a well-defined, smaller question, researchers can contribute to the broader understanding of the issue at hand, potentially leading to *practical solutions*. Great researchers often find themselves addressing new problems or redefining old ones, making groundbreaking *contributions* to their fields [17].

At the onset of a research project, researchers often lack a fully formed problem. They may only have a vague idea of the issue they want to address or hope to clarify a previously defined puzzle. Many notable contributions arise from defining a problem more clearly or re-examining an old one. In some cases, researchers may even gain recognition when their results contradict initial hypotheses they set out to

confirm. While it is not always possible to define a research problem fully at the start, early reflection on the problem is crucial. This helps avoid unnecessary work and confusion later in the research process. To help clarify and define the research problem [17], consider the following strategies:

✚ **Ask for Help** → Engage with teachers, classmates, and other stakeholders. Discuss the problem and its potential solutions. *What new questions might arise from your research? Why might the problem be significant?*

✚ **Look for Problems in Existing Literature** → As you read academic sources, identify *inconsistencies, contradictions, or gaps in existing research*. These gaps often signal areas in need of further exploration. Be cautious, though, to distinguish between genuine gaps and misreading of the literature.

A well-defined problem statement is just a line or two “(e.g., *The high school dropout rate in our community has risen by 20% over the past two years, negatively impacting our future workforce. We need to implement targeted intervention programs to reduce dropout rates and ensure a more educated workforce¹*)”. The rest of the paragraph(s) is its elaboration; a possible solution and, most importantly, cite scholarly sources that establish why it is considered a problem.

Thereupon, *the problem must elicit questions that the researcher can explore* [1].

4.2. Identifying a Research Gap

The core of research lies in asking novel questions and pursuing new lines of inquiry that emerge from gaps in prior research. This, in turn, spurs the creation of new knowledge [32]. A research or scientific gap *is a condition that indicates an inconsistency between formulated research results and supporting data* [31]. Stated differently, it refers to the void in existing knowledge that your study attempts to fill. It may stem from incomplete data, contradictory findings, or unresolved questions in the literature. Identifying this gap early in the process allows you to structure your research around answering these critical questions.

To effectively identify a research gap [31], you can use the following strategies:

¹ <https://www.questionpro.com/blog/problem-statement/>

Examine existing research within your field to uncover areas that remain underexplored or present conflicting results.

Look for issues that have not been adequately addressed in prior studies. An unresolved question may present a valuable opportunity for new research.

Consider the broader impacts of your research. If your work can significantly advance understanding in your field, it is likely addressing a crucial gap.

Consult with specialists or mentors to gain insights into unexplored areas of research.

Participate in academic conferences and workshops to learn about the latest developments and identify gaps in current knowledge.

Once you have identified the research gap, the next step now is to craft a problem statement. A problem statement articulates the **condition** that requires urgent attention and offers a potential **solution**. It aims "to fill a gap in the existing knowledge" [1, p.112] and should be framed in a way that clearly addresses the following questions:

1. *What is the gap that needs to be filled?*
2. *What is the problem that needs to be solved?*

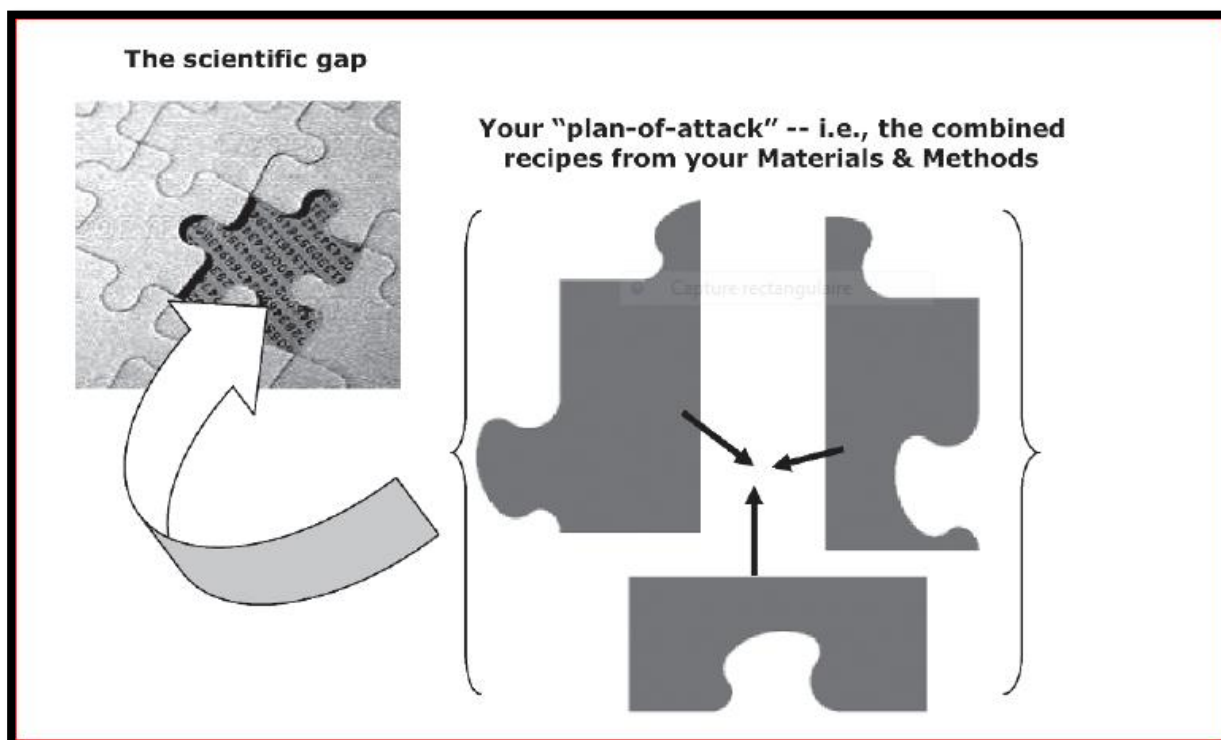
❖ Your problem statement [16] should:

1. *State the problem clearly at the beginning of the paragraph.*
2. *Limit the number of variables addressed to maintain focus.*
3. *Raise a question that current scientific data cannot answer, highlighting the need for further investigation.*

❖ The Scientific gap includes:

Figure 2

The Scientific Gap



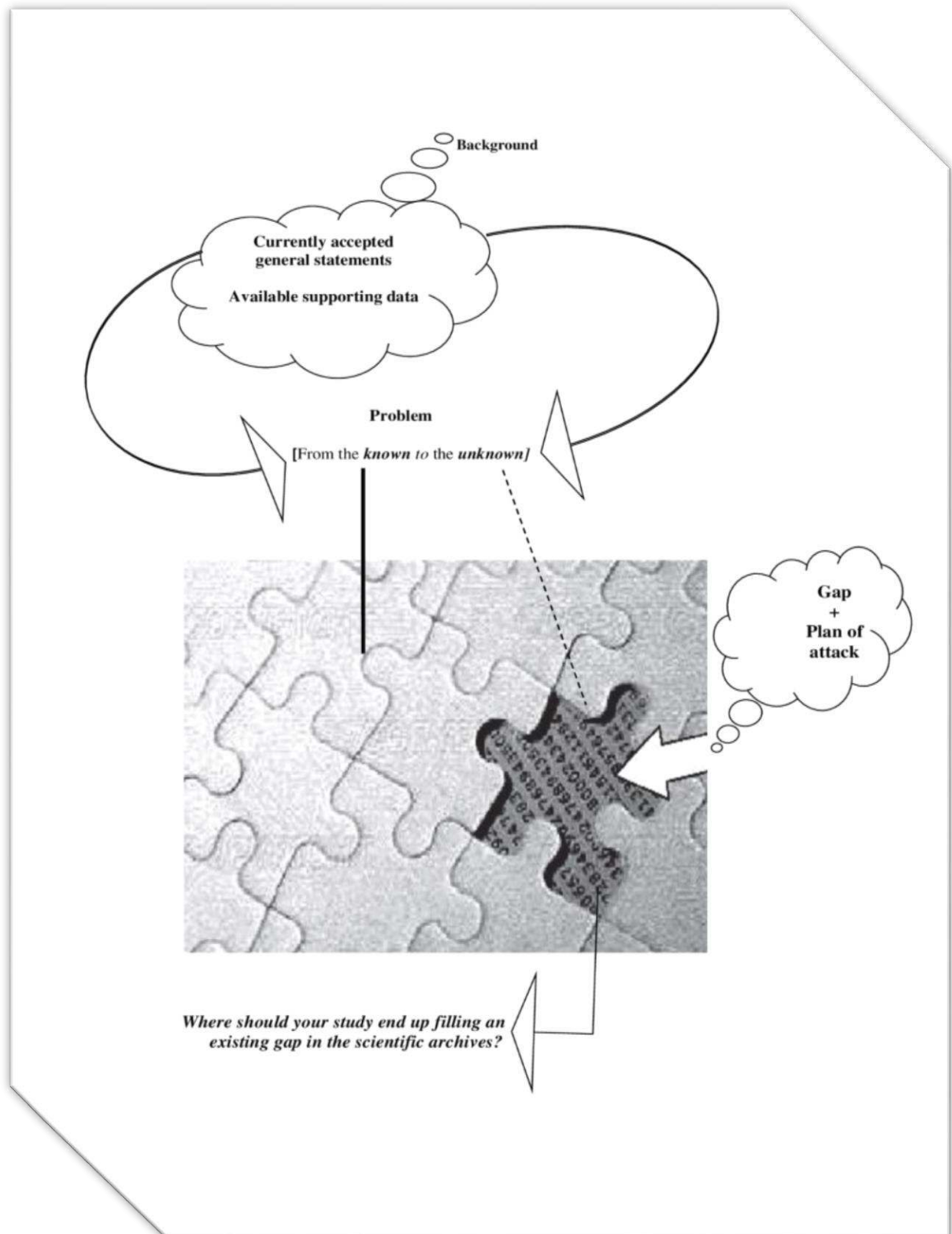
Source: Adapted from [16, p.140]

Accordingly, the empty skeleton of a scientific paper poses a set of research questions, and, as you fill in the skeleton, you automatically carry out an orderly analysis of your data and observations. Moreover, by setting new data into the draft of your paper, you can maintain perspective. You will filter out the shine of newness, as your results— even unusual results — are put into the context of your existing data and your full research plan [16, p. xii].

To conclude, *the problem statement stems from a situation of incomplete knowledge or understanding, resulting in a more significant gap in comprehension* [17].

In the humanities and some social sciences, researchers frequently pose novel questions. In such cases, it is necessary to clearly articulate the gap in knowledge or misunderstanding that the research aims to address [17].

Figure 3
Structure of the Statement of the Problem



Source: Adapted from [16]

4.3. Types of Research Gaps

There are seven types of research gaps, each requiring different approaches for resolution.

Table 1

Types of Research Gaps

Research Gap Type	Definition	Example and Writing up
<i>Evidence Gap (Contradictory Evidence Gap)</i>	Results from studies allow for conclusions in their own right, but are contradictory when examined from a more abstract point of view [Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017].	The researcher identified an apparent evidence gap in the prior research concerning_____. Previous research has addressed several aspects of____: (1)____(cite two to three relevant articles), (2) ____ (cite two to three relevant articles), and (3) ____ (cite two to three relevant articles). However, the previous research has not addressed several contradictions in the findings. The researcher has identified that there is an evidence gap in the prior studies due to contradictory findings [Miles, 2017]
<i>Knowledge Gap (Knowledge Void Gap)</i>	Desired research findings do not exist [Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017].	The researcher identified an apparent knowledge gap in the prior research concerning____. In addition, the prior research did not address the subject of _____. This encompasses several unexplored dimensions that lately have attracted research attention in other

disciplines (cite two to three relevant articles). The__ should be explored further to provide an understanding why this is not the case with ____[Miles,2017].

<i>Methodological Gap</i> (<i>Method and Research Design Gap</i>)	A variation of research methods is necessary to generate new insights or to avoid distorted findings [Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017].	The researcher identified a methodological gap in the prior research. There is a lack of __research designs __.Based on the research design we intend to implement, we identified a dearth of prior studies employing ____ research designs. In this study, we seek to establish a new inquiry on research designs with __. We seek to extend____ the research by addressing the gaps in the research methodologies through____[Miles, 2017]
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<i>Empirical Gap</i> (<i>Evaluation Void Gap</i>)	Research findings or propositions need to be evaluated or empirically verified [Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017].	There appears to be an empirical gap in the prior research. There is a lack of rigorous research in the prior literature. Some of these unexplored__ appear to be important and worthy of investigation in the context _____. An empirical investigation of these issues is important because__ .Furthermore, previous research has focused primarily on qualitative research concerning _____. No study to date
--	--	---

		has directly attempted to empirically evaluate____. Very little empirical research has been done on____[Miles, 2017].
<i>Theoretical Gap (Theory Application Void Gap)</i>	Theory should be applied to certain research issues to generate new insights. There is a lack of theory; thus, a gap exists [Müller-Bloch & Kranz, 2014]. [Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017].	The researcher identified an apparent theoretical gap in the prior research concern in____. The theory on ____is rather dated and the current studies bear the fruit of this theoretical gap. Some of the prior theory appear to be important and a foundation worthy of recognition. However, an investigation in terms of____ and theoretical development is warranted. An investigation of these issues is important because ____ Furthermore, previous theoretical models need to embrace contemporary research in ____and related fields to provide a stronger theoretical basis for projects. The previous theory tends to focus primarily on _____. It does not encompass new paradigms in ____ [Miles, 2017].
<i>Practical-Knowledge Gap (Action-Knowledge Conflict Gap)</i>	Professional behaviour or practices deviate from research findings or are not covered by research [Jacobs, 2011; Müller-Bloch &	There appears to be a practical-knowledge gap in the prior research. There is a lack of rigorous research in the prior literature. Some of these unexplored__ appear to be lacking

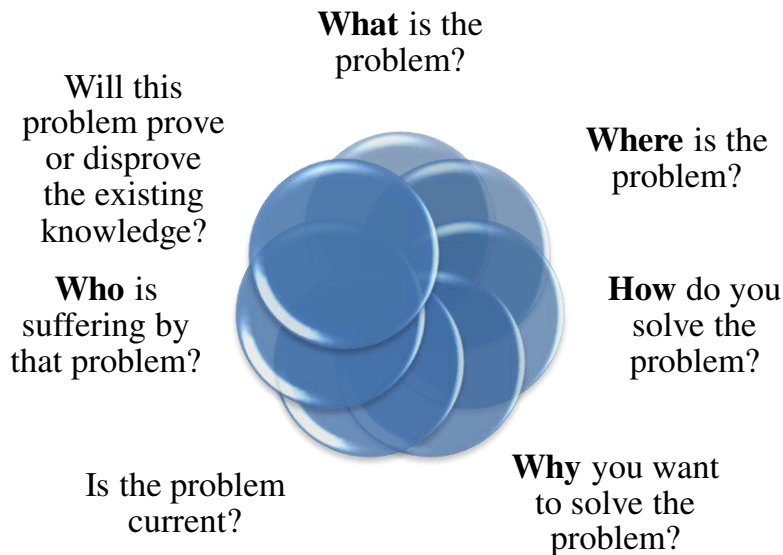
Kranz, 2014; Miles, 2017]. in the practice of ____field. The field of ____ is ripe for an investigation of practical focus research on ____ Many of the prior studies focus on the theoretical aspects of the field of _____. However, there are very few practical studies or action research in the field of _____. This is an important and worthy of investigation in the context of _____.

An investigation of these issues is important because _____. Furthermore, previous theoretical research has focused primarily on _____ and very little practical research has been done on ____field [Miles, 2017

<i>Population gap</i>	Research regarding the population that is not adequately represented or under-researched in the evidence base or prior research (e.g., gender, race/ethnicity, age and ethic). [Robinson, et al, 2011].	Based on the review of the prior research, there is a population gap. Some of these sub-populations have been unexplored and under-researched. The____ appear to be important and worthy of investigation in the context of _____. An investigation of this group is important because_____. Furthermore, previous research has focused primarily on this population of _____. Very little research has been done on _____ [Miles, 2017].
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Source: Adapted from [32]

A well-formulated statement of the problem should prompt the research to answer the following questions [1, p.112]:



It is evident that the process of formulating a problem statement is foundational to academic research. A well-formulated problem *guides the direction of the study* and ensures that *it contributes meaningfully to the field*. By identifying gaps in the literature, engaging with experts, and conducting thorough research, researchers can develop problem statements that pave the way for *significant contributions to knowledge*.

Study Box 4.1

Example1: “In her comprehensive review, Swan (2003) examines the literature on the learning effectiveness of asynchronous online environments. She highlights that while many studies report no significant differences in learning outcomes between online and traditional courses, the quality of online education is influenced by various factors, including the level of interactivity and the presence of teaching and social elements in the learning environment.”

Source: Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne & J. C. Moore (Eds.), *Elements of Quality Online Education, Practice and*

Direction (pp. 13–47). Needham, MA: Sloan Center for Online Education

Example2: “Moore, Dickson-Deane, and Galyen (2011) discuss the inconsistencies in the use of terminology within the field of online education. They note that terms like “e-learning,” “online learning,” and “distance learning” are often used interchangeably, leading to confusion and challenges in research and practice. This lack of clarity can affect the design, implementation, and evaluation of online learning programs.”

Source: Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). E-Learning, online learning, and distance learning environments: Are they the same? *The Internet and Higher Education*, 14(2), 129–135

Example3: “Allen and Seaman (2013) report on the rapid expansion of online education in the United States, noting that over 6.7 million students were enrolled in at least one online course in 2011. Despite this growth, they identify several challenges, including issues related to faculty training, student readiness, and institutional support, which can impact the effectiveness of online learning.”

Source: Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Babson Survey Research Group

If we consider how the examples presented in **Study Box 4.1**, we can observe that in each of these examples, the *problem* revolves around the growing reliance on online education and the challenges associated with its effectiveness. These issues, whether they are about the quality of learning, inconsistent terminology, or barriers to access, point to fundamental aspects of online education that require attention and improvement. The *knowledge gap* is, in that case, in the need for clearer definitions and understanding in the field of online education. Further studies should aim to establish consistent frameworks that can guide research and practice, providing a clearer understanding of the differences and similarities between various online learning models. The research gap refers to areas where existing studies have not sufficiently explored key factors influencing online education. This includes factors like the lack of interaction, digital access disparities, and inconsistent terminology, as well as the absence of long-term studies on the impacts of online education.

Addressing these gaps will provide a clearer and more comprehensive understanding of how online learning can be optimized for all students.



4.4. Let's Practice

Learning Objective: Evaluation of the research problem/statement of the problem

Exercise 1²: *“What do you already know or believe about your topic or problem? Where do these beliefs come from? How do the different beliefs fit together into a coherent picture of this topic or problem?”*

Exercise 2: *Evaluate the adequacy and relevance of the following paragraphs that tackle the research problem/statement of the problem.*

Title: *Reading Comprehension Problems Encountered By EFL Students at Ajloun National University*

“There is an unclear picture about the most popular reading comprehension problems encountered by students of Ajloun National University. The students are expected to perform academically while also facing the challenge achieving English language proficiency. Many researchers noticed that students are quite weak in English in general and reading in particular, as a result, they still find difficulties in reading comprehension. They also rely on word-to-word translation when reading English. Al Ma'ani (2007) emphasized that there are two main reasons stand behind students' poor comprehension skills. Firstly, when teaching reading, most of the EFL teachers concentrate on assessing students' comprehension at the word and sentence levels rather than concentrating on teaching reading comprehension. Secondly, students' lack of reading comprehension strategies is also considered a major cause of students' poor comprehension skills. Considering the challenges and difficulties of foreign language reading, especially the cognitive, cultural and linguistic aspects, all prove that EFL language reading is much more difficult and complicated than that in L1. In order to

² **Source:** Adapted from [\[24\]](#)

help learners better in enhancing their reading comprehension and tackle their reading comprehension problems, students need to identify their problems first and then think of appropriate strategies in order to improve their reading comprehension.

Source: Al-Ghazo, A., & Al-Sobh, M. (2021). Reading comprehension problems encountered by EFL students at Ajloun National University. *International Journal of Language and Literature*, 8(1), 237–246. <https://doi.10.30845/ijll.v8n1p2>

Title: *Student's Problem in Writing Thesis: Case Study at English Department Mataram University*

“Writing is one of four basic language skills and it is very important in teaching and learning English. Writing might be the most complicated skill among the other skills (listening, speaking, and reading). According to Mertens (2010: vii), “Writing is a complex and cognitively demanding activity”. In writing the writer should think hard about grammar, choice of word, punctuation, capitalization, spelling, vocabulary and the unity among the paragraph. Students often get difficulties when they are asked to write their ideas in English, because as we know English in the context is not our first languages. White and Arndt (1991:14) state that a second language learner will need quite a long time to create an idea in writing something. Oshima and Hogue (1999:3) also agree that academic writing is not easy. Moreover, they explain that writing is an academic writing needs a lot of study and practice in order to develop learners’ writing skill. In faculty of teacher training and education of Mataram University (FKIP Unram), a thesis is an academic essay written by the student in consultation with two supervisors. Thesis writing is a writing activity of research. Hardling (2004) states that thesis writing is an activity done by a researcher to report the findings of their research in a written form. Budiharso (2009: 136) also adds that the aim of writing a thesis is to do research examination and to practice writing a research result. We can conclude from the argument that thesis writing is doing the research and then writing the research findings. In English Department the Faculty of Teacher Training and Education of Mataram University (FKIP) many students face the problems in writing their thesis. This is evident from the number of student academic years 2011/2012

who needed more than 4 years to relate this to thesis writing. As we know the normal period for S1 degree is eight semesters (4 years) in which students should achieve 150 credits (Pedoman Penyelenggaraan Akademik FKIP UNRAM 2011), but the faculty also gives opportunity for students who need more than 4 years to finish their study just only until 7 years (14 semester). Based on the descriptions above, the researcher is interested in conduct the research entitled “Student Problem in Writing Thesis: Case Study at English Department Mataram University”. In this research, the focus is to investigate the problems and the causes of problem faced by students in English department of Mataram University in writing their thesis.”

Source: Swarny, B. R. (2016). *Student’s problem in writing thesis: Case study at English Department, Mataram University* [Bachelor’s thesis, University of Mataram]. EPrints Repository. <http://eprints.unram.ac.id/11713/1/E1D%20111%20019.pdf>

Exercise 3: Exploring the Digital Divide in Access to Online Education among EFL Learners in Rural Areas

Group Work

➤ **Scenario Overview:**

You are a researcher studying the impact of the digital divide on EFL learners in rural areas. Many students face challenges in accessing online education due to poor internet connectivity, lack of devices, and low digital literacy. Your task is to evaluate how these challenges affect their learning and suggest practical solutions.

➤ **Instructions:**

What is the problem?

Where is the problem?

How can the problem be solved?

How will solving this problem improve student learning and educational outcomes?

- **Use scholarly sources**, such as peer-reviewed journal articles, books, or reports from reputable institutions, to back up your arguments.



Formulating Research Questions and Hypotheses

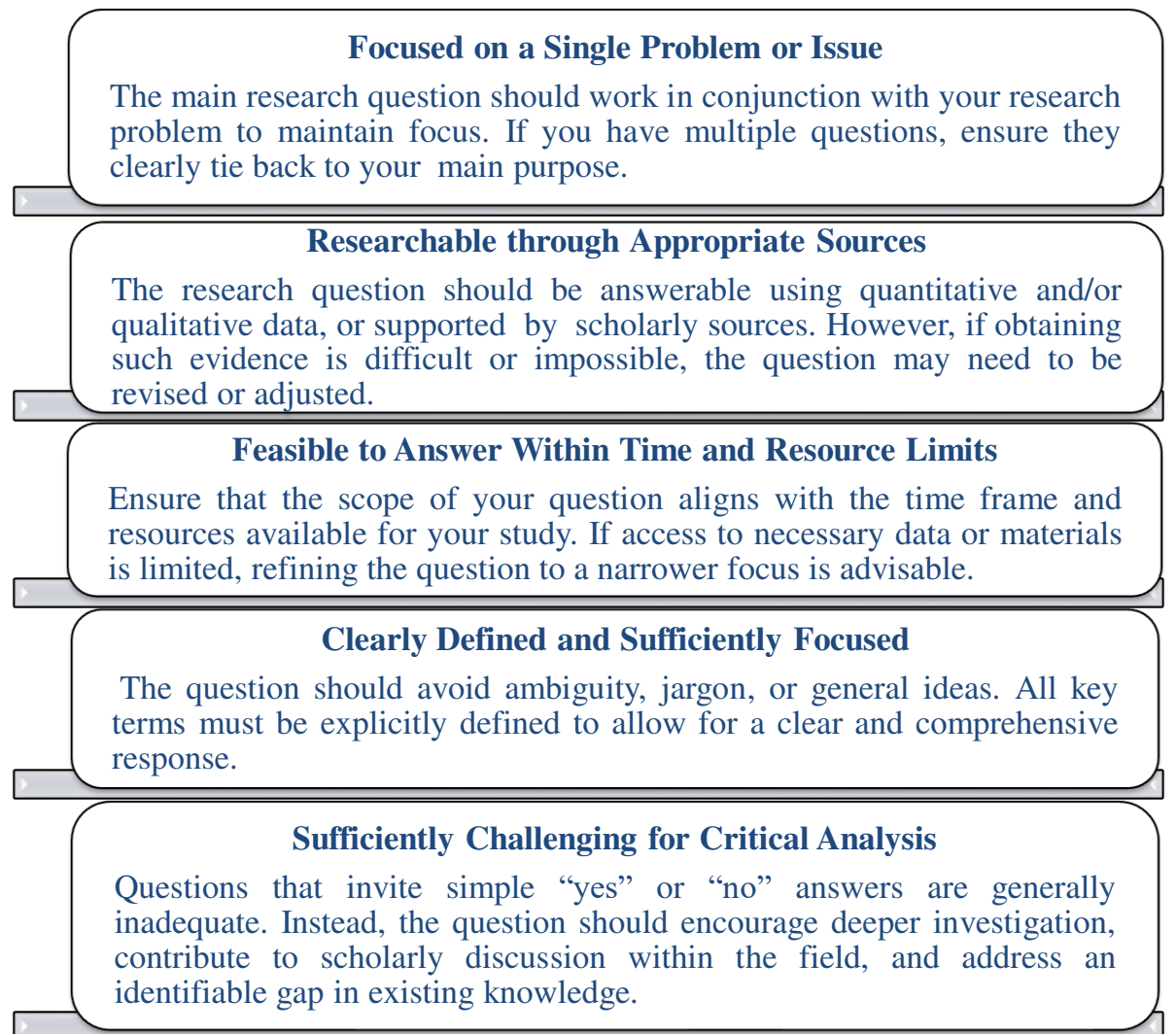
Objectives: *At the end of this lesson, students will be able to:*

- ✓ Formulate clear and focused research questions
- ✓ Write well-structured hypotheses based on their research questions
- ✓ Distinguish between different types of research questions and hypotheses.

5.1. Research Questions

There is no standard way of generating research questions. First, identify a general area of research interest, and then narrow it down to one or more specific research questions. In many cases, the research question may come first, often inspired by theoretical considerations, and is then followed by the selection of an appropriate context or focus to explore it [\[9\]](#). A well-formulated research question should be clear and specific enough to be thoroughly addressed using appropriate qualitative or quantitative methods. At the same time, it should be sufficiently complex to require detailed investigation, analysis, and critical discussion. Questions that can be answered with a simple “yes” or “no,” or by relying on easily accessible facts, are not suitable for a thesis or dissertation [\[18\]](#).

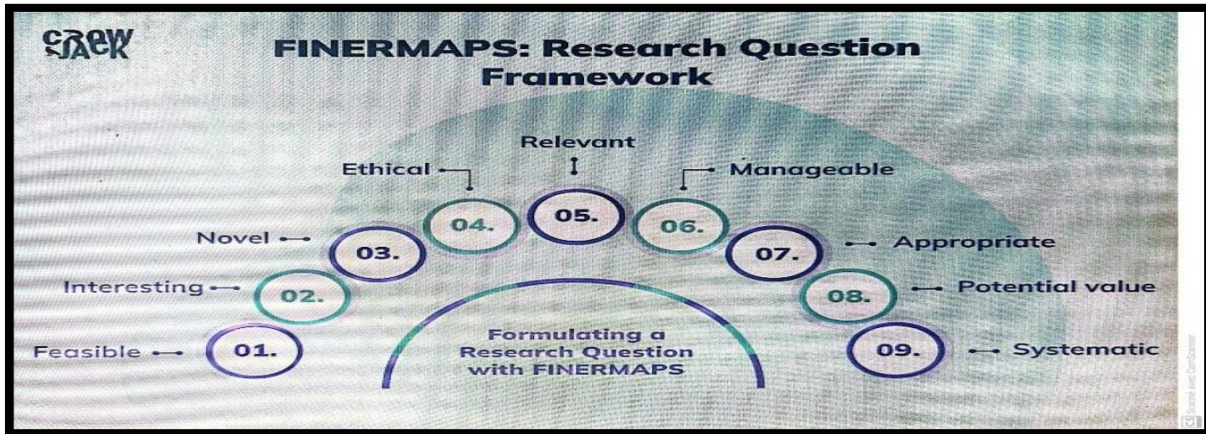
5.2. Key Elements for Formulating a Strong Research Question



Source: Adapted from [\[18\]](#)

Figure 4 illustrates a guideline for formulating research questions.

Figure 4
Framework for Formulating Research Questions



Source: Robinson, J. (2022, September 15). *A guide on how to write a research question with examples*. CrowJack. <https://crowjack.com/student-resources/guide-on-formulating-research-questions>

In **Table 2**, we present examples of research question formulations that may help guide the development of your project questions.

Table 2
Ways to Frame your Research Questions

Research Objectives	Research Question Formulations
Describing and Exploring	— What are the characteristics of X? — How has X changed over time? — What are the causes of X? — How has X dealt with Y?
Explaining and Testing	— What is the relationship between X and Y? — What is the role of X in Y? — What is the impact of X on Y? — How does X influence Y
Evaluating and Acting	— What are the advantages and disadvantages of X? — How effective is X? — How can X be improved

Suppose you are interested in the question: “*How is educational achievement in a primary school affected by the introduction of standard attainment testing at age seven?*” Enquiries related to this topic will develop tentative hypotheses by drawing on *personal experience, ideological conviction, involvement in schools, and a thorough review of relevant educational literature* [17].

You can use the following three-step formula to refine your research question:

1. Topic: *I am studying...* (condition/situation)

Example: *I am studying the impact of standardized testing on educational achievement in primary schools.*

2. Question: *Because I want to find out what/why/how...* (what you do not understand)

Example: *Because I want to find out how standardized testing influences educational achievement.*

3. Significance: *In order to help my readers understand...* (why it is important)

Example: *In order to help my readers understand the broader implications of standardization in educational assessments.*

4.3. The Function of Research Questions

Research questions serve two primary functions:

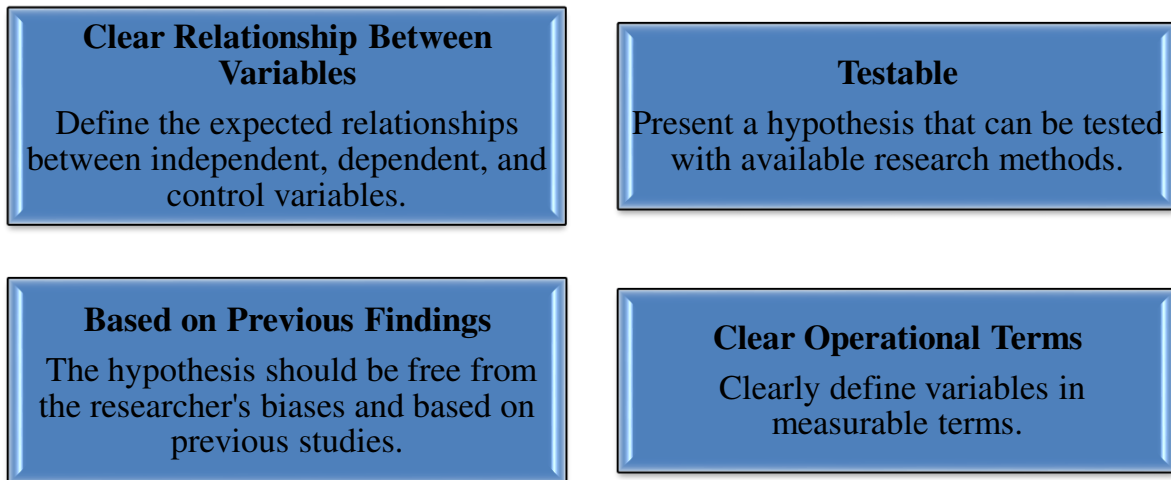
- ✚ **Focus of the Study** → Ensure the questions align with your study's goals and conceptual framework [24].
- ✚ **Guiding the Conduct of the Study** → They inform your methods and ensure the validity of your research. Research questions should avoid assumptions. For example, the question “*How do elementary school teachers deal with the experience of isolation from their colleagues?*” assumes that teachers experience isolation. Without proper justification, this assumption should be examined and reframed as a tentative sub-question [24].

4.4. Hypothesis Development

After the problem has been formulated as a question, you should state your hypothesis. Hypotheses represent *predictions* or *tentative solutions* to the problem [3]. They

propose a *relationship* between variables. Hypotheses must be *testable* and based on previous findings or theories.

The characteristics of a good hypothesis [17, 20] include:



—Hypotheses are often formulated as “if... then” statements [8]. For example:

- *If a reward is given for learning, then it will lead to improved learning outcomes.*

4.5. Types of Hypotheses

a) **Research Hypothesis:** A tentative solution to a problem [20].

Example:

Research question: What is the relationship between leadership skills and job satisfaction of employees in a company?

Research hypothesis: There is a significant relationship between leadership skills and job satisfaction of employees in a company.

b) **Null Hypothesis (H_0):** Predicts that there will be no relationship or effect [20].

Example:

There is no significant relationship between leadership skills and job satisfaction of employees in a company.

c) **Alternative Hypothesis (H_1):** The opposite of the null hypothesis, indicating that there is a relationship or effect between variables [20].

Example:

There is a significant relationship between leadership skills and job satisfaction of employees in a company.

- ❖ Not all studies require hypotheses. Some studies may simply aim to collect information. Hypotheses should not be based solely on personal beliefs but should derive logically from existing literature or theories. A clear rationale, the "if-then" format, and a precise description of the relationship between variables are essential in formulating a strong hypothesis [6].

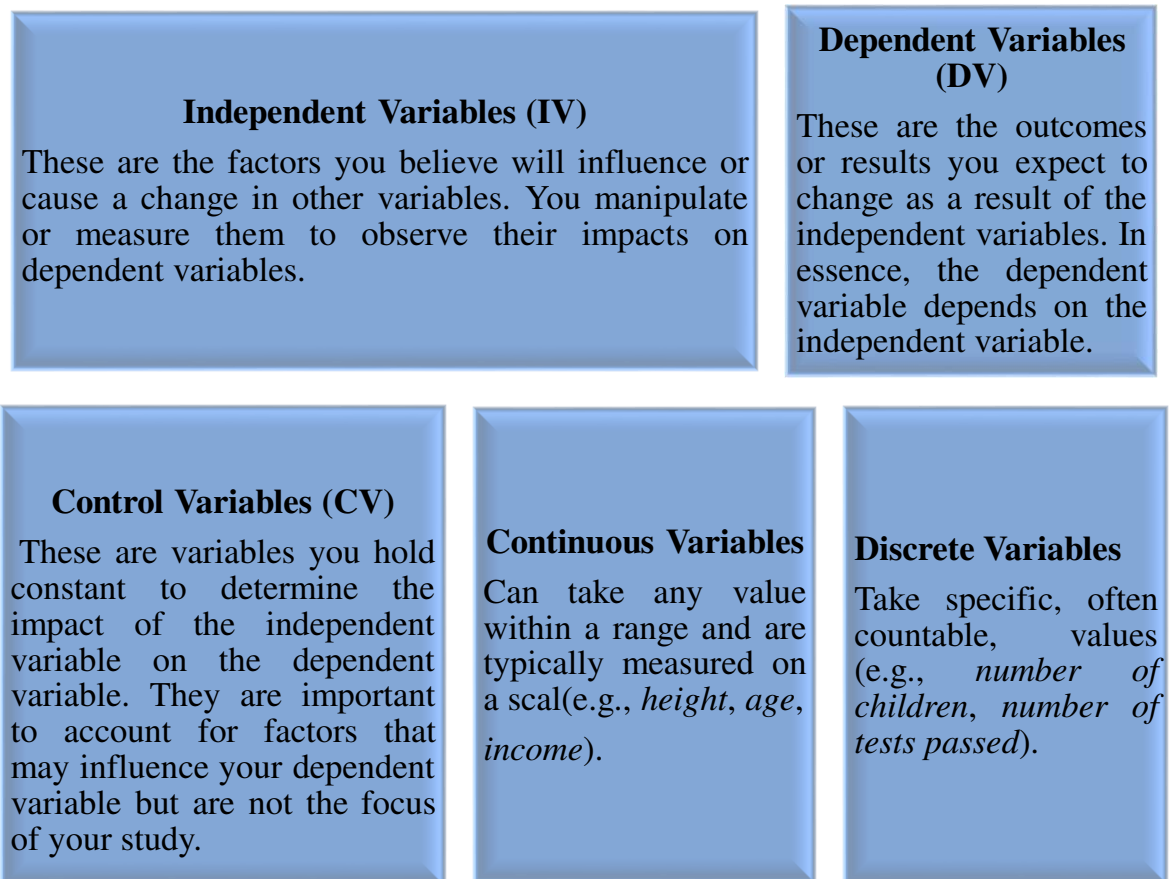
Once you have clearly defined your research question(s) and hypothesis, the next step is to understand what needs to be measured or observed so as to answer the research question and test the hypothesis. This brings us to **variables** [20], which are crucial to the formulation of both research questions and hypotheses.

For instance, in a study investigating the relationship between educational attainment and standardized testing, the variables might include:

- **Independent Variable:** The introduction of standardized testing (*because it is the factor you hypothesize to be influencing another variable*).
- **Dependent Variable:** Educational achievement (*because it is the outcome you are measuring to see if it is affected by the introduction of testing*).

Variables allow you to **operationalize** the concepts in your research; you can define them in *measurable* terms. **For example**, educational achievement could be measured through test scores, grades, or other metrics.

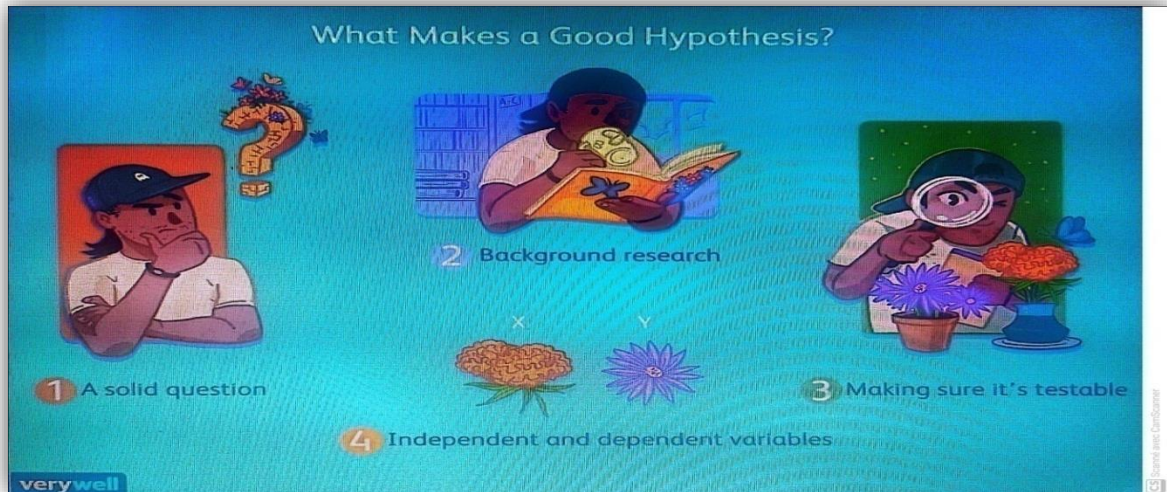
Therefore, there are **five types of variables** [20]:



- In the context of the hypothesis about standardized testing, the independent variable would be *the introduction of standardized tests* at age seven.
- In the study about educational achievement, the dependent variable would be *educational achievement* (e.g., student performance, grades).
- Factors such as *socio-economic background* or *teaching quality* could be control variables in your study.
- By categorizing your variables correctly, you ensure that your research questions and hypotheses are **operationalized** in a way that makes them *testable, measurable, and meaningful*.

Figure 5

Characteristics of a Good Hypothesis



Source: Cherry, K. (2024, April 17). *What is a hypothesis?* Verywell Mind.
<https://www.verywellmind.com/what-is-a-hypothesis-2795239>



After defining your research question(s) and formulating the hypothesis, you will want to *identify the key variables* involved in your study. This step is crucial because your variables will shape how you collect data, analyze it, and interpret the results. Here is a clear structure for introducing variables:

1. **Define Your Research Question and Hypothesis:** Recall the question you are trying to answer and the hypothesis that you aim to test.

Example: How does the introduction of standardized testing at age seven affect educational achievement?

2. **Identify the Key Variables:** Break down your question and hypothesis into specific, measurable components:
 - Independent Variable (IV): The introduction of standardized testing.
 - Dependent Variable (DV): Educational achievement (e.g., test scores, student performance).
 - Control Variables (CV): Socio-economic background, teaching quality, parental involvement.

3. **Operationalize the Variables:** Make sure each variable is defined in measurable terms. For instance, educational achievement might be quantified using test scores, or the number of subjects passed.

It is pertinent to show how your independent variable (IV) is expected to affect the dependent variable (DV) and how control variables (CV) are accounted for to ensure a valid study.

Given that scientific research can differ depending on the research design, **Table 3** summarizes key points about qualitative, quantitative, and mixed methods research questions, helping to streamline the process and maintain focus on the essential concepts.

Table 3

Types of Research Questions

Types of Research Questions	Key Elements	Example
<i>Qualitative Research Questions</i>	Central Question: Broad, open-ended to explore a central phenomenon or concept. Sub-questions: Narrow the focus, deepening on exploration. Language: Use "what" or "how" for an exploratory tone. Purpose: Understand participants' perspectives and meanings. Exploratory Verbs: Discover, seek to understand, explore, describe, report. Verbs: Use non-directional verbs, e.g., explore (grounded theory), describe (phenomenology).	<i>How do high school teachers perceive the impact of project-based learning on students' cognitive and emotional engagement in the classroom?</i>

<i>Quantitative Research Questions and Hypotheses</i>	Research Questions: Examine relationships between variables. Hypotheses: Predict outcomes based on theoretical frameworks. Structure: Define independent and dependent variables. Language: Use precise, testable statements.	<i>Is there a significant difference in reading comprehension scores between students who read digitally and those who read print materials?</i>
<i>Mixed Methods Research Questions</i>	Combine both qualitative and quantitative questions for a comprehensive understanding. Decide whether to collect data simultaneously or in phases. Use to corroborate findings and offer a richer interpretation.	<i>How do students' perceptions of hybrid learning (qualitative) relate to their academic achievement (quantitative)?</i>

Source: Adapted from [33]



4.6. Let's Practice

Learning Objectives: Practice formulating research questions and hypotheses and analysing research problem and questions.

Exercise1³:

1. "Prepare three research hypotheses concerning factors that influence student achievement and then identify some appropriate independent, dependent, and control variables."
2. Specify the variables needed to construct each indicator in the following list.
 - a. Time spent daily for homework by students.
 - b. Teacher academic education.
 - c. Availability of school library.
 - d. Yearly instructional time in semester one.

³ Source: Adapted from [20]

e. Average class size.

Exercise2:

Read carefully the following paragraphs that tackle the research problem/statement of the problem then answer the question below:

Title: *Reading Comprehension Problems Encountered By EFL Students at Ajloun National University*

“There is an unclear picture about the most popular reading comprehension problems encountered by students of Ajloun National University. The students are expected to perform academically while also facing the challenge achieving English language proficiency. Many researchers noticed that students are quite weak in English in general and reading in particular, as a result, they still find difficulties in reading comprehension. They also rely on word-to-word translation when reading English. Al Ma'ani (2007) emphasized that there are two main reasons stand behind students' poor comprehension skills. Firstly, when teaching reading, most of the EFL teachers concentrate on assessing students' comprehension at the word and sentence levels rather than concentrating on teaching reading comprehension. Secondly, students' lack of reading comprehension strategies is also considered a major cause of students' poor comprehension skills. Considering the challenges and difficulties of foreign language reading, especially the cognitive, cultural and linguistic aspects, all prove that EFL language reading is much more difficult and complicated than that in L1. In order to help learners better in enhancing their reading comprehension and tackle their reading comprehension problems, students need to identify their problems first and then think of appropriate strategies in order to improve their reading comprehension.”

Source: Al-Ghazo, A., & Al-Sobh, M. (2021). Reading comprehension problems encountered by EFL students at Ajloun National University. *International Journal of Language and Literature*, 8(1), 237–246. <https://doi.10.30845/ijll.v8n1p2>

Title: *Student's Problem in Writing Thesis: Case Study at English Department Mataram University*

“Writing is one of four basic language skills and it is very important in teaching and learning English. Writing might be the most complicated skill among the other skills (listening, speaking, and reading). According to Mertens

(2010: vii), “Writing is a complex and cognitively demanding activity”. In writing the writer should think hard about grammar, choice of word, punctuation, capitalization, spelling, vocabulary and the unity among the paragraph. Students often get difficulties when they are asked to write their ideas in English, because as we know English in the context is not our first languages. White and Arndt (1991:14) state that a second language learner will need quite a long time to create an idea in writing something. Oshima and Hogue (1999:3) also agree that academic writing is not easy. Moreover, they explain that writing is an academic writing needs a lot of study and practice in order to develop learners’ writing skill. In faculty of teacher training and education of Mataram University (FKIP Unram), a thesis is an academic essay written by the student in consultation with two supervisors. Thesis writing is a writing activity of research. Hardling (2004) states that thesis writing is an activity done by a researcher to report the findings of their research in a written form. Budiharso (2009: 136) also adds that the aim of writing a thesis is to do research examination and to practice writing a research result. We can conclude from the argument that thesis writing is doing the research and then writing the research findings. In English Department the Faculty of Teacher Training and Education of Mataram University (FKIP) many students face the problems in writing their thesis. This is evident from the number of student academic years 2011/2012 who needed more than 4 years to relate this to thesis writing. As we know the normal period for S1 degree is eight semesters (4 years) in which students should achieve 150 credits (Pedoman Penyelenggaraan Akademik FKIP UNRAM 2011), but the faculty also gives opportunity for students who need more than 4 years to finish their study just only until 7 years (14 semester).Based on the descriptions above, the researcher is interested in conduct the research entitled “Student Problem in Writing Thesis: Case Study at English Department Mataram University”. In this research, the focus is to investigate the problems and the causes of problem faced by students in English department of Mataram University in writing their thesis.

Source: Swarny, B. R. (2016). *Student’s problem in writing thesis: Case study at English Department, Mataram University* [Bachelor’s thesis, University of Mataram]. EPrints Repository. <http://eprints.unram.ac.id/11713/1/E1D%20111%20019.pdf>

-What research questions and/or hypothesis can you suggest that align well with these topics?

Exercise3: Use the following research problem to formulate research question(s)

Research Problem	Research Question(s)
Despite Algerian students beginning to learn the English language in middle school, not all university students are performing well in the language.	
Students' reasons for learning a foreign/second language might determine their level of achievements.	
Background: “Although many studies have shown that students want and value a variety of types of teacher feedback, much of this research on students’ preferences has been conducted using questionnaires instead of examining what students do with actual feedback in the context of a real classroom. This study sees feedback as a social act and attempts to get a full picture of how students perceive and deal with feedback in one specific setting.” Source: [19]	
Background: “There are theoretical proposals in cognitive-interactionist SLA regarding how the characteristics of tasks can influence learners’ L2 production.” Source: [19]	

Exercise 4: Examine the following research questions:

Topic: Intelligence and Academic Achievement: an Investigation of Gender Differences

“Two research questions are examined in this paper: (1) what is the relationship between different aspects of intelligence and academic achievement? (2) Is there any significant gender differences regarding the relationship between different aspects of creativity and academic achievement?”

Source: Naderi, H., Abdullah, R., Aizan, T., & Jamaluddin, S. (2010). Intelligence and academic achievement: An investigation of gender differences. *Life Science Journal*, 7(1),83-87.

https://www.researchgate.net/publication/228666685_Intelligence_and_academic_achievement_An_investigation_of_gender_differences

Topic: The Effect of Reading Habit on Students’ Writing Performance

“Therefore, reading problems such as technology development that causing a lack of reading interest, and writing problems such as a lack of reading material and inability to put words in organized way which are faced by the high school students bring the researcher to conduct this research with these research questions as follows:

1. How is the reading habit quality of tenth grade students of a Senior High School in Gresik?
2. Is there any significant difference among students who have different reading habit?”

Source: Arum, D. A. S. (2018). The effect of reading habit on students’ writing performance. *RETAIN: Research in English Language Teaching in Indonesia*, 6(3), 11–18. <https://core.ac.uk/download/pdf/230779322.pdf>

Topic: Implicit and Explicit Feedback and the Acquisition of L2 Grammar

Background: “This study was conducted in several intact ESL classes in New Zealand. It examined the effectiveness of corrective feedback on English past tense and comparatives, as measured by several different testing instruments.”

Research Question:

–“Is there a difference in the effectiveness of implicit and explicit corrective feedback?”

Source: [\[19\]](#)

Topic: Changing bilingual self-perceptions from early adolescence to early adulthood: Empirical evidence from a mixed-methods case study.

Background: The study examined the “changing bilingual self-perceptions of three children, identical twins girls and their older brother, from early adolescence through early adulthood” (p.290). Data were collected over a 13-year period. Framing the study in part in terms of group socialization (psychology), language socialization (linguistic anthropology), and identity construction, Caldas examined how, and why, the children’s attitudes toward being bilingual (or multilingual) vacillated over time. It is part of a larger study of the children’s incipient bilingualism/multilingualism.

Research question: although it is not explicitly stated, the following question is addressed: How do the French/English bilingual identities of three Canadian–American children evolve from early adolescence through early adulthood, and what factors might account for changes?

Source: [\[19\]](#)

Research question	<i>“Whether the two age groups would show similar or divergent facilitation effects with regard to the effects of evolution on item detection.”</i>
Hypothesis	“We hypothesized that older adults would be slower to detect information than young adults would be.”
Research question	<i>“How is educational achievement in a primary school affected by the introduction of standard attainment testing at age seven?”</i>
Hypotheses	“A primary school in which standard attainment testing has been introduced gives greater emphasis to preparing its pupils for formal tests. <i>And</i> Pupils in a primary school which gives greater emphasis to formal testing show greater educational achievement as measured by formal tests.”

Exercise5:

Homework Assignment

Pair Work

Use the free search engine Google scholar to compare research questions, and/or hypotheses from papers related to your research focus.



Defining Research Aims/Purpose

Objectives: *Upon completion of this lesson, the student will be able to:*

- ✓ Formulate a clear and precise purpose statement
- ✓ Identify the essential characteristics of purpose statements in qualitative, quantitative, and mixed methods research
- ✓ Evaluate sample purpose statements.

6.1. The Purpose Statement

Research proposals require a precise articulation of the study's overall intent, often regarded as the most critical element of the document. While some scholars incorporate this within the introduction, theses, and proposals typically present it as a distinct section [5, 33]. During the research process, objectives may shift in scope or emphasis. At the proposal stage, however, the primary task is to define with clarity, for both the researcher and the readers, the main focus of the study and the key concepts under investigation [5].

- ❖ It is useful to distinguish among the purpose statement, the research problem, and the research questions. The problem identifies the issue or gap that justifies the study. The purpose statement specifies the aim of the investigation—*what the researcher intends to accomplish by its conclusion*. Research questions, in turn, operationalize this aim into specific inquiries that guide the data collection and analysis. Therefore, the purpose statement expresses the *overarching intent*, emerging from the identified problem, and subsequently informs the development of the research questions [5].

6.2 Tips for Developing a Strong Purpose Statement

A well-formulated purpose statement [5] should:

Explain the goals and objectives of the study (what do you want to find?).

Demonstrate originality by clarifying how the research differs from prior work (what will you contribute to the field?).

Provide more details than the introduction while remaining concise.

Include a rationale for the study (why is this research important?).

Define the study's boundaries by specifying what will not be addressed—an especially important consideration in competitive funding contexts, where narrowly focused projects are more likely to succeed.

6.3 Types of Purpose Statements

Although the following features are presented sequentially, they do not always appear in this exact order.

6.3.1 A Qualitative Purpose Statement

A strong qualitative purpose statement explicitly identifies the key phenomenon, participants, and research site, and employs language consistent with qualitative research [33].

—Key features include [33]:

- ✚ Use explicit terms such as *purpose*, *intent*, or *objective*. Employ present or past tense in completed studies and future tense in proposals.
- ✚ Address a single phenomenon rather than multiple variables or group comparisons.
- ✚ Use open verbs such as *explore*, *understand*, *describe*, or *discover*.
- ✚ Avoid evaluative terms (e.g., *positive*, *useful*) that suggest predetermined outcomes.
- ✚ Provide working definitions of the central phenomenon while acknowledging that meaning may evolve.
- ✚ Indicate the qualitative strategy guiding the data collection and analysis (e.g., case study, ethnography, phenomenology, narrative).

- ✚ Specify who and where, with sufficient detail to situate the study.
- ✚ Clarify boundaries, such as the specific group, community, or location studied.

Example:

“The purpose of this qualitative phenomenological study was to explore the lived experiences of first-generation college students in navigating academic challenges at a large public university.”⁴

6.3.2 A Quantitative Purpose Statement

A quantitative purpose statement defines the variables, their relationships, participants, and setting, using language aligned with quantitative inquiry and a deductive approach

[33].

—Essential elements [33] include:

- **Statement of intent** → Use explicit terms such as *purpose* or *objective*.
- **Theoretical grounding** → Reference the guiding theory or conceptual framework.
- **Variable specification** → Define independent, dependent, mediating, moderating, and control variables.
- **Relational/comparative focus** → Use connecting language such as *relationship between* or *comparison of*.
- **Logical ordering** → Present variables sequentially (independent → dependent → mediating/moderating → control).
- **Methodological orientation** → Indicate the research design (e.g., survey, experiment).
- **Participants and site** → Specify who is studied and where.
- **Definitions and delimitations** → Provide general definitions and note scope limitations.

Example:

“The purpose of this quantitative correlational study was to examine the relationship

⁴ Source: [49]

between teacher self-efficacy and student achievement scores in mathematics across middle schools in Texas.”⁵

6.3.3 A Mixed Methods Purpose Statement

A mixed methods purpose statement integrates quantitative and qualitative strands while explaining the rationale for their combination [33].

—Core features include [33]:

- **Signalling intent** → Use explicit terms such as *purpose* or *intent*.
- **Overall focus** → State the central aim before detailing each strand.
- **Design specification** → Identify the mixed methods design (sequential, concurrent, or transformative).
- **Justification for integration** → Explain the rationale for combining data (e.g., triangulation, building, explaining, or amplifying voices).
- **Qualitative features** → Specify phenomenon, action-oriented verbs, inquiry strategy, participants, and site.
- **Quantitative features** → Identify theory, variables, relationships, design, participants, and site.
- **Data collection detail** → Optionally explain the types of data to be gathered.

Example:

“The purpose of this mixed methods study was to investigate the relationship between school leadership and teacher collaboration by combining survey data with follow-up focus group interviews.”⁶

Table 4

Purpose Statement Examples with Reflection Questions

Research Approach	Purpose Statement Example	Reflection Questions
<i>Qualitative</i>	<i>“The purpose of this qualitative phenomenological study was to explore the lived experiences of K-12 public</i>	1. What is the phenomenon being studied? 2. How does the verb (<i>explore</i>) reflect the

⁵ Source: [50]

⁶ Source: [51]

<i>(Phenomenological)</i>	<i>school teachers related to stress and burnout while teaching during the COVID-19 pandemic.”</i> (Bard, 2022, University of New England)	qualitative tradition? 3. Why is context (COVID-19, K-12 teachers) important here?
<i>Quantitative (Correlational)</i>	<i>“The purpose of this quantitative, ex post facto, correlational research study was to describe a relationship between rural allied health care mean customer satisfaction scores and allied health care departments’ generation of revenue for a hospital.”</i> (Ellis-Jacobs, 2011, Int. J. Allied Health Sci. & Practice)	1. Which variables are being examined? 2. How does “correlational” shape your understanding of design? 3. Why does the statement mention both satisfaction and revenue?
<i>Mixed Methods (Convergent Design)</i>	<i>“The purpose of this convergent parallel mixed-methods pilot study was to explore the collaboration of pre-service teachers in a reading clinic setting. This research involved the simultaneous collection of quantitative and qualitative data that were analysed separately and then merged... Likert-scale survey items ...</i>	1. What are the quantitative and qualitative strands? 2. How does the wording reveal a “convergent parallel” design? 3. What is the advantage of merging these two strands?

	<i>focus group interviews ...</i> <i>collaborative meeting notes...</i> ” Source: Texas A&M–Corpus Christi Research Methods Guide	
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6.4. Practice

Exercise1: Source: Adapted from [\[33\]](#)

1. *Using the script for a qualitative purpose statement, write a statement by completing the blanks. Make this statement short; write no more than approximately three-quarters of a typed page.*

“The purpose of this _____ (strategy of inquiry, such as ethnography, case study, or other type) study is (was? will be?) to _____ (understand? describe? develop? discover?) the _____ (central phenomenon being studied) for _____ (the participants, such as the individual, groups, organization) at _____ (research site). At this stage in the research, the _____ (central phenomenon being studied) will be generally defined as _____ (provide a general definition).”

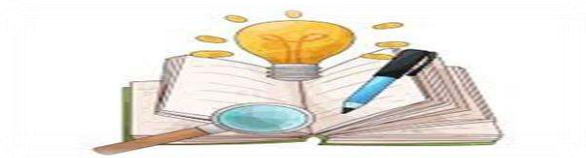
2. *Using the script for a quantitative purpose statement, write a statement by completing the blanks. Also make this statement short, no longer than three-quarters of a typed page.*

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

variable(s), _____, (identify the control and intervening variables) will be defined as _____ (provide a definition).”

3. *Using the script for a mixed methods purpose statement, write a purpose statement. Be sure to include the reason for mixing quantitative and qualitative data and incorporate the elements of both a good qualitative and a good quantitative purpose statement.*

“The intent of this concurrent mixed methods study is to _____ (state issue that needs to be addressed for group or individuals). In the study, _____ (quantitative instruments) will be used to measure the relationship between _____ (independent variable) and _____ (dependent variable). At the same time, the _____ (central phenomenon) will be explored using _____ (qualitative interviews or observations) with _____ (participants) at _____ (the research site). The reason for combining both quantitative and qualitative data is to better understand this research problem by converging both quantitative (broad numeric trends) and qualitative (detailed views) data and to advocate for change for _____ (groups or individuals).”



Explaining the Significance of the Study

Objectives: *By the end of this lesson, students will be able to:*

- ✓ Explain the significance of the study in research
- ✓ Practice writing a strong significance of the study
- ✓ Distinguish between the rationale and significance of the study.

7.1. What is the Significance of the Study?

The significance of a research study emphasizes the *importance* and *relevance* of the research within its discipline. This section, which is typically found in the introduction of a research proposal, thesis, or dissertation, answers critical questions particularly *why the research is essential, what gap it addresses in current knowledge, and how it contributes theoretically, methodologically, or practically to the field*. By answering these questions, researchers highlight the value of their work so as to be accepted for publication and cited [\[46, 47\]](#).

The key questions [\[47\]](#) to address in this section include:

- ✚ Why is the study important to the field?
- ✚ What gap does it fill in existing knowledge or real-world applications?
- ✚ What theoretical, methodological, or practical contributions does it offer?

7.2. Writing the Significance of Your Study

- **Provide context and background** → Begin by situating your research within the broader academic context. Summarize key debates or the state of the field to demonstrate the relevance of your work [\[47\]](#).
- **Identify the research gap** → Describe the gap or unanswered questions in the current literature or practice. Explain the significance of this gap and how your research addresses it [\[47\]](#).
- **Outline specific contributions** → Clarify what new insights or innovations your research introduces [\[47\]](#). These could include:

- Theoretical Insights: New frameworks or concepts.
 - Methodological Innovations: New tools or approaches.
 - Practical Applications: How your findings can be applied to policy, industry, or society.
- **Highlight broader relevance** → Link your study's results to overarching academic debates or real-world challenges [47].
 - **Support claims with evidence** → It is better to back up your claim with data, references, or examples to strengthen the argument for the relevance of your study [47].

7.3. Best Practices for Writing a Strong Significance Statement

Avoid general statements like “This research is important.” Instead, explain how your study advances knowledge or influences practice [47].



Avoid unnecessary jargon and communicate your points in accessible language [47].



Customize the significance based on your audience, whether that is academic peers, policymakers, or practitioners [47].



Focus on how your research can lead to tangible outcomes or practical changes [47].

Example 1⁷:

⁷ **Source:** Khaliq, S., Alam, A., & Mushtaq, M. (2015). An experimental study to investigate the effectiveness of project-based learning (PBL) for teaching science at elementary level. *International Journal of Academic Research in Progressive Education and Development*, 4(1), 43–55. <https://doi.org/10.6007/IJARPED/v4-i1/1434>

“This study would be beneficial and significant for many people because 21st century skills are imperative for students to exhibit innovation and creativity, problem solving and critical thinking, collaboration and communication. Project-based learning (PBL) can help teachers for developing 21st century skills in the student that would empower students for lifelong learning by making them ready for solving complex life issues and improve the working environment in the 21st century. This study would not only help teachers to understand the basic concepts related to project-based learning but they will also able to use it effectively and efficiently in their classroom situation.”

Example 2⁸:

“Understanding the impact of socio-economic status (SES) on academic achievement holds significant importance for several reasons. Firstly, addressing the educational disparities resulting from SES is crucial for promoting educational equity and social mobility. By identifying the factors contributing to the achievement gap, policymakers and educators can develop targeted interventions and policies to level the playing field and provide equal opportunities for all students, regardless of their socio-economic backgrounds. Secondly, recognizing the influence of SES on academic achievement can help educational institutions and teachers better understand the diverse needs and challenges faced by students from different socio-economic backgrounds. This understanding can inform instructional strategies, curriculum development, and support systems that cater to the specific needs of students from disadvantaged backgrounds, ultimately enhancing their academic outcomes. Moreover, studying the impact of SES on academic achievement can contribute to broader discussions on social justice and inequality.”

“Education is often seen as a vehicle for social and economic advancement, and addressing the disparities in educational outcomes can have far-reaching implications for reducing overall societal inequalities. Lastly, the findings of this study can provide

⁸ **Source:** Munir, J., Faiza, M., Jamal, B., Daud, S., & Iqbal, K. (2023). The impact of socio-economic status on academic achievement. *Journal of Social Sciences Review*, 3(2), 695–705. <https://doi.org/10.54183/jssr.v3i2.308>

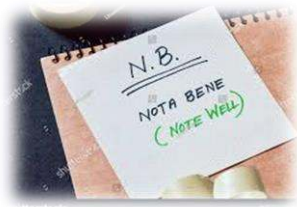
evidence-based guidance for policymakers in formulating effective educational policies and interventions aimed at reducing the achievement gap. By understanding the specific mechanisms through which SES influences academic achievement, policymakers can develop targeted strategies that address the underlying factors contributing to disparities, such as access to resources, parental involvement, and school quality.”

7.4. Common Pitfalls to Avoid

Use technical terms that prioritize clarity and simplicity, avoiding jargon [47].

Ensure you clearly articulate the research gap, or the significance of your work might appear redundant [47].

Avoid making claims without supporting evidence or proper citations, as this can diminish the credibility of your work [47].



After reading this lesson, you may feel confused about the difference between the rationale and the significance of the study. The following video will help you clarify this distinction and overcome any confusion:

<https://youtu.be/Uy82TJIkeog?si=Ca9APWyif-JmJ3cR>



7.5. Let's Practice

Learning Objective: Evaluate the significance of the study section.

Read the *significance section* of the following two dissertations.

1. Oulbani, A., & Mehaba, K. (2021). *The characteristics of a good and an effective teacher* [Master's dissertation, Université Mohamed El Bachir El Ibrahimi, Bordj Bou Arréridj].<https://dspace.univ-bba.dz/server/api/core/bitstreams/fac34191-d6ce-43e2-a3a0-1497bb5637c9/content>
2. Labidi, A. (2022). *Investigating the effect of using Grammarly artificial intelligence application on EFL learners' writing skills: Case study of Master Two students at Biskra University* [Master's dissertation, University of Biskra].http://archives.univ-biskra.dz/bitstream/123456789/21229/1/LABIDI_Abdeslem.pdf

Answer the following questions:

- 1.Does the *Significance of the Study* section give explanation why the research is important? Explain how it does this.
- 2.How does the section justify the potential effect of the research on the field of education? Explain how it does this.



Unit2: Literature Review



Developing Digital Reading Strategies

Objectives: *At the end of this lesson, students will be able to:*

- ✓ Identify major differences between digital and print reading strategies in the context of research proposals
- ✓ Apply active reading strategies to evaluate digital sources relevant to their research proposals
- ✓ Use reading techniques to efficiently navigate research articles and extract key insights.

8.1. Understanding Digital Reading

In today's research environment, digital reading is *essential* for accessing academic papers, journals, e-books, and online resources. Digital reading strategies help students *navigate vast amounts of information efficiently, critically assess content, and extract key insights for research*. These digital reading strategies differ from traditional reading approaches, particularly in the context of research, as summarized in **Table 5** [\[34\]](#).

Table 5

Digital Reading vs. Print Reading

Aspect	Print Reading	Digital Reading
Reading Process	Linear, sequential reading with minimal distractions	Non-linear, often involving hyperlink ⁹ and multimedia ¹⁰
Comprehension	Typically, higher comprehension due to focused	Superficial engagement; distractions can lower

⁹ A hyperlink—as a digital reference—provides direct access to related sections of text by clicking or tapping, and it is usually underlined or buttoned [\[35\]](#).

¹⁰ Hypermedia is defined as digital texts accessed by hyperlinks; nevertheless, they have multimedia facilities such as audio, video and graphics [\[35\]](#).

	reading	comprehension
Engagement	Focused on one text, no interruptions.	Often interrupted by pop-ups, links, and multitasking.
Cognitive Load	Generally lower, fewer stimuli.	Higher cognitive load due to multimedia and multitasking.
Retention	Stronger retention through deep engagement.	Retention may be affected due to fragmented reading
User Perception	Positive for older or more traditional readers.	Preferred by younger, tech-savvy readers
Distractions	Few distractions; deep focus on the text	High potential for distractions (e.g., notifications, ads).
Reading Strategies	Focused reading, note-taking, and annotations	Skimming, scanning, using search tools, and critical evaluation of sources
Navigation	Physical turning of pages, no immediate search options	Easy navigation using search functions and hyperlinks

Source: Adapted from [34]

8.2. Active Reading for Proposal Preparation

Academic proposals demand precision and clarity. *Active reading* [36] helps you:

Identify gaps in existing literature by noticing repeated claims, unresolved debates, or overlooked contexts.

Distinguish between central arguments and supporting evidence so you can decide what is relevant for your background and problem statement.

Connect ideas: position your research within broader theoretical or applied frameworks.

- ❖ Therefore, in proposal writing, active reading ensures that your *rationale* (“*why this study matters*”) is supported by well-understood, critically engaged sources.

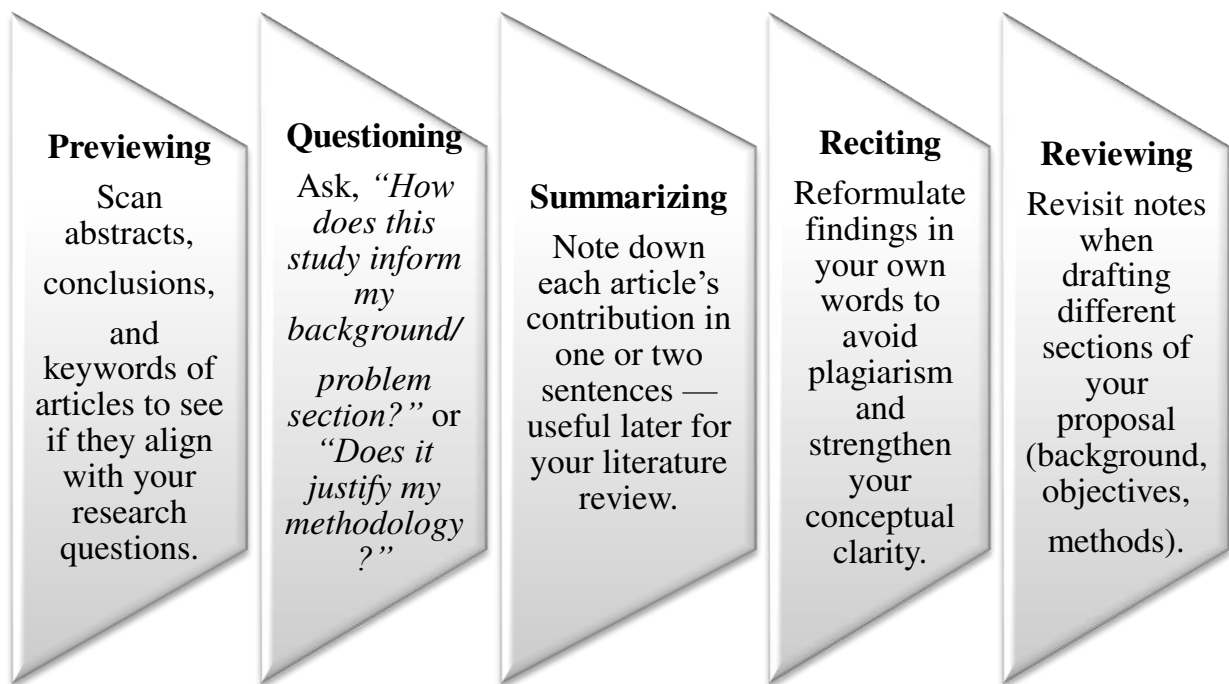


Analyse the following article, by identifying the core arguments, and noting any gaps or unanswered questions in the research.

Article: Zarfsaz, E., & Ahmadi, N. (2017). Investigating some main causes and reasons of writing plagiarism in an EFL context. *International Journal of Applied Linguistics and English Literature*, 6(5), 214.
<https://doi.org/10.7575/aiac.ijalel.v.6n.5p.214>

8.3. Structured Strategies for Proposal Sections

Effective reading strategies such as *previewing*, *questioning*, *summarizing*, *reciting*, and *reviewing* can be directly applied to proposals [36]:



Review an article related to your research topic, apply each strategy, and prepare a short summary for your proposal background.

8.4. Skimming and Scanning in Digital Environments

- **Skimming** allows you to quickly judge which digital sources (journal articles, reports, policy briefs) are worth **deeper reading** for your proposal [36].
- **Scanning** helps you locate specific data (statistics, methodologies, case studies) that can directly support your problem statement or justification [36].
- ❖ In proposal writing, skimming and scanning saves time by directing attention to *relevant evidence* rather than exhaustive reading.



Use skimming and scanning to identify relevant sections (problem statement, key findings) and summarize them in 3 sentences.

Article: Le, H. V., & Nguyen, L. Q. (2024). Promoting L2 learners’ critical thinking skills: The role of social constructivism in reading class. *Frontiers in Education*, 9, 1241973. <https://doi.org/10.3389/feduc.2024.1241973>

8.5. Digital Note-Taking for Proposal Drafting

Notes become the foundation of your literature review [36]. With digital tools (OneNote, Zotero, Mendeley, Google Docs):

- Create keyword-based summaries for each article.
- Tag notes by proposal section (*background, problem, methodology*) so retrieval is quick.
- Revisit notes to synthesize rather than copy-paste in order to ensure *originality* in your writing.

8.6. Critical Reading Strategies for Research Proposal and Thesis Writing

Critical thinking is essential for evaluating *the credibility of information*, particularly when engaging with digital sources. It involves the ability to assess and critique ideas and arguments, ensuring that *beliefs are supported by evidence* [37]. This process is crucial when selecting credible sources for research proposals. Regardless of whether reading occurs on a screen or on paper, it should be emphasized that the value of reading does not lie in its duration or length, but in the extent to which you can derive *valid conclusions* that are relevant to your research work and guiding questions. When selecting sources for your proposal, you need to:

- **Assess the writer's credibility** and the publication's impact.
- **Evaluate the methodology** employed in the study.
- **Analyse the timeliness and relevance** of the research for your proposal.

8.6.1. Evaluating Resources: A Framework for Assessing Online Sources

The UC Berkeley Library's "Evaluating Resources" guide offers a structured approach to critically evaluate the credibility and relevance of online sources, particularly in academic contexts. This framework is essential for developing research proposals, ensuring that the sources you incorporate are *reliable* and *pertinent* [38].

Key criteria for evaluation [38] include:

- 1. Authority** → Examine the author's qualifications, institutional affiliation, and expertise in the subject matter. Determine if the source is published by a reputable organization or academic institution.

- 2. Accuracy** → Assess the reliability of the information presented. Check for citations, references, and evidence supporting the claims. Be wary of sources lacking verifiable data or peer-reviewed content.
- 3. Bias and Objectivity** → Identify any potential biases that may influence the content. Consider the rationale of the source, whether it is to inform, persuade, or sell, and evaluate how this purpose might affect the presentation of information.
- 4. Currency** → Check the publication date to ensure the information is up-to-date and relevant to current research. This is particularly important in fields where knowledge evolves rapidly.
- 5. Relevance** → Determine if the source directly addresses your research question(s) or topic. Consider the scope of the content and whether it provides the depth of information needed for your proposal.

Integrating this evaluative approach into the research process enhances the *quality* and *reliability* of the sources incorporated into your research proposals.

❖ ***You can also consult this link for further reading:***

Flanagin, A. J., & Metzger, M. J. (2008). The credibility of volunteered geographic information. *GeoJournal*, 72(3–4), 137–148. <https://doi.org/10.1007/s10708-008-9188-y>



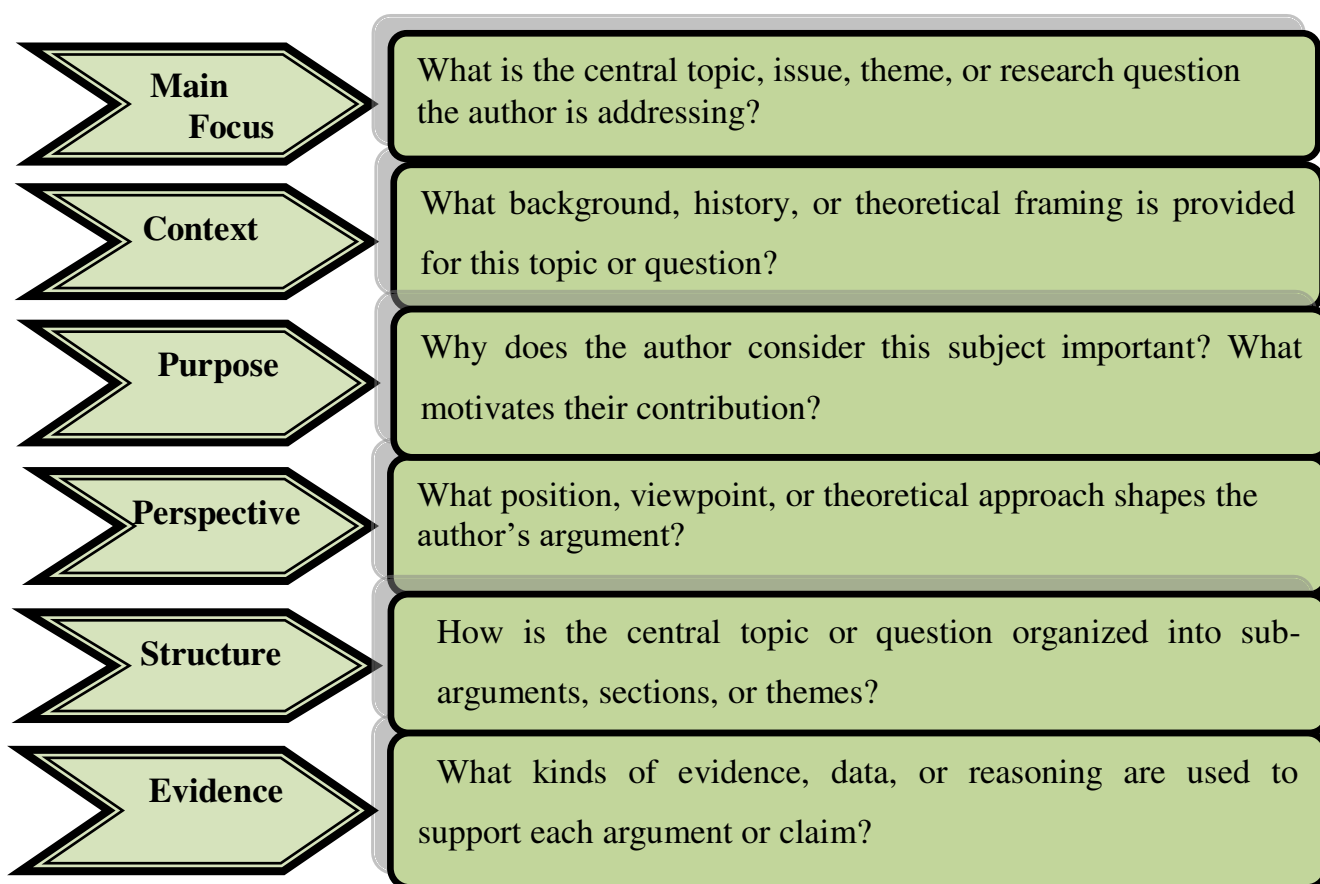
Assess the credibility and relevance of the following article:

Le, H. V., & Nguyen, L. Q. (2024). Promoting L2 learners' critical thinking skills: The role of social constructivism in reading class. *Frontiers in Education*, 9, 1241973. <https://doi.org/10.3389/feduc.2024.1241973>

- ❖ When reading sources in preparation for writing a research proposal or thesis, consider the following diagram to guide your analysis and note-taking [\[36\]](#):

Figure 6

Critical Reading Strategies for Research Proposal and Thesis Writing



Source: Adapted from [36]



8.7. Let's Practice

Learning Objective: Assess one's ability to apply skimming, scanning, and active reading techniques to draft a provisional proposal outline.

Group Work

Article: Machiridza, L. H., & Muringani, J. (2023). Understanding and developing a problem statement: A guideline for novice researchers. *Annals of Reviews and Research*, 10(2).

<https://juniperpublishers.com/arr/pdf/ARR.MS.ID.555785.pdf>

Instructions :

1. Skim the abstract, conclusion, and keywords of the article to determine its relevance.
2. Scan the methodology and key findings for specific data that will support your proposal's problem statement or research objectives.
3. Summarize the key findings from the article in at least two sentences.
4. Discuss how the article can contribute to your research proposal, focusing on problem definition, research questions, and objectives.
5. Create a provisional outline for your proposal based on the article you reviewed.
6. Present your outline to the class, explaining how the article contributes to your research proposal.



Conducting a Literature Review

Objectives: *At the end of this lesson, students will be able to:*

- ✓ Define the purpose of a literature review
- ✓ Distinguish between different types of literature reviews
- ✓ Identify appropriate approaches to literature review.

9.1. Objectives of a Literature Review

Research proposals generally require a concise outline of the chapters, indicating what each chapter will cover, whether a review of the literature or a presentation of the research methodology. A crucial stage in the research process involves becoming familiar with existing scholarship on the subject. One might ask, *why should I devote time to reviewing the literature rather than moving directly to the data collection?* The purpose lies in developing a clear understanding of the current state of knowledge surrounding the selected topic. In essence, the literature review provides a ***critical look at prior studies*** that bear directly on the research at hand. A literature review is more than a preliminary task in research; it is essential for mapping existing scholarship and clarifying whether a research problem has already been addressed or still needs exploration [\[2,3,4,5\]](#). Reviewing literature allows researchers to:

- ✚ Grasp how previous scholars framed arguments.
- ✚ Understand theoretical diversity in the field.
- ✚ Situate new studies within broader debates.
- ✚ Identify relevant methodologies and research techniques.

It is not a one-off activity but a ***continuous process*** that informs the research question(s), methods, and data analysis at every stage [\[39, 40\]](#).

9.2. What a Literature Review is *Not*

A literature review should *not be*:

- ≠ A mere list or annotated bibliography
- ≠ A simple paraphrasing of conclusions
- ≠ Narrow, descriptive, or arbitrarily constructed

Instead, it should provide *synthesis* rather than mere *summary*, bringing together findings into a coherent and critical analysis [3, 41].

9.3. Types of Literature Reviews

9.3.1. The Traditional or Narrative Literature Review

The traditional or narrative literature review is the most widely used form and serves as a *broad synthesis* of existing scholarship on a given topic. It involves *selecting and summarizing relevant studies*, though the criteria for inclusion are not always explicitly stated. Because it relies heavily on the researcher's judgment, this type of review often reflects *selective reading*. Despite this limitation, narrative reviews remain valuable as they provide comprehensive background knowledge, highlight existing debates, and help identify inconsistencies or gaps in the literature. Such gaps often inspire the formulation of new research questions or hypotheses, making the narrative review particularly useful for setting the stage for further inquiry [39, 40].

9.3.2. The Systematic Literature Review

In contrast, the systematic literature review adopts a far more rigorous and transparent approach. It is designed to address clearly *formulated research questions by identifying, evaluating, and synthesizing all relevant studies in a particular field*. Systematic reviews are characterized by their explicit inclusion and exclusion criteria, detailed search strategies, and systematic assessment of the quality of included studies. The goal is to minimize bias, ensure reliability, and allow for replication. Because of these qualities, systematic reviews are widely used in clinical and applied sciences, where evidence-based practice requires a thorough evaluation of all available research [39, 40].

9.3.3. Meta-Analysis

A specialized extension of the systematic review is the meta-analysis, which involves *using statistical techniques to integrate findings across multiple quantitative*

studies. This method not only increases the statistical power of conclusions but also allows researchers to identify patterns across large datasets that might not be visible in individual studies. Meta-analysis is particularly helpful in fields such as medicine, psychology, and social sciences, where quantitative data are abundant and aggregating them yields more robust insights [39].

9.3.4. Meta-Synthesis

For qualitative research, the equivalent method is the meta-synthesis, which integrates findings from diverse qualitative studies such as phenomenological, ethnographic, or grounded theory research. Unlike meta-analysis, meta-synthesis does not rely on statistical aggregation; instead, it *interprets and re-organizes themes, concepts, and meanings across studies*. This approach is especially valuable when the objective is to build new theoretical perspectives or to identify shared patterns of experience across different contexts [39, 40].

Taken together, these forms of literature review differ in scope and methodological orientations. Narrative reviews provide flexibility and contextual understanding; however, systematic reviews and their extensions, meta-analysis and meta-synthesis, offer rigor, transparency, and replicability. The choice between them depends on the research objectives, the nature of available evidence, and whether the study seeks to *explore, contextualize, or aggregate knowledge* [39, 40, 41].

9.4. The Process of Conducting a Review of Literature

a. Selecting a Topic → Requires clarity about the research idea and identifying key terms for electronic searches. Review articles can be starting points, but *original sources must always be consulted* [39].

b. Searching → Focus on recent studies (within the last 2–3 years) while using older works strategically when relevant. Abstracts should be screened to filter relevant sources [39].

c. Reading and Analysing → Each article should be critically assessed in terms of [39, 40, 41]:

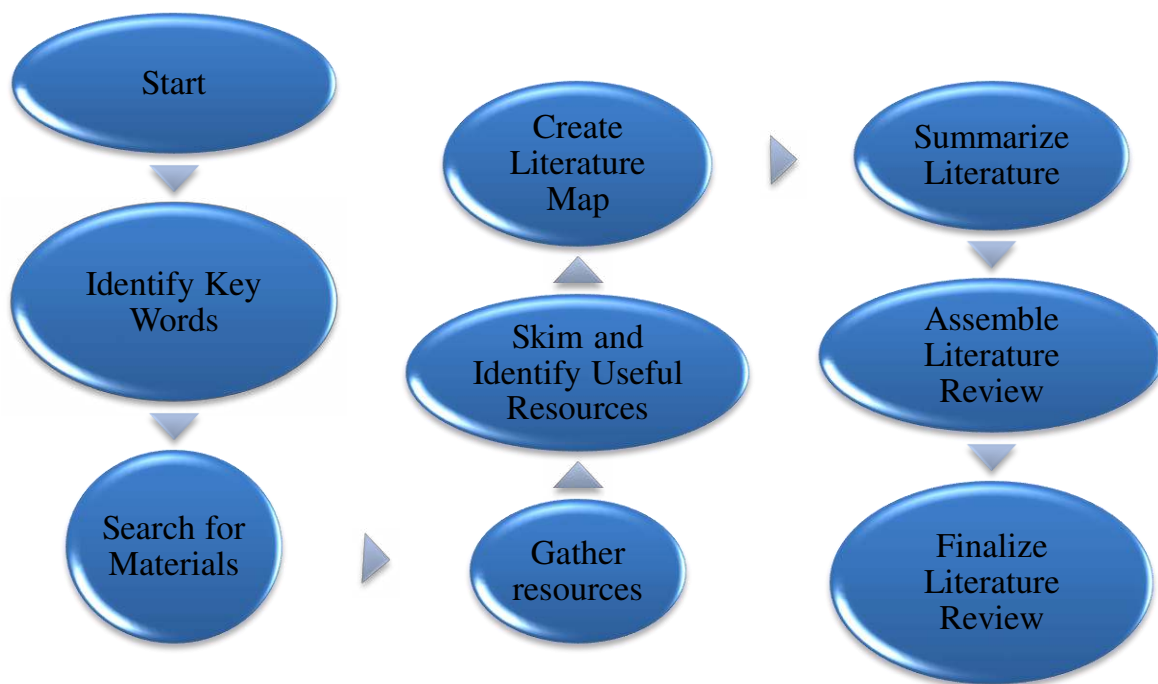
- Key findings and methodology.
- Relevance to the study.
- Relation to gaps in the field.

d. Writing → The review should *summarize and compare studies, highlight contradictions, and identify gaps that justify the proposed research* [39, 40, 41].

The following visual map (**Figure 7**), adapted from Creswell (2014),¹¹ illustrates the key steps in conducting a literature review and presents a concise overview of the process.

Figure 7

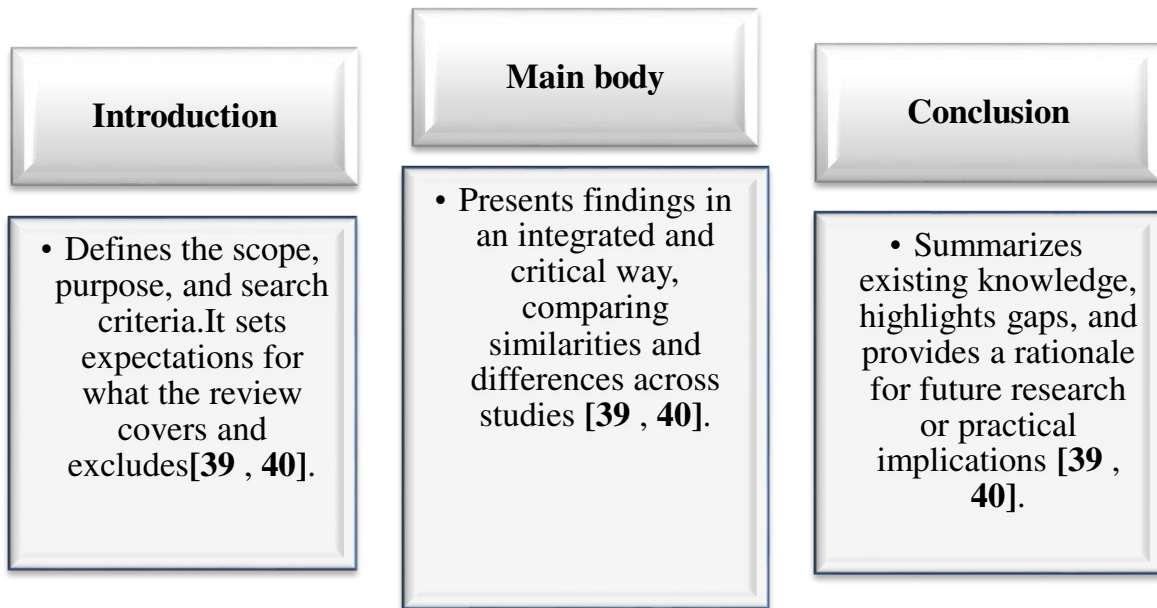
The Literature Review Process Map



Source: Adapted from [42]

9.5. Structure of a Literature Review Section

¹¹ see Reference list for full details



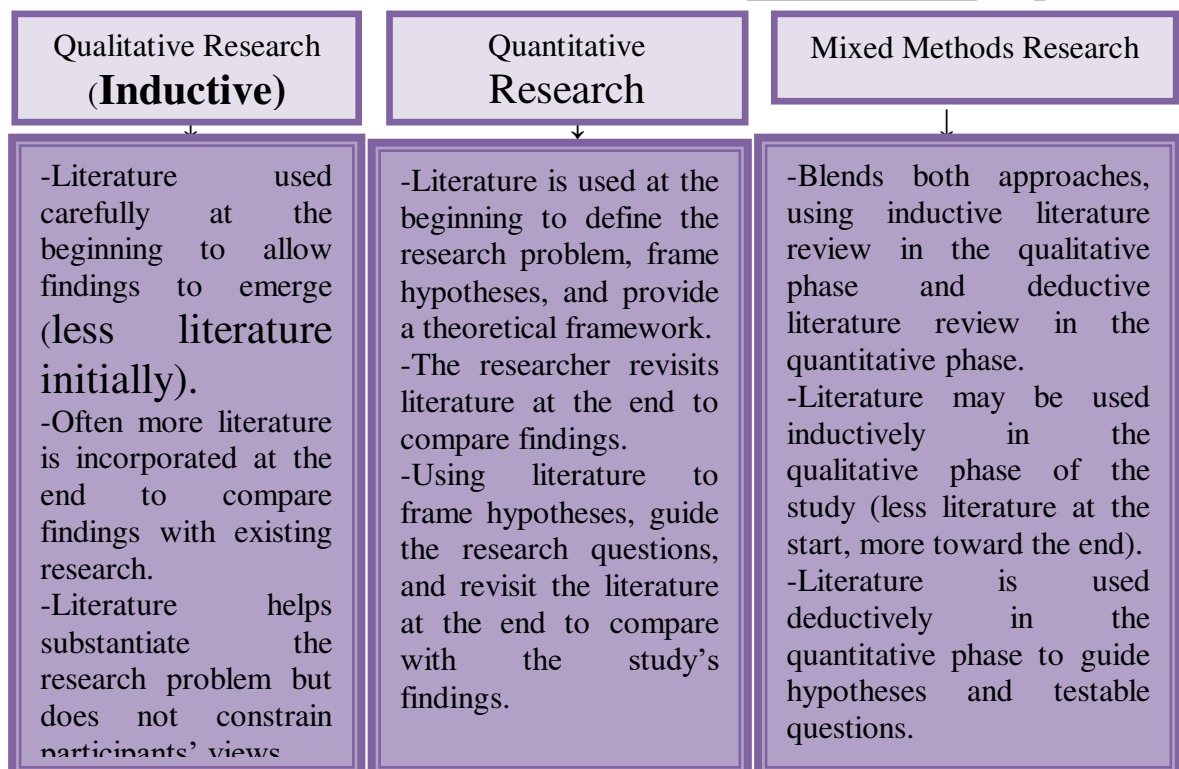
The review must end with a **complete, accurate reference list**, since accurate referencing helps ensure academic honesty and prevents plagiarism [39 , 40].

9.6. Literature Review Approaches

The following chart highlights the different uses of literature in qualitative, quantitative, and mixed methods research, and distinguishes between inductive and deductive approaches.

Figure8

Different Approaches to Conducting a Literature Review (Adapted from [42])



9.7. Common Pitfalls

Mistakes to avoid include, [\[39\]](#), [\[40\]](#):

- ≠ Presenting excessive or insufficient data without synthesis
- ≠ Failing to show how the study contributes to literature
- ≠ Weak structure with no logical thread
- ≠ Relying on anecdotes or duplication
- ≠ Neglecting updates: reviews must be revised continually as new research emerges.

9.8. Writing Tips

- ✚ Keep sentences clear and concise, one idea per sentence.
- ✚ Organize content into manageable paragraphs.
- ✚ Avoid exclamation marks.
- ✚ Engage actively and critically with sources, avoiding “laundry lists” of papers.
- ✚ Track references systematically to avoid confusion [\[3\]](#), [\[39\]](#).
- ✚ Use past or present perfect tense for describing previous research and findings and past tense for reporting the findings and present tense for interpreting the implications of those results [\[10\]a](#).

An effective literature review is a *sustained, critical synthesis that links existing knowledge to the research problem, highlights gaps, and justifies the study*. It should strengthen academic integrity, demonstrate scholarly engagement, and lay the foundation for rigorous methodology [\[39\]](#), [\[40\]](#), [\[41\]](#).



When discussing other researchers' work in the literature review, use the **past tense** to describe specific studies or findings that have been completed, such as “Quinn (2020) presented evidence on the effects of social media.” However, use the **present perfect** to indicate ongoing relevance or more recent developments, such as “Since then, several studies have explored new aspects of the topic [\[10\]a](#)”



9.9. Let's Practice

Learning Objective: Assess one's ability to critically analyse a literature review sheet

Pair Work

Based on your research topic, modify the provided literature review worksheet to suit your area of focus, adapting the sections on sources, main points, and research gaps to align with your specific field in education.

Source: Alexander College. (2015). *Literature Review Worksheet*.
<https://alexandercollege.ca/wp-content/uploads/2015/04/3.-Literature-Review-worksheet.pdf>

Unit 3:
Methodology



Writing the Methodology Section

Objectives: *At the end of this lesson, students will be able to:*

- ✓ Identify appropriate research strategies (experiment, survey, case study) for different research purposes
- ✓ Differentiate between the three primary research purposes (exploratory, explanatory, and descriptive)
- ✓ Compare between quantitative, qualitative and mixed methods approaches
- ✓ Justify the use of quantitative, qualitative, or mixed methods approaches for different research scenarios to achieve specific research goals
- ✓ Explain how research questions align with the aim of the study, the research strategy as well as the method used.

10.1. Methodology

The methodology section, or research design, *outlines the approach taken to answer the research questions*. It comprises a *description* and *rationale* for the *research strategy*, *data collection methods* (such as observations, interviews, or surveys), and *data analysis techniques*, alongside *the materials and instruments used* [2, 9]. This section will detail how and when sufficient experimentation and valid data analysis will confirm or invalidate the original hypothesis. It will describe the dataset(s), calculations, calibration graphs, and procedures involved. The methodology section typically includes the research design, sample, instrumentation, data collection methods, and analysis procedures. It is often written in the future tense (e.g., “The research will examine...”) [2, 9].

- ❖ Maxwell (2012) introduces an interactive model of research design, which consists of five interconnected components. These components address various critical issues that are fundamental to the coherence of a study, highlighting the

ways in which they influence and are influenced by each other [\[24, p.21\]](#). The five components include:

1. Goals

- Why is this study worth conducting?
- What issues will it clarify, and what practices or policies does it aim to influence?
- Why should the results matter?

2. Conceptual Framework

- What theories, beliefs, and prior research inform the study?
- What literature or personal experiences will shape the research process?

3. Research Questions

- What specific knowledge gaps will the study address?
- What questions will the research attempt to answer, and how are they related?

4. Methods

- What techniques will be used to collect and analyse the data?
- How do the chosen methods form an integrated research strategy?

5. Validity

- What threats to the validity of the results exist?
- How will alternative interpretations be addressed?
- Why should the results be considered credible?

10.2. Research Design

The research design *connects* the study's initial research questions to the empirical data and conclusions. It serves to *operationalize* the questions into a structured approach. Research designs are categorized into qualitative, quantitative, and mixed methods approaches, each providing direction on how to conduct the study [\[9, 22, 29\]](#).

Key components of the research design [\[29\]](#) include:

- ✚ The research questions
- ✚ Propositions (what should be examined)
- ✚ Unit of analysis (defining the case being studied)

- ✚ Linking data to propositions
- ✚ Interpretation criteria for analysing the findings

10.3. Research Strategies

It is widely recognized that the research strategy, along with the methods employed, must be suitable for addressing the research questions. The overall approach taken in an inquiry is commonly referred to as the research strategy [9, 22]. The Research Strategy is the *overall approach* to conducting the study. There are different strategies, namely experimental, survey and case study.

10.3.1. Experimental Strategy

The experimental strategy involves *manipulating* one *variable* to see its *effect* on *another variable*, typically through *hypothesis testing* [9]. Therefore, the researcher is expected to:

- ✚ Select a sample from a known population
- ✚ Assign the sample to different experimental conditions
- ✚ Introduce controlled changes to variables
- ✚ Measure the effects on the variables

10.3.2. Survey Strategy

A survey collects *standardized information* from groups of people, typically via *questionnaires* or *structured interviews* [9]. Consequently, the researcher is expected to:

- ✚ Select a representative sample
- ✚ Collect data using observation, interviews, and documentary analysis

10.3.3. Case Study Strategy

A case study involves an *in-depth study* of a single case (individual or group) or a small number of related cases [9]. The study typically concentrates on a small group of participants, often language learners or teachers, and in some cases, it may focus on a single individual (referred to as a focal participant or case). The individual's behaviour, performance, knowledge, and/or perspectives are examined in depth, usually over an extended period, in order to explore key questions related to language acquisition, interaction, motivation, identity, or other areas of applied linguistics [19]. The researcher is thus expected to:

✚ Select a relevant case

✚ Study the case in its real-life context, often over an extended period of time

In case studies, it is essential to articulate a conceptual framework, formulate research questions, and select sampling strategies and data collection instruments to ensure clarity.

10.4. Research Purposes

The purpose of the research helps guide the methodological approach [9]. The research could be:

- a) **Exploratory:** To discover new insights, seek new questions, and assess phenomena in a new light. This approach is typically qualitative.
- b) **Descriptive:** To provide an accurate profile of persons, events, or situations. It requires extensive prior knowledge and may be qualitative or quantitative.
- c) **Explanatory:** To identify causal relationships or explain a situation or problem. This approach may involve qualitative or quantitative methods.

10.5. Research Methods/Approaches

The difference between qualitative and quantitative research is often seen as a choice between using **words** (*qualitative*) versus **numbers** (*quantitative*), or **open-ended questions** (*qualitative*) compared to **closed-ended questions** (*quantitative*). However, a deeper understanding of these methods involves looking at the underlying philosophical beliefs, overall research strategies, and the specific techniques employed in each approach [43].

10.5.1 Qualitative Method

The qualitative method focuses on exploring and understanding how individuals or groups interpret a particular social or human issue. It includes evolving questions, data gathered in the participants' environments, and inductive analysis (starting with specific observations and moving to broader conclusions). Researchers interpret the data in a flexible, narrative manner. This method values inductive reasoning, personal perspectives, and capturing the complexity of a situation. For instance, the researcher endeavours to understand a phenomenon from the participants' perspectives by studying a group's shared behaviours over time. For instance, an ethnographic design

can be used, where the researcher observes a cultural group and collects data by engaging in their daily activities to better understand their shared behaviours [43].



What are the advantages and disadvantages of qualitative research?

10.5.2 Quantitative Method

The quantitative method seeks to test theories by analysing the relationships between measurable variables using statistical methods. The structure of the research report typically consists of an introduction, literature review, methodology, results, and discussion. This method emphasizes deductive reasoning, controlling for biases, and ensuring that findings can be replicated and generalized [43]. The researcher tests a theory by setting specific hypotheses and collecting data to confirm or challenge them. For example, an experimental design can be used where participants' attitudes are measured both before and after an intervention. Data are collected using tools that assess attitudes and analyzed through statistical methods [43].



What are the advantages and disadvantages of quantitative research?

10.5.3 Mixed Methods

Mixed methods research combines elements of both qualitative and quantitative approaches. It involves integrating philosophical assumptions and using both methods together in a study. The goal is to strengthen the research by drawing on the advantages of both approaches, hence offering a more comprehensive understanding than using just one method alone [43].

Since in this approach, both qualitative and quantitative data are collected to provide a more comprehensive view of the research problem, a study may begin for instance, with a broad survey to collect general data from a large sample, and then follow up with qualitative interviews to explore specific aspects of the topic in more

depth. In this approach, both qualitative and quantitative data are collected to provide a more comprehensive view of the research problem [43].

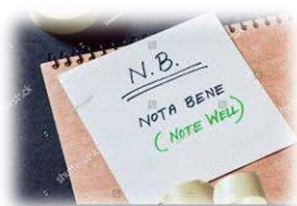
As shown in **Table 6**, the differences between qualitative, quantitative, and mixed methods approaches are clearly outlined [43, p. 33].

Table 6

Qualitative, Quantitative, and Mixed Methods Approaches

Quantitative Methods	Mixed Methods	Qualitative Methods
• Pre-determined • Instrument based questions • Performance data, attitude data, observational data, and census data • Statistical analysis • Statistical interpretation	• Both pre-determined and emerging methods • Both open- and closed-ended questions • Multiple forms of data drawing on all possibilities • Statistical and text analysis • Across databases interpretation	• Emerging methods • Open-ended questions • Interview data, observation data, document data, and audio-visual data • Text and image analysis • Themes, patterns interpretation

Source: Adapted from [43, p.33]



When planning a research project, researchers must determine whether they will use a qualitative, quantitative, or mixed methods approach. This decision is influenced by *the researcher's worldview or assumptions about research, the chosen inquiry strategies, and the methods used. The selection of a research design is also shaped by the specific research problem being investigated, the researcher's*

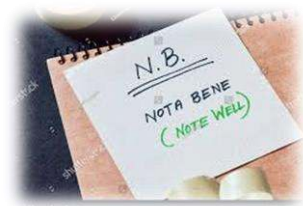
personal experiences, and the intended audience for the research findings [43]. Table 7 presents a summary of the research design framework.

Table 7

Research Design: Strategy, Purpose, and Approach

Strategy	Type of Research Question	Requires control over events?	Focus on current events?	Purpose	Approach/ Method
Experiment	How Why	Yes	Yes	Explanatory	Quantitative
Survey	Who What (somewhat questions are exploratory) Where How many How much	No	Yes	Descriptive	Quantitative
Case Studies	How Why	No	Usually, but not necessarily	Exploratory	Quantitative/ Qualitative

Source: Adapted from [9, 24, 33]

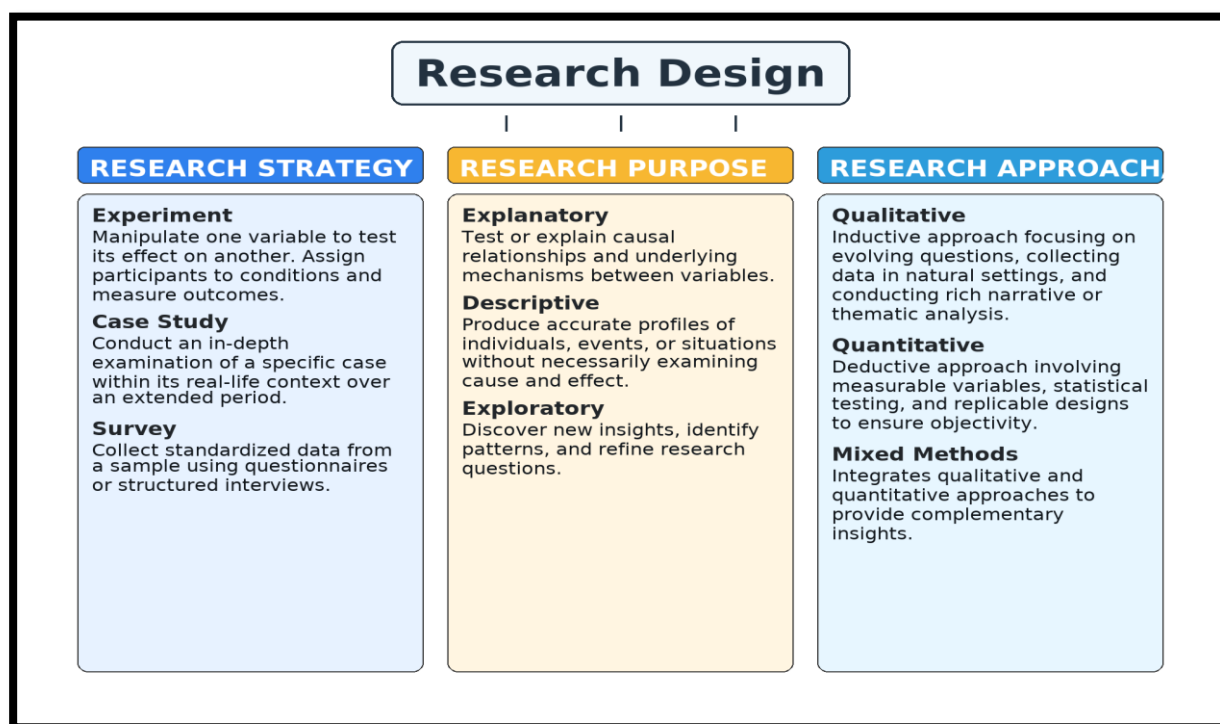


- ❖ Experiments and surveys are typically used for quantitative research focused on answering explanatory or descriptive questions.
- ❖ Case studies can be qualitative or quantitative and are used for exploratory research, depending on the scope of the study.
- ❖ Understanding the research purpose and question helps in selecting the appropriate research strategy and data collection method.

In **Figure 9**, we provide a concise summary of the key components of the research design.

Figure 9

Components of the Research Design



10.6. Le's Practice

Learning Objective: Assess one's ability to critically evaluate the key elements of research methodology in students' research work

Exercise 1:¹²

“Read the Methodology sections from the sources provided and critique them based on the following criteria:

- Whether the methods used to collect data and analyse the data were appropriate to address the purpose of the study and/or research question that the study was designed to answer;
- How well the chosen methods were employed; and
- How effectively the researcher addressed issues of credibility and dependability.”

¹² Source: Adapted from [19]

1. RIHANI, Bariza. (2021). *Investigating the role of the “cake application” in enhancing English foreign language learners’ speaking skill the case of first year students of English at Biskra university*. [Master’s Thesis, Biskra University]. http://archives.univ-biskra.dz/bitstream/123456789/18462/1/RIHANI_Bariza.pdf
2. Kerambo, P. (2015). *Research proposal submitted to the faculty of education, St. Augustine University of Tanzania* [Unpublished research proposal]. Community Research. https://www.communityresearch.org.nz/wpcontent/uploads/formidable/FUL_L.pdf
3. Mermoul, H. (2024). *Emotional Intelligence as a predictor of EFL learners’ productive skills achievement: the case of third year EFL students and teachers in the Department of English at the University Centre of Mila* [Doctoral thesis]. Blida 2 University. **(Text provided below)**
4. MERABTI, F. (2021). *Enhancing master students’ dissertation writing through effective feedback: Electronic versus face-to-face feedback the case of second year master students at the Department of English, University of 08 Mai 1945 –Guelma* [Master’s thesis, University of 8 Mai 1945, Guelma]. **(Text provided below)**

1: RIHANI, Bariza. (2021). *Investigating the role of the “cake application” in enhancing English foreign language learners’ speaking skill the case of first year students of English at Biskra university*. [Master’s Thesis, Biskra University]. http://archives.univbiskra.dz/bitstream/123456789/18462/1/RIHANI_Bariza.pdfhttp://archives.univ-biskra.dz/bitstream/123456789/18462/1/RIHANI_Bariza.pdf

2: Kerambo, P. (2015). *Research proposal submitted to the Faculty of Education, St. Augustine University of Tanzania* [Unpublished research proposal]. Community Research. https://www.communityresearch.org.nz/wpcontent/uploads/formidable/FUL_L.pdf

3: Research Methodology

“As far as the methodology of the current study is concerned, it is opted for a convergent mixed method design to carry out the research. Achieving the aims of the study requires the deployment of a quantitative and a qualitative approach to the collection and analysis of the data. The quantitative data are meant to cover the first

and the second research questions while the qualitative data are purported to answer the third research question. In light of this, the study makes use of the following research instruments.”

“a) Quantitative Instruments: The participants in this part include 117 third year students EFL students enrolled in the department of English at the university Centre of Mila. Third year students were selected as they are considered to have more experience in dealing with language productive skills in comparison with first- and second-year students. This allows them to enrich the current study by sharing their experience serving the aims of the study. They took part as a sample that is conveniently chosen out of a population including 157 students. As such, the 117 students were the participants with whom the study is conducted deploying the following quantitative tools.

- The Emotional Intelligence-Productive Speaking Achievement Regression Test
- Students’ Questionnaire A
- Students’ Questionnaire B”

“b) Qualitative Instruments: the participants in this part are 22 teachers were conveniently sampled to take part in the present study by being the informants in the following qualitative tools.

- Writing Teachers’ Interview (11 writing teachers)
- Speaking Teachers’ Interview (11 speaking teachers)”

4:5. Research Methodology Design

“The current research adopts a qualitative-quantitative design in order to collect in-depth information about the theme under investigation.”

5.1 Research Method

“Formulating a deep view about the investigated topic necessitates the use of one research tool. Henceforth, a students’ questionnaire will be administered to second-year master students from the department of English, University of Guelma. During the second semester of the academic year 2020/2021, to investigate their perceptions about whether or not different modes of feedback have different impact on their writing proficiency, as well as to figure out which mode of feedback is more effective; electronic or face-to-face in enhancing students during their master dissertation 4

writing. Furthermore, a comparative quantitative analysis will be adopted to diagnose and analyse the results gathered from students' questionnaire."

5.2 Research Population

"This study involves haphazardly chosen second-year master students (N=87), at the department of English, University of Guelma to answer the questionnaire in order to explore and collect their opinions about which form of feedback provision is more effective in ameliorating their writing pieces as they are writing a dissertation and receiving feedback from their supervisors. However, only 50 participants of the research population responded to this questionnaire. Hence, they provided very beneficial and accurate information that helped in the conduct of the current research."

5.3 Research Tools

"This research is conducted to collect qualitative and quantitative data. The gathered data is interpreted and systematically demonstrated in tables, in the quantitative analysis. Whereas, the qualitative analysis encounters a deep analysis of the collected samples upon which a conclusion is constructed."

Exercise 2: Why have you chosen a qualitative, quantitative, or mixed-methods approach for the topic you have selected? Consider the nature of the topic and research questions in your response.

Exercise 3:¹³

"Look at the following research questions and discuss their suitability for a qualitative research design, what qualitative methods might be used to investigate them, and potential limitations of these methods:

- a. How does participation on an online social network affect English language learning?
- b. How do L2 learners' motivations change over time?
- c. What is the relationship between pre-task planning and performance of the task in small group work in an L2 writing classroom?"

¹³ Source: [19]



Sampling Techniques in Research

Objective: *By applying sampling techniques, students will be able to evaluate different techniques to select a representative sample that ensures valid and reliable results for generalizing to the larger population.*

11.1 Population

A population refers to *the entire group of individuals or elements that meet a specific criterion set for the study*. For example, if the researcher is researching schools in Canada, the population would include all the schools within the country. If he is investigating a particular medical condition like OCD, the population would consist of all individuals diagnosed with the disorder. Each member of the population is referred to as an *element*, which could be an individual, a household, or any other unit of analysis depending on the research objectives. Populations can be categorized as either *homogeneous*, where all elements share the same characteristics, or *heterogeneous*, where the elements vary in certain aspects. For example, a study examining the average IQ of employees at a company could consider the population homogeneous, as all employees are part of the same workforce. However, if the study focuses on workplace satisfaction, it might be necessary to divide the population based on gender, making it heterogeneous, since men and women may have different perspectives and experiences [\[23\]](#).

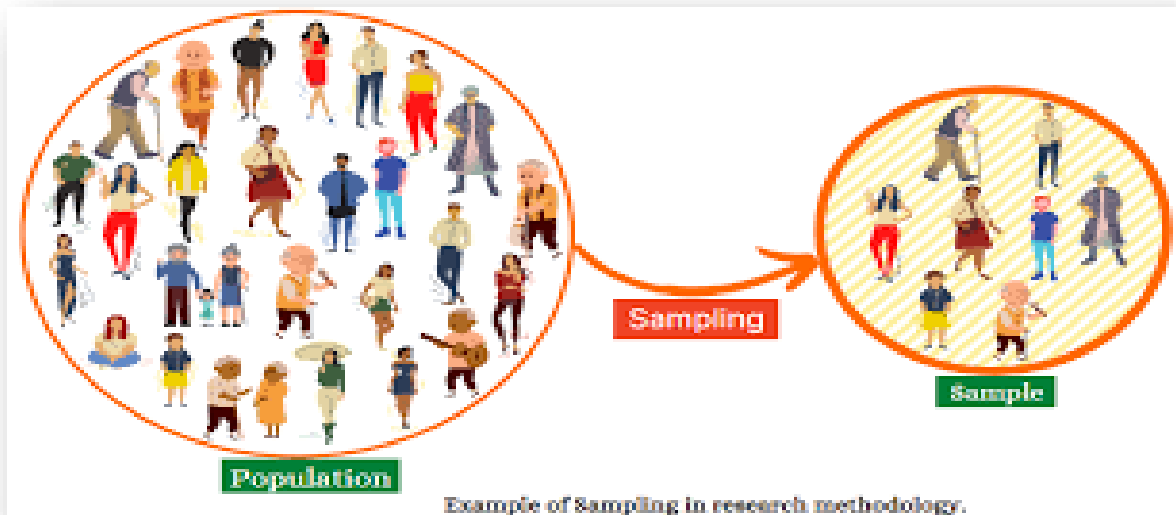
- ❖ It is worth mentioning that there is no universal rule for determining the optimal sample size especially in SLA survey research. While larger samples can increase statistical power and enhance representativeness, the appropriate size ultimately depends upon the research design, the planned analyses, and factors such as time, resources, and participant availability [\[27\]](#).

11.2 Sample

A sample refers to *a smaller group selected from the population for the purpose of research*. It is usually impractical to study the entire population due to limitations in time, resources, or accessibility. Accordingly, a *sample is chosen to represent the population*, and conclusions are drawn from this smaller group. To ensure the findings are *generalizable* to the entire population, the sample must be *representative*, meaning it accurately reflects the characteristics of the population. The more closely the sample mirrors the population, the more confident researchers can be in extending the conclusions to the broader group. However, the sampling process may encounter issues such as systematic errors and sampling biases. Systematic errors happen when certain characteristics are either over- or under-represented in the sample, leading to a misrepresentation of the population. Sampling *bias* arises when the sample is selected based on *the investigator's subjective judgment*, such as selecting participants who seem more approachable or less disturbed, which can result in an unrepresentative sample [23 , 24]. Figure 10 clearly illustrates the sample and population in research.

Figure 10

Example of Sampling in Research Methodology



Source: Google Images (n.d.).

(<https://encryptedtbn0.gstatic.com/images?q=tbn:ANd9GcQBNFH06bEVYmzyzv4jRzHUn2Vmn52lB7KXsw&s>)

11. 3 Types of Sampling Technique

11.3.1 Probability Sampling (Random Sampling Technique)

In probability sampling, every individual in the population has a known chance of being selected. This type helps ensure that the sample is representative of the population, allowing results to be generalized [\[23\]](#).

a. Random Sampling: Every individual has an equal and independent chance of being selected. This method is like drawing names from a hat to ensure fairness [\[23\]](#).

b. Systematic Sampling: This method selects individuals systematically, like choosing every 10th person on a list. It is easier to implement but still ensures randomness [\[23\]](#).

c. Stratified Sampling: The population is divided into subgroups (strata), such as age or gender, and random samples are taken from each group. This ensures specific subgroups are well-represented [\[23\]](#).

d. Cluster Sampling: The population is divided into clusters (e.g., geographic areas), and entire clusters are selected at random. All individuals within the chosen clusters are then sampled. This is useful for large, dispersed populations [\[23\]](#).

11.3.2 Non-Probability Sampling (Non-Random Sampling Technique)

In non-probability sampling, the selection process is not random [\[23\]](#). This is due to its reliance on the researcher's subjective judgment and its lack of adherence to probability theory in sample selection. They are often employed when randomness is not feasible or necessary, which can reduce bias [\[24\]](#).

a. Convenience Sampling: The sample is chosen based on what is easiest to access or available. This is a quick and cost-effective method but may not represent the population well [23, 24].

b. Purposive Sampling: Participants are chosen based on specific characteristics consistent with the study's purpose. This targeted approach helps gather detailed insights, but it may lack generalizability [23, 24].

c. Quota Sampling: Participants are selected so that certain characteristics (e.g., age, gender) are represented in specific proportions. It is not random but ensures diversity within certain parameters [23, 24].

d. Snowball Sampling: Research participants recruit other members for the study who meet the study's criteria [23]. This method is useful for reaching hard-to-reach populations but may lead to bias since participants often know each other [24].

The following example shows how the sample of participants can be presented and justified in the methodology section of your research project.

Participants

“The research engaged eight Social Studies teachers from three Senior High Schools in the Mfantseman Municipality. This group consisted of in-field teachers with specialized training in Social Studies and out-of-field teachers with general teaching qualifications but lacked specific training in the subject. By incorporating both types of teachers, the researchers sought to investigate how their knowledge and application of instructional material selection principles differ. The sampling process commenced with the selection of three senior high schools in the Mfantseman Municipality, employing the convenience sampling technique. Convenience sampling, as defined by Golzar et al. (2022), is a method in which units are selected for inclusion in the sample based on their accessibility to the researcher, considering factors such as geographical proximity, availability at a specific time, and willingness to participate in the research. The schools were selected due to their proximity, including three senior high schools: one Grade A, one Grade B, and one Grade C school. Students are

placed in these categories of schools based on their performance from junior high school to senior high school. Grades enable teachers to distinguish between varying levels of academic achievement. Grade A typically represents excellent performance, Grade B signifies good performance, and Grade C denotes satisfactory performance. The study selected Social Studies teachers in these grade schools based on their utilization of instructional materials to achieve academic achievement in students. The convenience sampling method was applied again to select teachers, emphasizing their willingness to participate in the study. A total of eight social studies teachers participated in the study.”

Source: Koranteng, J. O., Cudjoe, B. A., & Arthur, J. A. (2025). Social studies teachers’ knowledge and criteria for selecting and utilizing instructional materials in teaching and learning. *Frontiers in Education*. 10, 1560679. <https://doi.org/10.3389/feduc.2025.1560679>



11.4 Let's Practice:

Learning Objective: Assess one's ability to analyse research subjects and sampling techniques

Read the following research subjects' descriptions, and then answer the questions below:

- Are the research subjects clearly defined in these Paragraphs? Why?
- What sampling method is being used to select the research subjects?
- What potential limitations could arise from the way the research subjects are chosen?
- Is the sample size mentioned in the paragraphs?
- Do you think it is large to be representative of the population being studied? Why?

Research Subject 1:

Abdalhamid, Fouad. (2012). *Listening comprehension strategies of Arabic-speaking ESL learners*. [Master's thesis, Colorado State University]
<https://api.mountainscholar.org/server/api/core/bitstreams/88646ecb-b505-477e-9b0f-366dd2e21a0a/content>

Research Subject 2:

RIHANI, Bariza. (2021). *Investigating the role of the “cake application” in enhancing English foreign language learners’ speaking skill the case of first year students of English at Biskra University*. [Master's thesis, Biskra University].
http://archives.univ-biskra.dz/bitstream/123456789/18462/1/RIHANI_Bariza.pdf

Research Subject 3:**2.5 The population**

“The population of the study consists of first year EFL students along with EFL teachers who are in charge of first year students at the English Department of Blida 2 University.”

2.5.1 sampling

“Since it is not possible to deal with the whole population, we have randomly chosen 70 EFL first year students selected from different groups and 5 EFL teachers of first year at The English department of Blida 2 University.

It was preferable to investigate the importance of teacher's corrective feedback in improving first year EFL students' writing skill for the following reasons:

As we experienced, in the first year EFL teachers help their students build their language basics and skills, among them writing skills.”

“Since it is their first year specializing in the English language as a foreign language, they use it in all their courses. Therefore, first year EFL students may face some difficulties in mastering the language skills among them the writing skill. For this reason, teacher's corrective feedback is necessary and required to help EFL students improve their writing skill.”

Source: Feddak, K, Mansour, K, & Belkhamsa, S. (2024). *Investigating the importance of teachers' corrective feedback in improving EFL students' writing skill: The case of first year EFL students at the department of English, Blida 2 University, Algeria* [Master's thesis, Blida 2 University].

Research Subject 4:**2.1. The Sample Population**

“The participants of this actual study were second-year EFL students and English teachers from the English Department of Lounici Ali, University of Blida 02, we kindly asked them to participate in the study. The sample consisted of 15 students for

the pilot test, 60 students for the main test as well as the semi-questionnaire, and 10 teachers for the interview.”

2.1.4 Learners' Profile

Table 1: The Learners' Gender

Females	Males
45	15

“A sample of 15 Algerian second-year EFL learners was chosen randomly for the pilot

test, 60 second-year students were taken from full size of 350 for the main test and the semi-questionnaire; 45 females and 15 males who were all between the age of 18-20. The majority of these students have studied English as a foreign language at the University for 2 years. The reason behind selecting second year as a sample is that they are supposed to be familiar with the English language more than first year, and also, they are supposed to be motivated enough to learn a foreign language.”

2.1.5 Teachers' Profile

Table 2: The teachers' gender

Females	Males
6	4

“The teacher sample is composed of 10 Algerian EFL teachers, 6 females and 4 males, at the English Department University of Blida 02. The reason why this precise sample was chosen is that these teachers are experienced enough in teaching English as a foreign language, precisely most of them have at least ten years of teaching experience, and also the majority of them have been teaching second year students at the department for years. Some of them have taught Reading and Writing and Academic Reading modules, where these modules help the learners in analyzing and comprehending a text.”

Source: Oussalah, N, & Bouabsa, M. M. (2021). *Assessing the relationship between reading comprehension and vocabulary acquisition: the case of the English department of Ali Lounici/Blida02 University*. [Master's thesis, Blida 2 University]



Understanding Experimental and Quasi-Experimental Designs

Objectives: *By the end of this lesson, students will be able to:*

- ✓ Differentiate between experimental and quasi-experimental designs
- ✓ Explain the concept of quasi-experimental design and its potential limitations
- ✓ Evaluate the strengths and weaknesses of both experimental and quasi-experimental designs in different research contexts
- ✓ Differentiate between correlational and experimental research designs.

12.1. Experimental Designs

An experimental design [9] involves two key elements:

- **Manipulation of an independent variable:** Researchers alter one or more *independent variables* to observe the impact on the *dependent variable*.

Example: Impact of Study Time on Test Scores

- **Independent Variable:** Amount of study time (e.g., 1 hour, 3 hours, 5 hours)
- **Dependent Variable:** Test scores (e.g., the score achieved on a final exam)

In this case, the researcher manipulates the study time (*independent variable*) and measures how it affects the test scores (*dependent variable*).

- **Random Assignment:** Participants are *randomly assigned* to either the experimental group (which receives the treatment) or the control group (which does not).

Example: Participants could be randomly assigned to study for 1 hour, 3 hours, or 5 hours before taking the test. This prevents any systematic differences between the groups that might influence the results, such as prior knowledge or motivation.

The most common form of experimental design is the **Randomized Controlled Trial (RCT)**, which is widely regarded the standard for determining causal relationships in research [9].

12.2. Quasi-Experimental Designs

Like experimental designs, **quasi-experimental designs** lack *random assignment*. These designs are used when randomization is not feasible or ethical. Despite the absence of randomization, these designs aim to estimate the effect of an intervention [28].

An example of a quasi-experimental design could be:

- ✚ Create an experimental group and a comparison group, with the groups not assigned randomly.
- ✚ Administer a pre-test to both groups.
- ✚ Implement the treatment to the experimental group and no special treatment to the comparison group.
- ✚ Administer a post-test to both groups to assess differences.

The goal is to compare *changes* between the two groups and attribute any differences to the intervention, despite the lack of randomization [28].

Research conducted in natural settings such as schools, community programs, or organizational interventions, where random assignment is not feasible. These types of studies often compare groups that are naturally formed (e.g., a treatment group vs. a non-treatment group in different schools or communities) [9].

Example: A study evaluating the effectiveness of a new educational program in improving digital literacy could use this design. The program would be implemented in one school (experimental group) and not in another (comparison group). Both schools would be pre-tested on literacy levels and then post-tested after the program has been implemented in the experimental group.

12.2.1 Pre-Test Post-Test Non-Equivalent Group Design

In this design, a *control group* is chosen to be as similar as possible to the intervention group. By measuring both groups pre- and post-intervention, the aim is to isolate the effect of the intervention by comparing differential changes between the groups [28]. This design is useful when randomization is not possible, such as when studying existing groups or settings, like policy rollouts or organizational interventions [9].

A researcher, for instance, wants to investigate the effect of digital reading (as a new teaching method) on first year student comprehension, but random assignment to

different digital reading teaching methods is not possible. This is because the students are already assigned to their regular classes, and the intervention (digital reading) will be implemented in one class, while the other class follows the traditional teaching method (print reading). Consequently,

- Intervention Group: Group 1 receives the new teaching method (digital reading).
- Control Group: Group 2 continues with the traditional reading (print-based reading).
- Before the intervention begins, the researcher measures both groups' pre-intervention comprehension on a reading test.
- After a certain period, the same test or a similar test is given to both groups to measure post-intervention performance.

The researcher wants to *isolate the effect of the new teaching method on student performance by comparing the differential changes between the intervention and control groups*.

- If group 1 (intervention) shows significantly greater improvement than group 2(control), it could suggest that the new teaching method had a positive impact on student comprehension.
- If both groups improve similarly, this could suggest that the new teaching method had little or no effect beyond the normal classroom experience.

This design allows the researcher to draw conclusions about the *effect* of the intervention (new teaching method) on student comprehension even when randomization is not possible. By carefully selecting control and intervention groups that are as similar as possible (e.g., similar prior performance, same age group, similar socioeconomic background), the researcher can attempt to control for external variables that might influence the results.



- In many educational settings, randomization is not feasible because of pre-existing classes, teachers, or policies that cannot be changed. This design allows for practical research in these real-world settings [\[9, 28\]](#).
- Sometimes, randomizing students to different groups may be unethical (e.g., denying students the opportunity to receive an innovative teaching method). In such cases, using a non-randomized control group design can still provide valuable insights while addressing ethical concerns [\[9, 28\]](#).

12.2.2 Interrupted Time Series (ITS)

Interrupted time series (ITS) designs focus on repeated data collection at specific intervals before and after an intervention to identify any effects of the intervention [\[28\]](#). ITS is useful when a comparable control group cannot be found. One key challenge is determining clear pre- and post-intervention periods, especially when the intervention has an uncertain or gradual implementation. ITS designs are beneficial in real-world settings, especially when evaluating large-scale policy changes or public health initiatives [\[9\]](#).

Example: A policy intervention designed to reduce the number of youth smoking could implement ITS by collecting smoking rates over several months before and after the policy is introduced. The analysis would then compare the trends in the data to determine if the intervention caused a significant change relative to previous trends [\[28\]](#).

12. 2.3 Stepped Wedge Designs

A stepped wedge trial is a type of quasi-experimental design where all participants eventually receive the intervention, but the timing of when each participant or site receives the intervention is staggered over time [\[28\]](#).

Example: A study evaluating a new protocol for reducing hospital readmissions could use a stepped wedge design, where different hospitals receive the protocol at different times. This design allows researchers to assess whether the intervention improves

patient outcomes without denying any hospital the opportunity to implement the new protocol [28].

-Advantages of Stepped Wedge Trials

- Ideal when all participants need to eventually receive the intervention, but immediate implementation is not possible due to resource constraints.
- Early sites that receive the intervention first can provide insights that improve the implementation at later sites.
- This design ensures that all participants receive the intervention, which can be important in health or policy interventions [28].

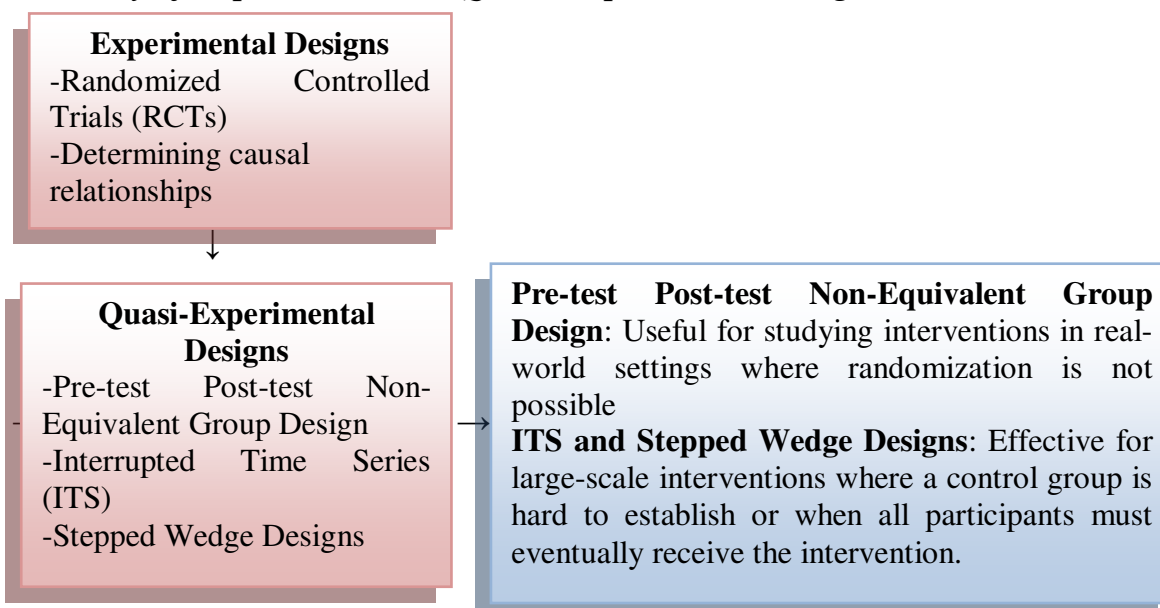
Evidently, when evaluating the effectiveness of an intervention, the following should be considered:

- ✚ Different designs have different strengths and limitations [9].
- ✚ Real-world factors such as environment, population, and resource availability can affect outcomes [28].
- ✚ It is not just about statistical significance but also about understanding the relationship between the independent and dependent variables [28].

To review the characteristics of experimental and quasi-experimental designs, consider **Figure 11**.

Figure 11

Summary of Experimental and Quasi- Experimental Designs



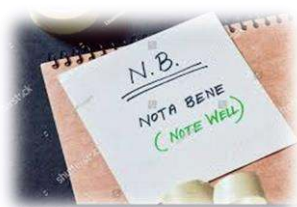
Source: Adapted from [9, 28]

Let us consider the following example to see how experimental design and study structure are described in academic research.

The design of the study

“The two-year study adopted a mixed-methods approach, consisting of an RCT and a series of case studies. In the context of the drive to make more use of experimental techniques in educational research, a mixed methods approach conferred several benefits, permitting quantitative data from an RCT to be gathered to answer the question, what works? (or what does not work?), and qualitative data from case studies to be used to yield information on factors which may have influenced impacts. The RCT comprised three groups: a full treatment group, where participating teachers experienced the full CPD programme, a partial treatment group, where participating teachers experienced the short CPD programme, and a control group, where the training programme was not provided. The design was a ‘delayed treatment-control group’ design as schools in the control group could opt to take the training programme after two years. The case studies were conducted on a subset of approximately one-third of the schools in each of the three groups in the RCT.”

Source: Bennett, J., Hanley, P., Abrahams, I., Elliott, L., & Turkenburg-van Diepen, M. (2019). *Mixed methods, mixed outcomes? Combining an RCT and case studies to research the impact of a training programme for primary school science teachers.* *International Journal of Science Education*, 41(12),1645–1665.
<https://doi.org/10.1080/09500693.2018.1563729>



A **correlational** design is a *non-experimental* form of research in which researchers use statistical techniques *to describe and measure the degree of association between two or more variables, without establishing causation* as in experimental designs [42].

This example shows how the correlational design differs from the experimental design.

METHODOLOGY

“The method of quantitative research used in that study was the correlation technique. The collection and analysis of structured data, which can be based on a numerical representation, is the subject of a quantitative research method. This research has been based on a correlational study. Correlation studies will measure the influence of reading interest and motivation on reading. Ary, Jacobs, Sorensen, & Walker (2010) mention that correlation research is non-experimental research without research manipulation. To describe and measure the direction and relationship between two variables, correlation statistics are used in a correlation study. Creswell (2012) proposed that the correlational research was carried out in the following stages.”

“1. Determining if correlation studies are the most appropriate solution for a research problem. The writer used a series of research questions to determine the relationship between those two variables.

2. Finding out who's supposed to be studied. Preliminary data on students from SMA 22 Palembang has been collected by the writer.

3. Determining two or more measures for each individual in the study. The writer selected two questionnaires as the instruments for measuring the variables of reading interest and motivation.

4. Gathering the data. The writer used a database of scores from the two variables that have been collected

5. Preparing an analysis of the data and report on its results. The writer applied the correlation analysis of Spearman Brown since the data were not normally distributed. This data analysis technique was used to measure the association among the variables measured.

6. Interpreting the results of the data analysis”

Source: Alodia, D. J. (2024). A correlational study on reading interest and reading motivation of the secondary school students. *Didascein: Journal of English Education*, 5(1), 44–50



12.3. Let's Practice

Learning Objective: Assess one's ability to evaluate quasi-experimental designs in a real-world context.

Scenario: A study is investigating the effect of a new digital learning application implemented in different secondary schools in Blida. Students are not randomly assigned to groups, and the program is implemented in some schools but not in others.

Questions:

- What research design would be most appropriate for this study, and why?
- What challenges might arise from using this design? How could those challenges be addressed?



Observational Methods

Objective: *Upon completion of this lesson, students will be able to design a simplified classroom observation checklist to systematically collect data on classroom behaviors and teaching practices.*

13.1. Observation

Observation is a fundamental *qualitative* data collection method in second/foreign language acquisition (FLA/SLA) research [19]. It involves the *systematic* and *planned* watching and recording of *naturally occurring language behaviour* in authentic contexts, such as classrooms and language learning settings [9, 19]. Unlike experimental approaches, observation does not manipulate variables; instead, it aims to document events as they naturally unfold, thereby offering data with high ecological validity, which closely mirrors real-life language uses. This method has been widely employed to investigate areas such as classroom interaction, negotiation of meaning, corrective feedback, and learner strategies. Certainly, the use of observation for inquiry is guided by the research questions or purpose of the study, which dictate the most suitable approach for addressing them to generate *credible results*. Furthermore, observation is frequently used alongside complementary methods, such as interviews or stimulated recall, to achieve *triangulation*, support the validity of interpretations, and thus build a more comprehensive understanding of language learning processes [19].

13.2. Types of Observation

Researchers can use different types of observation depending on their goals and research settings.

13.2.1 Participant Observation (Non-Structured/Open)

Participant observation requires the researcher to engage deeply with the group being studied, not only by physically joining but also by learning their social norms,

behaviours, and communication styles. The researcher needs to integrate into the group and establish a specific role within it, relying on their own interpretation of the group's activities as the primary data. To collect meaningful data, the researcher must have strong interpersonal skills and sensitivity [9]. Participant observation allows for a more in-depth understanding of the context, social dynamics, and personal perspectives of group members, which can be essential for qualitative research.

- ***The Complete Participant***

In this role, the researcher hides their identity as an observer and aims to be a full member of the group. The idea is that if the group knew about the observation, their behaviour would change, which would affect the study. The researcher's immersion in the group happens without revealing the true research purpose [9].

- ***The Participant as Observer***

The researcher is open about being an observer but still engages closely with group members. By participating in activities and asking group members about their behaviours, the researcher gains insight. The researcher might also create specific scenarios to observe the group's response to a particular situation [9].

- ***The Marginal Participant***

This role closely resembles the "complete observer" role. The observer does not participate in the group's activities, and their identity as a researcher is hidden. This observer's status is more passive compared to other roles [9].

- ***The Observer-as-Participant***

In this role, the researcher does not engage in group activities but is known to the group as a researcher. They observe the group while being acknowledged as part of the group's research process [9].

13.2.2 Structured Observation (Closed)

For analysing overt behaviours, structured observation tends to be more precise and effective than asking participants to report their actions. The researcher observes *specific behaviours within a more controlled setting than in naturalistic or participant observation*. A crucial aspect of this type of observation is the use of a coding scheme, whereby behaviours are categorized systematically [9]. Structured observation is

designed for more *controlled, quantitative analysis*, ensuring that specific behaviours are tracked and measured with precision.

- ***Coding Schemes***

Coding schemes are systems used to categorize and track specific behaviours. This involves defining behaviours of interest and recording how often and for how long they occur. Observers may use simple categories, like "yes/no" for whether behaviour happened, or more complex multi-category systems depending on the research focus [\[9\]](#).

- ***Checklists and Category Systems***

Observation tools like checklists and category systems help structure the data collection process. Checklists involve a list of items to note as present or absent, while category systems categorize behaviours in more detail. These methods are especially useful in structured observation and field experiments to track and measure specific behaviours [\[9\]](#).

- ***Experimentation and Coding Schemes***

Structured observation is often used in field experiments to collect data on specific behaviours, allowing the researcher to measure the dependent variable in a controlled and methodical manner [\[9\]](#).

13.3. Designing Observational Studies

Before collecting data, researchers need to plan carefully. They must decide [\[9, 19\]](#):

- ✚ What questions the observation will answer.
- ✚ Where and when to observe.
- ✚ How many sessions will be conducted and how long they will last.
- ✚ What tools will be used for recording and coding the data (e.g., field notes, audio/video, coding sheets).

As a result, a clear plan ensures that observations are systematic and can be analyzed reliably.

13.4. Recording and Coding Data

Observation is not just watching; it involves careful recording of what happens. Researchers often use, [\[9, 19\]](#):

- **Field notes:** Written descriptions of events and interactions.

- **Audio or video recordings:** These allow for repeated analysis of language use.
- **Coding schemes:** Predefined categories used to classify behaviours or language features (for example, different types of teacher feedback).
- Coding helps researchers analyze data consistently and objectively.

13. 5. Advantages and Limitations

—The advantages of classroom observation can be summarized as follows [\[9\]](#):

- + Captures real language use in authentic contexts between teachers and students.
- + Provides rich, detailed data from teacher-student interactions.
- + Reveals interactional features between teachers and students that might not appear in tests or interviews.

—The limitations of classroom observation can include [\[9\]](#):

- + Teachers and students may change their behaviour when observed.
- + Observation requires time and careful analysis.
- + Coding can be complex, especially for unstructured data.

13.6. Ethical Considerations

Ethics are an essential part of observational research. Researchers should obtain informed consent, ensure participants' privacy, and minimize their influence on the observed context. In classroom settings, this often involves explaining the purpose of the observation to teachers and students in order to guarantee confidentiality.

If you decide to conduct an observation as part of your research project, consider the following example of a consent form to ensure that participants are fully informed and their rights are protected.

Consent Form for Participant Observation

Project Title:

.....

Participant Consent Form

The research participant declares that:

- They have read and understood the information about this observational exercise.
- They have had the opportunity to ask questions about the exercise.
- They voluntarily participate.
- They can withdraw at any time without any negative consequences.
- They give permission for the information they provide to be used for teaching and learning purposes.
- They allow anonymized/pseudonymized data to be recorded and stored for educational purposes.

Date and Place: _____

Participant Name: _____

Participant Signature: _____

Source: Adapted from: Tilburg University, Participant Observation Consent Form by Tilburg University (n.d.)

https://www.tilburguniversity.edu/sites/default/files/download/Consent_sheet_participant%20observation_general.pdf



13.6. Let's Practice

Learning Objective: Practice observational skills by monitoring classroom interactions during a selected activity

Group Work

Choose a lesson or activity that involves significant interaction between students and the teacher, such as:

- Group Work: Students collaborate in groups to complete a task or discuss a topic.
- Teacher-Led Discussion: The teacher leads a class discussion, encouraging student participation.
- Pair Work: Students work in pairs to practice a language skill or complete an exercise.

Observe for 10-15 Minutes: During your observation, concentrate on the following categories of interaction:

- Teacher-Student Communication
- Student-Student Communication
- Student Participation (active or passive)
- Teacher's Role (eliciting responses, providing feedback, facilitating learning)

While observing, use the provided checklist to mark the categories you observe. The checklist will help track various aspects of communication and engagement between the teacher and students.

Source: Spada, N., & Fröhlich, M. (1995). *COLT observation scheme: Communicative orientation of language teaching scheme, coding conventions and applications*. Macmillan Education Australia.

Access the checklist here:

https://app-uploads-prod.storage.yandexcloud.net/a43b5d03-f3f7-4f61-a5f7-8e6993afea42/hlal5e_colt_b.pdf

Study Question: The appropriateness of observation does not imply that it is an easy or trouble –free option. Discuss.



Designing and Conducting a Pilot Study

Objectives: *At the end of this lesson, students are expected to:*

- ✓ Define what a pilot study is
- ✓ Recognize the significance of conducting a pilot study as a preliminary step before the main study
- ✓ Identify key elements and steps involved in planning and conducting a pilot study.

14.1. What is a Pilot Study?

In any research project, the tools you use for data collection are crucial to the *reliability* and *validity* of your results. Once you have decided on the appropriate methods for data collection, it is essential to assess their suitability and effectiveness through a pilot study. A pilot study serves as a *feasibility test* [25] for the methods you intend to use in your main study. In fact, it is a trial version of your research, whereby you test out the data collection instruments, such as questionnaires, interviews, or surveys, on a smaller group of participants (usually 15-20 individuals). The feedback collected helps refine these instruments and avoid potential issues during the actual data collection procedure.

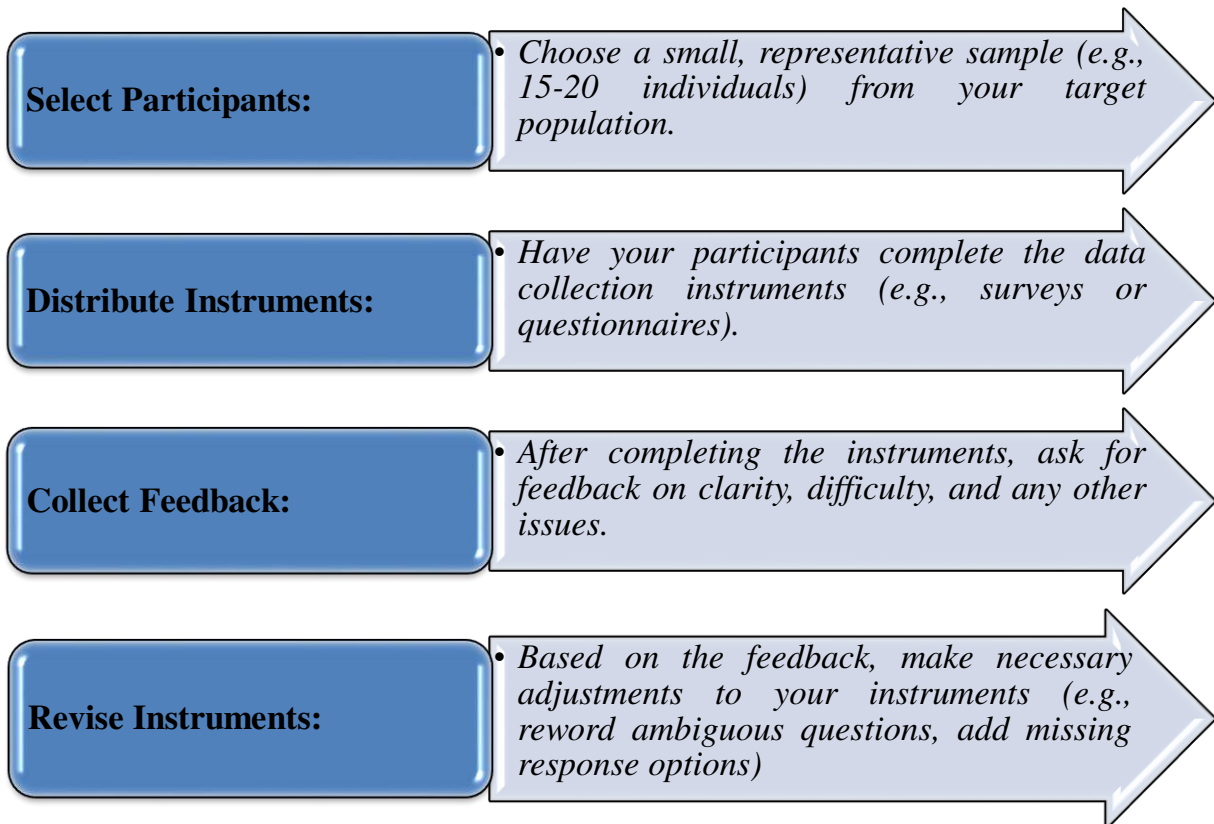
14.2. Why Do you Need to Run a Pilot Study?

Pilot studies [26] are important because they:

- ✚ Help you identify unclear or problematic items in your data collection tools (e.g., questions that confuse participants).
- ✚ Allow you to assess if your data collection process works in practice.
- ✚ Assist you in finding out any unforeseen problems in your study design, and thus reducing risk in the main study.
- ✚ Also help test the planned statistical and analytical methods, ensuring they work as intended, and accordingly answering methodological questions.

14.3. How Do you Conduct a Pilot Study?

In order to conduct an effective pilot study [\[27\]](#), you need to consider the following steps:



It is generally advised to begin by using a *think-aloud approach* [\[27\]](#) to pilot the questionnaire's items with three or four individuals (typically colleagues, friends, or family members). These participants can respond to the items and offer detailed feedback. Using their input, you can then create a nearly finished version of the questionnaire, which should be tested with participants resembling the target population for which the tool is designed for. Consequently, feedback from participants can reveal:

--*Responses* → If many respondents skip certain questions, this could indicate that something is unclear or problematic.

-- *Response Range* → Questions that elicit almost identical answers (e.g., everyone chooses "disagree") may not provide enough variability for meaningful analysis.

-- *Internal Consistency* → For multi-item scales, make sure responses align across items measuring the same construct.

14.4. Key Revisions Following the Pilot Study

The results of the pilot study help researchers in [27]:

- ✚ Fine-tuning the final version of the instrument by eliminating ambiguous, irrelevant, or overly difficult items.
- ✚ Refining administration procedures for clarity and efficiency.
- ✚ Finalizing the layout and structure of the questionnaire.
- ✚ Rehearsing the entire process, including timing and data analysis methods, to ensure smooth execution in the main study.

The following example clearly illustrates how a pilot study can be presented in a dissertation. In this example, the researcher states the objective of the pilot study, the participants involved, the problems encountered, and the adjustments made to the research instrument. Rather than simply stating that a pilot study was run, the researcher provides a detailed reflection on the process and its outcomes, showing how the pilot study helped refine the interview questions before the main data collection.

Pilot Study Participants

“The primary purpose of the pilot study conducted for this research was to help the researcher to develop and examine the main interview questions. The pilot study interviews were carried out with a sample of six interviewees ($n=6$), all of whom were female primary school leaders from community girls' schools in Saudi. A set of semi-structured questions were prepared. However, the disadvantage of a pilot study is that the information gathered may be unreliable, due to the small sample size. Moreover, in this study, most of the pilot sample refused to be audio-recorded in the interviews, which meant that the researcher was obliged to seek alternative means of recording the interviews. These alternatives were potentially useful for the main research interviews.”

Reflection on the Pilot Interviews

“The pilot interviews showed part of the picture of the research scenario through interviews with a small sample ($n=6$) of school leaders (principals) from girls' schools in Saudi Arabia. These school leaders would not be included in the main data collection. This pilot study was designed to be more descriptive, so that the main interview questions could be examined for their validity in a more structured format. A number of viewpoints were gathered from the pilot sample, which helped clarify

whether the interview questions were clear, unambiguous and easy for the interviewees to understand. Modifications were subsequently made to the questions, as suggested. For example, in the first question, ‘Describe your style of leadership?’, prompts were added: motivational, performance-based, regulated) to explain general types of leadership style. Moreover, the interview question, ‘How would you describe your role and responsibilities as a school principal?’ appeared to be too broad for the participants, and they answered out of context. Therefore, prompts were used to provide guidance. For example, follow-up questions were added: ‘Do you draft plans for your school?’, ‘Who are the parties involved?’, ‘What is your role as a leader in preparing school plans and strategies?’, ‘If you encounter a problem during the delegation of tasks to your staff, do you have the option of changing plans?’, ‘Who do you seek help from?’, ‘How do you propose training programmes for school staff?’, ‘Do you need the Ministry’s permission?’, and ‘If the administration at your school rejects a proposal or training plan prescribed by the Ministry, how do you deal with the situation? Has this happened before?’”

Source: AlSarrani, A. H. F. (2021). *Exploring female leaders’ practices and styles of leadership in Saudi primary schools*. [PhD thesis, University of Warwick].
<http://wrap.warwick.ac.uk/165376>



14.5. Let's Practice

Learning Objective: Practice the use of a pilot study in research

Read the following scenario and then answer the questions.

Scenario:

Imagine you are conducting a study to measure the satisfaction of first-year EFL Master's students with the Moodle platform, which they use for submitting quizzes and accessing learning materials in the Research Skills module. You have developed a survey that includes questions about their general experience, ease of navigation, and their satisfaction with quiz submissions. Before distributing the survey to all students, you decide to pilot it. For this purpose, you design a 10-question survey using a Likert

scale (ranging from "Very Satisfied" to "Very Unsatisfied") to measure their satisfaction with different features of Moodle (e.g., navigation, ease of use, accessibility, and submission of quizzes).

Sample Question: *How satisfied are you with the ease of navigating the Moodle platform for submitting quizzes?*

You distribute the survey to 15 students from the same group (first-year Master's students), who serve as your pilot participants. They answer the questions and provide feedback on the survey.

10 students skip the question about "satisfaction with the Moodle platform experience."

11 students select the "Neutral" option for their daily access to Moodle to submit quizzes.

After completing the survey, you ask the 15 pilot students for feedback on the questions:

- Was any question confusing? Specify which one(s).
- Were there any response options that did not match your experience? Explain why.
- Did the questions capture your experience? Explain why.

From the feedback, you find that:

Many students did not understand the question about "satisfaction with the Moodle platform experience." They mention that it was too vague, and they were unsure whether it referred to the overall experience, ease of use, or something else.

Several students chose "Neutral" because they did not feel strongly satisfied about their Moodle experience, which they saw as "average", but they were not sure how to express that on the scale.

Some students were unclear about the "Ease of Navigation" question, as they felt Moodle was fine for quiz submissions but struggled with finding other resources (e.g., lecture slides).

Classroom Discussion:

1. How does the pilot study help you refine the survey?
2. Why is it important to pilot test the survey on a small group before using it on a larger group?

3. What are the potential risks of not conducting a pilot study in research?



Questionnaires

Objectives: Upon completion of this lesson, students will be able to:

- ✓ Design a questionnaire appropriate to a specified research purpose
- ✓ Identify the key components and layout of a questionnaire
- ✓ Apply appropriate layout principles to enhance clarity and usability.

15.1. What is a Questionnaire ?

A questionnaire is a structured research tool used to collect data from individuals in a systematic manner. It is most commonly employed in *quantitative research* to obtain information about respondents' *opinions, behaviours, attitudes, or personal characteristics* in a *standardized format*. In educational and social research, questionnaires are widely used to measure knowledge, attitudes, and perceptions within a specific group or population. A key characteristic of a standardized questionnaire is that all respondents are presented with the same set of questions in the same order. This *standardization* ensures consistency across responses, enabling reliable comparison and analysis of the collected data while minimizing potential bias resulting from variations in question presentation [\[27, 43\]](#).

When deciding to use a questionnaire, researchers should clearly define its primary objective and ensure that it is consistent with the overall research purpose. The questionnaire should include relevant and well-designed questions which elicit empirical data that address the research questions. In studies with large samples, questionnaires tend to be highly structured and rely mainly on closed-ended and numerical items. In contrast, studies with smaller samples often employ less structured questionnaires that include more open-ended and word-based items to allow for richer qualitative responses [\[43\]](#).

15.2. Types of Questionnaires

15.2.1 Closed-Ended Questionnaires

Closed-ended questionnaires are highly structured instruments that provide respondents with a set of *predefined response options*. They are generally quick and easy to complete, as they restrict responses to specific categories determined by the researcher. In addition, they are straightforward to analyze because responses can be quantified and summarized using frequencies and percentages, yielding numerical data suitable for statistical analysis [43].

Example

Gender (please tick one)

☐ Female ☐ Male

15.2.2 Open-Ended Questionnaires

Open-ended questionnaires are mainly practical when the researcher does not know the range of possible responses in advance. They encourage participants to respond in their own words, enabling them to express personal views, experiences, and meanings. This format enhances the authenticity, richness, and depth of the data collected. Nevertheless, open-ended questionnaires also present several challenges. Respondents may feel uncertain about the type or amount of information expected, which can cause confusion. They typically require more time and effort to complete and may make the questionnaire appear lengthy and discouraging. The data generated are more difficult and time-consuming to analyze, in view of the fact that responses are qualitative rather than numerical [27].

In open-ended questionnaires, a series of questions or prompts is presented in a clear structure and sequence. While the list of items and focus are set by the researcher, the format does not impose the type of the response, allowing participants to reply in the manner they consider most appropriate. For this reason, such questionnaires are often described as semi-structured [43].

Example:

How did your professional goals lead you to an administrative role rather than a teaching position?

In order to reduce ambiguity and support respondents, it is often useful to offer guidance indicating the type of response expected.

Example:

Please indicate areas for improvement in the teaching of English in your department.

--Even if open-ended questions provide respondents with greater space to articulate their views compared to simple tick-box responses, this flexibility limits the possibility of direct comparison across participants. Moreover, open-ended questions are generally more time-consuming than scaling or rating-scale items [\[27, 43\]](#).

15.2.3. Dichotomous Questions

Dichotomous questions are highly structured items that offer respondents only two possible response options, such as **Yes/No** or **True/False**. This format makes responses easy to code and analyse; each question yields a clear and unambiguous answer. For this reason, dichotomous questions are useful when the researcher seeks straightforward factual information. However, the major limitation of dichotomous questions is that they restrict the depth and richness of responses. They do not allow respondents to elaborate on their answers or express degrees of opinion. When more detailed information or further clarification is required, it may be more appropriate to supplement dichotomous questions with additional formats, such as rating scales or follow-up open-ended questions [\[43\]](#).

Example:

Is classroom attendance considered in your evaluation?

☐ No ☐ Yes

If yes or no, please explain:.....

15.2.4 Multiple-Choice Questions

Multiple-choice questions are employed when the aim is to obtain more detailed information while still maintaining a structured format. In this type of question, response options are carefully designed to capture the likely range of responses to a given statement. The researcher is interested in identifying which category best represents the respondent's answer, and participants are required to select from a set of predefined alternatives [\[43\]](#). Multiple-choice questions are particularly useful for collecting data on preferences and behaviours [\[27\]](#).

In order to ensure the effective use of multiple-choice items, the response categories should be comprehensive, exhaustive, and representative of the possible

range of responses. Categories should not overlap, as this may confuse respondents and compromise the accuracy of the data. Clear instructions should also be provided regarding how the question should be completed, specifying, for example, whether respondents are allowed to select only one option (single-answer mode) or more than one option (multiple-answer mode) [43].

Like dichotomous questions, multiple-choice questions are easy to code and can be quickly aggregated to produce frequencies of responses. When such quantification is appropriate for the research objectives, multiple-choice questions can be an efficient and practical data collection instrument.

Examples¹⁴:

Number of years in teaching:

☐ 1–5 ☐ 6–14 ☐ 15–24 ☐ 25+

Which age group do you currently teach? (You may tick more than one.)

- ☐ Infant
- ☐ Primary
- ☐ Secondary (excluding sixth form)
- ☐ Sixth form only

Despite their advantages, multiple-choice questions have limitations. One common problem is that the same option or wording may be interpreted differently by respondents, which can lead to ambiguity in the data and influence the validity of the results [43].

15.2.5 Ranking and Rating Scales

Together, ranking and rating scales are structured question formats used to measure degrees of preference, agreement, or importance. Ranking scales require respondents to order a list of items according to priority or preference; whereas, rating scales ask respondents to evaluate items along a predefined continuum or scale [43]. Both formats are useful for indicating variations in the intensity of responses.

Ranking scales allow researchers to identify distinctions among respondents' priorities. However, they may place considerable cognitive demands on participants,

¹⁴ **Source:** [43]

who may find it difficult to differentiate clearly between items or may not feel strongly enough to impose a strict order. As a result, rankings may sometimes reflect forced distinctions rather than genuine preferences [43].

Example¹⁵:

Please indicate your priorities by placing numbers in the boxes to show the order of your views

1 = highest priority, 2 = second highest, and so on.

--Rating scales, in contrast, allow respondents to express the degree to which they agree with a statement or how frequently or intensely they experience something.

Example:

All students should have free access to Internet in the classroom:

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

❖ There are several commonly used response categories in rating scales [43] including:

Strongly disagree / Disagree / Neither agree nor disagree / Agree / Strongly agree

Very seldom / Occasionally / Quite often / Very often

Very little / A little / Somewhat / A lot / A very great deal

Never / Almost never / Sometimes / Often / Very often

Not at all important / Unimportant / Neither important nor unimportant / Important / Very important

Very true of me / A little bit true of me / Don't know / Not really true of me / Very untrue of me

➤ *Likert Scales*

Likert scales are among the most widely used rating scales in social science research. They are designed to measure the degree of agreement or disagreement with a given statement and are commonly used to assess attitudes, beliefs, and perceptions [43]. One possible limitation of Likert scales is the problem of interpretation, as one

¹⁵ Source: [43]

respondent's understanding of "agree" may differ from another's interpretation of "strongly agree."

➤ ***Semantic Differential Scales***

Semantic differential scales prompt respondents to indicate their position between two opposing adjectives. These scales are particularly useful for measuring attitudes, evaluations, or emotional responses toward an object or concept [43].

Example:

1234567

Useful — — — — — Useless

Respondents indicate their opinions by marking the position on the scale that best represents their view.

Although ranking and rating scales are practical and accessible instruments that facilitate data collection and analysis, researchers should be mindful of their limitations. The apparent sensitivity of scale data may be misleading, because equal numerical distances on a scale do not necessarily represent equal psychological distances for respondents. For example, the intensity of feeling between "strongly agree" and "agree" may not correspond to that between "disagree" and "strongly disagree" [43].

15. 3. Practical Considerations in Designing Questionnaires

- ✚ Effective questionnaire design requires careful alignment with the research objectives to verify that items accurately operationalize the variables of interest [27].
- ✚ Researchers must select appropriate question types, choosing between closed-ended and open-ended formats based on the nature of the data required and the intended analytical approach [43].
- ✚ Questions should be clear, concise, and written in simple, natural language to avoid leading questions (e.g. Do you prefer online learning than face-to-face instruction? ambiguity, jargon, double negatives (e.g., Do you feel that without a parent/teacher association teachers are unable to express their views to parents clearly?) and double-barrelled constructions [27].

- ✚ Response categories must be balanced and non-overlapping to prevent bias and improve measurement validity. Using multi-item scales is recommended to capture different dimensions of the concept in a more reliable way [\[43\]](#).
- ✚ Questionnaire items may be developed from prior qualitative research or adapted from previously validated instruments, provided they are suitable for the current research context [\[43\]](#).
- ✚ Ethical considerations are essential throughout the design process, including obtaining informed consent and ensuring respondents' anonymity and confidentiality [\[27\]](#).
- ✚ Pretesting or piloting the questionnaire is a critical step, allowing researchers to identify unclear wording, refine items, and improve overall data quality before full administration [\[43\]](#).
- ✚ Questionnaires should remain concise, typically requiring no more than 30 minutes to complete, and should present questions in a logical sequence, beginning with non-threatening factual items (e.g., age group, gender, occupation, years in post, qualifications) and progressing toward more opinion-based or sensitive questions [\[27\]](#).
- ✚ Clear instructions, a well-designed layout, and a brief introductory statement explaining the purpose of the study and assuring confidentiality can enhance respondent cooperation and completion rates [\[27\]](#).

15.4. Piloting the Questionnaire

Conducting a pilot study is a crucial step for ensuring the reliability and validity of a questionnaire. It helps identify issues with question clarity, structure, and response categories, as well as assess the appropriate time required to complete the survey [\[43\]](#). Therefore, piloting process ensures that the questionnaire is clear, relevant, and easy to understand [\[27\]](#).

In order to pilot the questionnaire, you should [\[27, 43\]](#):

Ensure the wording of questions is clear and unambiguous.

Check the appropriateness of response categories and the layout.

Ensure the questionnaire is not too lengthy or short and does not cause respondent fatigue.

Test if questions are appropriate for the target audience and yield meaningful responses.

Ensure response options for closed questions are comprehensive and do not lead to bias.

The major points to be covered [\[27\]](#) in your research work are:

-Description of and rational for the main content areas covered by the items.

-Factual description of the instrument (e.g., number of items, response option, language)

-Details about piloting the instrument

-Any available data concerning the reliability and validity of the instrument, including internal consistency estimates, e.g., *the internal consistency of the instrument was assessed using Cronbach's alpha.*

- Procedures used to administer the questionnaire

-Length of time that was needed to complete the questionnaire

-Questionnaire return rate

The following example shows how a questionnaire can be presented in the methodology section:

“The present study used a cross-sectional correlation design. The questionnaire was designed based on a psychological perspective of engagement and the student

engagement construct was considered multidimensional. Student engagement is conceptualized in this study as the student investment of time and energy in PBL tutorial experiences at the cognitive, affective, behavioral dimensions. An initial questionnaire was designed to operationalize the three dimensions of the student engagement construct based on our previously published conceptual framework of engagement. A focus group discussion was then conducted with medical education experts (n = 12) who examined the degree of concordance between each item of the questionnaire and the intended construct and for examining the degree of clarity of the items. The outcome of the focus group discussion was that experts agreed to include all the 15 items with slight modifications and degrees of agreement ranging from 60 to 100% for items. The questionnaire was then pilot tested with a small group of year 2 medical students (n = 10) for suitability of the items and no further modifications were included.”

Source: Kassab, S.E., El-Baz, A., Hassan, N. Hamdy, H., Mamede, S., & Schmidt, H. G.(2023). Construct validity of a questionnaire for measuring student engagement in problem-based learning tutorials. *BMC Med Educ* 23, 844. <https://doi.org/10.1186/s12909-023-04820-1>



Because online questionnaires developed through Google Forms are widely adopted for their accessibility, time efficiency, and practicality, the following video provides guidance on creating a Google Form questionnaire.

Source: Tutorials by Manizha & Ryan. (n.d.). *Comment créer un questionnaire d'enquête Google Form (étape par étape)* [Video]. YouTube. https://youtu.be/1PrLxgqgtZo?si=zd0-QB_1SiWlioES



15.5. Let's Practice

Learning Objective: Assess one's ability to review and administer a questionnaire

Review the questionnaire available at the following link before answering the questions below:

Source: Institute for Art and Culture. (n.d.). *Proforma 10: IQA observation and questioning checklist*. <https://iac.edu.pk/10%20proforma.pdf>

- 1-Determine the primary components of the questionnaire
2. Assign numerical codes to the various question types within the questionnaire
3. Do the questions successfully measure the purpose of the questionnaire?
4. Choose one part of the questionnaire that you would like to focus on, and then use Google Forms to create section or set of sections based on the part you selected.



Interviews

Objectives: By the end of the lesson, students will be able to:

- ✓ Recognize different types of interviews
- ✓ Describe the structure and main components of interviews
- ✓ Analyze interview data
- ✓ Apply interviewing techniques for research purposes
- ✓ Compare and interpret various interview techniques in research settings

16.1. Interviews

The interview is a *flexible* and *qualitative* data collection method that can be viewed as a structured form of conversation with a clear purpose. This method utilizes various sensory channels, both verbal and non-verbal, including spoken and heard communication. Its primary purpose is to examine a topic from the interviewee's perspective, with the interviewer playing a facilitative role rather than dominating the conversation. To achieve this, the interviewer poses thought-provoking questions to stimulate reflection and fosters deeper discussion by offering supportive feedback [\[9, 19, 43\]](#).

16.2. The Purposes of Interviews

The purposes of conducting interviews are diverse and serve various functions within different contexts [\[43\]](#). These include:

- ✚ Evaluating or assessing an individual in a particular domain
- ✚ Selecting or promoting an employee
- ✚ Facilitating therapeutic changes, as seen in psychiatric interviews
- ✚ Testing or developing hypotheses
- ✚ Gathering data for surveys or experimental studies
- ✚ Sampling respondents' opinions, as in doorstep interviews

In research, the interview can serve several roles [43]. First, it may be employed as the primary method for collecting information pertinent to the research objectives. Second, it can be employed to test existing hypotheses, generate new ones, or serve as an explanatory tool to assist in recognizing variables and relationships within the research. Finally, interviews are often used in combination with other research tools so as to understand the subject of interest.

16.3. Types of Interviews

The selection of interview type depends on the specific research objectives. Common types of interviews [9, 19, 43] are:

- **Structured interviews** involve asking a set of *predetermined questions*; and the responses are recorded on a *standardized schedule*. The content and procedures are organized in advance, whereby the same set of questions is asked to all the participants to allow cross-case comparisons.
- **Semi structured interviews**, or **focused interviews**, allow the interviewer to prepare a set of questions in advance (or interview guide), yet he is free to modify them according to what appears most suitable in the conversation, meaning that the order of question is not fixed. Interviewer can reword questions, provide justifications, and omit questions deemed inappropriate for a particular interviewee, or even include additional ones. Consequently, each interviewee may be asked different questions.
- **Unstructured interviews**, **informal conversational interviews**, or **open-ended interviews**, involve no pre-planned or a specific order of question topics or wording, and little or no direction from the interviewer. The interviewer proposes a topic and facilitates the conversation within this area. The objective is to gain insight into a person's perception in a particular situation.

16.4. Content of Interviews

a. Items or Questions

- **Closed fixed or multiple-choice questions** in which respondents have to choose from two or more fixed alternatives the answer that best describes them. The most frequently used is the dichotomous item which provides two alternatives only: 'yes-no' or 'agree-disagree' [43].

Example:

Do you think it is important to begin learning foreign languages at the age of 7?

Yes

No

Don't know

While closed or multiple-choice questions are easy to code and help researchers achieve uniformity in measurement, which can enhance reliability by ensuring all interview responses fit within predefined categories, they remain superficial. Respondents may feel compelled to select an option that does not truly reflect their views [43].

- *Open-ended questions* [43] place no restrictions on the content or form of responses, except regarding the subject area. Respondents can answer the questions in their own way and in their own words.

Example:

What kind of feedback do you provide to students when they successfully complete writing assignments in the classroom?

Open-ended questions offer several benefits. They provide flexibility, allowing the interviewer to probe deeper if desired or clarify any confusion, assessing the respondent's knowledge, fostering cooperation and build rapport, allowing for a more accurate evaluation of the respondent's true beliefs. These questions can also lead to unexpected or unforeseen answers, which may reveal previously unconsidered relationships or hypotheses [43].

- *Scale items* is a set of verbal item where the interviewee answers by indicating degrees of agreement or disagreement, perceptions or experience related to the item on a specific scale. They can be attitude scales, rank-order scales, rating scales, and so on [43].

Example:

The university library should remain open until late hours.

Strongly agree

Agree

Undecided

Disagree

Strongly disagree

b. Probes are follow-up questions designed to prompt additional explanation and clarification, helping to enhance the depth, detail, and honesty of responses—key aspects of effective interviewing. Probes may include restating the question, rephrasing the answer with a questioning tone, demonstrating interest and understanding, requesting clarification, or asking for further examples or elaboration [43].

Example:

Initial question: *How do you evaluate the level of biology students in English?*

Possible probes for further elaboration:

-Could you explain what specific criteria or skills you would focus on when evaluating their level? (This asks the interviewees to clarify which areas of language proficiency or biology-specific English they would assess, prompting them to think about the details of their evaluation method.)

-Can you give an example of how you would assess their ability to understand complex biological texts in English? (This encourages interviewees to provide concrete examples of how they would evaluate students' reading comprehension or their ability to understand scientific language.)

-How would you adapt your evaluation methods to accommodate students with different English proficiency levels? (This asks the interviewees to apply their evaluation strategy to a different level, encouraging them to think critically about challenges students might face).

-Why do you think it is important to assess both their understanding of biology and their English proficiency? How does this help in their learning process? (This asks interviews to reflect on the importance of combining language proficiency with subject-specific knowledge.)

c. Prompts indicate to the interviewee the range of responses expected by the interviewee. The interviewer may read out the list of possibilities [43].

Example: *Did you read any of the following novels? If so, which one did you read, and what did you think of it?*

Charlotte's Web *by E.B. White*

The Giver *by Lois Lowry*

Harry Potter and the Sorcerer's Stone *by J.K. Rowling*

d. The Sequence of Questions

The interview can be organized into several stages: *an introduction* (explaining the purpose, gaining consent, and assuring confidentiality), *a warm-up phase* with easing questions, the main body covering key topics, *a brief cool off period* with straightforward questions, and *a closure* where thanks and goodbyes are exchanged.

[\[9\]](#)

16.5. What to do with the Interview Data?

The way the findings are reported will largely depend on the type of interview conducted. The purpose of a quantitative approach in an interview is to measure, compare, and correlate responses, as well as to describe facts objectively. On the other hand, the qualitative approach aims to capture the uniqueness of individual responses, valuing quality, and seeking explanations for subjective experiences. For instance, a standardized, structured interview is likely to produce quantitative data (numbers), which can be concisely summarized in tables and graphs. In contrast, a qualitative, open-ended interview (words) will generate detailed, narrative accounts, requiring more extensive space to present the results [\[43\]](#).

After collecting the data [\[43\]](#), you need to:

Generate Natural Units of Meaning: Identify and extract meaning from the interview data, such as key phrases, ideas, or themes that reflect the participants' perspectives and experiences.

Classify, Categorize, and Order: Group these units of meaning into categories or themes, allowing for a structured organization of the data. This step helps in understanding patterns and relationships within the information.

Structure Narratives: Organize and present the interview content in a coherent narrative form. This involves weaving the categorized data into a clear and engaging story that captures the essence of the interviewee's responses.

Interpret the Interview Data: Analyze the data to derive insights and draw conclusions. This involves looking for deeper meanings, making connections between themes, and offering interpretations that provide a broader understanding of the topic.

16.6. Questions to Avoid in Interviews

The questions [\[19, p.188\]](#) you should avoid in interviews are:

- ≠ Complex and long questions e.g., “*What do you think of the textbook and if you don't like it how would you improve it?*”
- ≠ Double-barrelled or multiple-barrelled questions e.g., “*How confident are you in your ability to write clearly and organize your ideas effectively?*”
- ≠ Questions involving jargon
- ≠ Leading questions e.g., “*What is stressful about speaking English?* Instead, *how do you feel when speaking English?*”
- ≠ Biased questions
- ≠ Minimize the use of closed-ended questions Instead of asking “*do you like the textbook?*” You might ask “*What do you think of the textbook?*”



Given the important role the interviewer plays in the interview, he should carefully select the questions to ask interviewees. Further, the interviewer is responsible for guiding the conversation process, such as maintaining engagement, encouraging interviewees to share their thoughts, feelings, and experiences, and addressing potential power imbalances that might arise during the interview. For instance, the interviewer typically controls the structure of the interview, including the topic, the direction of the discussion, the introduction, and the overall flow of the conversation. Furthermore, researchers using interviews must be careful of several potential challenges. Interviews are time-consuming and resource-intensive, which can make them costly in terms of both time and effort. They are also susceptible to interviewer bias, and may pose logistical inconveniences for respondents. Interviewee fatigue can further impede the flow of the interview, and issues of maintaining anonymity may arise, especially in sensitive contexts [\[43\]](#).

The following example shows how interviews can be presented in a thesis, covering purpose, participants, procedure, ethical considerations, and reflections, while in a proposal, these sections are usually summarized more briefly.

Procedure	“Despite the flexibility feature of the semi-structured interview, an interview guide allowed me to prepare specific issues to be discussed during the interview (Roulston & Choi, 2018). Twenty semi-structured interviews were conducted with ToDS (Appendix 2). The interview schedules comprised 34 questions divided into four themes: 1. Motivation to do this kind of work and educational preparation stages 2. On-the-job experience, such as ways of evaluating their work 3. Administrative and managerial support 4. Relationships with parents and students”
Participants	“ToDS were interviewed based on their experience, starting from the least experienced. Nisbet and Watt (1984) suggested that it was better to start interviewing new teachers when conducting interviews to invest better in later experiences interviewing experienced teachers. I followed Nisbet and Watt’s (1984) recommendation by interviewing more-experienced ToDS after the less-experienced teachers. I found that beneficial as they provided richer information on the topics of interest.”
Setting	“These interviews occurred in their free time in an office chosen for this purpose to ensure they were not distracted by their DS or any work pressures.”
Consent	“At the start of each interview, I explained to each that their identity would be anonymous and that the information would only be used for the research. They were provided the participant information sheet and asked for a consent form (Appendix 2, first page).”
During the Interview	“During the interview, I paid attention to visual cues to ensure the interviewees felt comfortable and provided clarification questions if I thought interviewees had not understood the questions correctly to have the most accurate answers possible. During the interview, some of the ToDS from HT and ES seemed to be defensive rather than explain their situation. Thus, I reminded them that I was not there

	to judge them. My intention was only to understand the factors affecting ToDS' experiences."
Adaptations for Next Interviews	"Based on the ToDS' responses in these interviews, an interview schedule was developed for three HTs and two ESs. The HTs and ESs were asked ten open questions (Appendix 3) about their role related to ToDS, staff evaluation, the challenges that ToDS mentioned in their interviews, and potential solutions. These HTs were from three different schools and were pseudonym: HTS, HTT and HTA. HTS was at the SSD, HTT was in an inclusion program at the MSHS, and HTA was in an inclusion program at the MSPS."
Recording	"All the interviews were audio-recorded in Arabic and transcribed verbatim. It was then translated into English for analysis."
Source: Alhassan, S. I. (2022). <i>A qualitative inquiry into the experience of teachers of the deaf in Saudi Arabia</i> [PhD thesis, University of Warwick]. http://wrap.warwick.ac.uk/168879	



16.7. Let's Practice

Learning Objective: Assess one's ability to conduct an interview

Group Work

Exercise 1¹⁶:

"Write five questions on a topic of interest and pilot the interview guide by conducting a semi-structured interview with your group members. After the interview, evaluate how it went. Which questions worked well and which did not? Were you satisfied with the results? If any problems arose, what was the cause? How would you change the interview guide or your interviewing style in response to these problems?"

Exercise 2¹⁷:

¹⁶ **Source:** Adapted from [19]

¹⁷ **Source:** Adapted from:

<https://www.uio.no/studier/emner/sv/iss/HGO4010/previous-exams/hgo4010-examiner-s-guide-2019.pdf>

Introduction

“Together with a fellow student, you have embarked on a research project for your Master thesis, where your main research question is as follows:

“How are international exchange students integrated into student life at the University of Oslo, and what are the main obstacles to this integration?”

Two research components make up your research design. The first is a document study of the main policy documents governing the various exchange programmes and policies at the University of Oslo. This study is to be conducted by your collaborator, and will be supported by a handful of interviews with UiO and SiO officials in charge of international student exchange. The objective of this component is to establish how the institutions approached integration through formal mechanisms.”

“The second leg of the study is your responsibility, and consists of an interview study with 12 exchange students, with whom you have already established an initial contact.” “You intend to conduct semi-structured interviews with these students, where you ask them about their social experiences during the exchange semester. Interview transcriptions will then be subject to a thematic analysis informed by the research question. The objective of this second component is to find out how exchange student integration is experienced and practised.”

The case problem

“The problem arises during a meeting with your fellow student in early May. While your collaborator is already well underway with perusing documents and interviewing officials after receiving approval from the Data Protection Services (NSD), you realise that you have forgotten to notify NSD about your interview study. By the time you can expect approval from NSD, most exchange students will have returned to their home countries. By postponing the interviews until next semester, you will delay the study progress of yourself and your fellow student. You discuss various solutions to your problem during the meeting. These include using different methods, alternative data collection techniques, targeting different subjects, and conducting data collection in ways that allows your study not to be subject to notification.”

Your assignment

“Write a 3000-word text where you reflect on the choices you made following this meeting concerning data collection and analysis. Write as if you evaluate your research process in hindsight. Use the same writing format and retrospective style that is common in a method chapter of a master thesis.”



Tests

Objectives: *At the end of this lesson, students will be able to:*

- ✓ Differentiate between types of tests
- ✓ Explain the concept of validity
- ✓ Assess the reliability of tests
- ✓ Explain the role of fairness in testing
- ✓ Apply triangulation in research
- ✓ Design effective tests
- ✓ Evaluate the application of testing concepts in real-world scenarios.

17.1. Types of Tests in Educational Research

Tests are viewed as a powerful data collection method in educational practice and research, they help gather *numerical* rather than verbal data, which influence teaching, learning, assessment and decision making [\[43\]](#). In **Figure 12**, we present the most common types of tests in educational research.

Figure 12

Types of Tests in Educational Research

Placement Tests

- Administered before the start of a programme
- Determine initial knowledge and skills
- Identify appropriate entry points
- Assign students to groups/levels
- Can be norm-referenced or criterion-referenced
- **Example:** *Language proficiency tests are used to place students at the correct level.*

Diagnostic Tests

- Provide in-depth analysis of learning difficulties
- Determine causes of specific problems
- Use multiple items to pinpoint areas needing attention
- Focus on why and where learning gaps exist
- Often criterion-referenced
- **Example:** *A detailed math test to understand why a student struggles with fractions*

Formative Tests

- Occur during the course of a programme
- Monitor progress and support learning
- Help diagnose strengths and weaknesses
- Typically criterion-referenced
- **Example:** *Weekly quizzes used to track students' progress*

Summative Tests

- Administered at the end of a programme
- Evaluate overall achievement and mastery
- Assess learning outcomes against standards
- Can be norm-referenced or criterion-referenced
- **Example:** *A final exam administered at the end of the school year*

Source: Adapted from [43]

Norm-referenced tests measure a student's performance against that of others, whereas **criterion-referenced** tests assess performance against a set of predefined standards or objectives [44].

17.2. Achievement Tests vs. Aptitude Tests

It is appropriate to introduce a distinction between achievement tests and aptitude tests [43], which can be summarized as follows (**Table7**):

Table 7*Achievement Tests vs. Aptitude Tests*

Achievement Tests	Aptitude Tests
-Summative in nature	-Estimate an individual's potential for learning or future achievement
-Measure learners' attained knowledge or skills within a defined content area.	-Assess more generalized abilities, such as cognitive skills or capacities associated with intelligence, which are transferable across multiple subject areas
-Assess what students have learned at a particular point in time	-General predictors of future academic performance across different learning contexts
-Closely in line with curriculum objectives	-Not closely tied to specific curriculum content
-Serve as predictors of future performance within the same content domain	-Aim to predict future success, but are not limited to one subject or domain
-Limited capacity to predict performance beyond that domain	-Can predict performance across various subjects and academic areas
-Focus on subject-specific knowledge	-Focus on broader cognitive abilities

For further examples of types of tests and assessments, watch the following videos:

1. <https://youtu.be/9qMNOCRC7HE?si=mTjBiAbUmlKlZ-lY>

2. <https://youtu.be/59fGQbfJdHM?si=L69PTWlrrhTMouly>

3. <https://youtu.be/dirdDLRFhZs?si=jKJiNj-QBqSnmv4x>

17.3. Needs Analysis

Needs analysis is a *form of assessment* that ensures a course and its tests are relevant and appropriate for learners. It focuses on identifying ***what students already know, what they need to know, and what they wish to learn.*** In this regard, needs can be classified into *necessities* (what learners ought to know to perform effectively), *lacks* (the gap between current knowledge and required knowledge), and *wants* (learners' personal preferences and goals) [48]. Data about learners' needs can be gathered through questionnaires, interviews, observation, document analysis, and tests. In order to ensure that both teaching and assessment effectively meet learners' objectives, needs analysis should be reliable, valid, and practical because neglecting learners' needs may result in a course that fails to meet its users' expectations. Consequently, reliable needs analysis entails employing well-thought-out,

standardized instruments that are applied systematically. Before conducting a needs analysis, it is necessary to carry out a ranking activity to determine which needs should be given priority in your investigation [48].



*Needs Analysis for a Grammar Course*¹⁸

-“You have been asked to design a grammar course for secondary school EFL learners. You have decided to carry out a needs analysis.

(a) Decide what kind of information you are looking for and classify it into necessities, lacks or wants.

(b) Decide where you will look to find the information.

(c) List three ways that you will use to gather the information for the grammar course

(d) For each of these three ways prepare some sample items or describe the procedure you will use.

-You have now done your needs analysis and have decided how to gather the information you need.

1. List your findings here.

2. List three important principles about how you think grammar should be learned.

3. Write the general goal for your course.

4. Choose three types of activities that you will use in your course.

5. Take one of these activities and show how it will fit into your course.

6. Look critically at your needs analysis to make sure that it is not limited by your own perspectives or by an institutional viewpoint.”

17.4. Validity in Measurement

Validity describes the degree to which a *measure accurately reflects the concept it is designed to assess*. For example, an IQ test would be considered a more valid measure of intelligence than simply counting the hours someone spends in the library. It is necessary to consider that the objectives of the test are fairly addressed in

¹⁸ Source: Adapted from [48]

the test items. This may be achieved through a matrix outlining content areas, programme objectives, and the weighting of items on the test [44].

Certainly, it is impossible to prove the absolute validity of a measure, yet we can agree on its relative validity based on several types of validity, including **face validity**, **criterion-related validity**, **construct validity**, **content validity**, **internal validation**, and **external validation** [44].

17.5. Types of Validity

17.5.1. Face Validity

Face validity reflects how well a test seems to measure its intended construct, based on superficial judgment or at face value. “Face validity is where, superficially, the test appears – at face value – to test what it is designed to test” [43, p.163]. However, it is important to note that face validity does not ensure that a test is genuinely measuring the intended construct; it only reflects how relevant the test seems based on its appearance. For example, a reading comprehension test with questions based on a text might have high face validity because it appears to test reading comprehension, even if it may not fully encompass all aspects of the skill [43, 44].

17.5.2 Criterion-Related Validity

This type of validity measures how well a tool correlates with an external criterion. For instance, the validity of College Board tests is demonstrated by their ability to predict students' future college success. This is also known as **predictive validity** because it evaluates how well a test predicts outcomes based on external criteria [44].

17.5.3 Construct Validity

Construct validity refers to the extent to which a measure corresponds with other variables as expected within a theoretical framework. In essence, it evaluates whether the test truly measures the underlying concept it intends to, based on how it relates to other variables within a broader system of relationships [44].

17.5.4 Content Validity

This focuses on whether a measure adequately captures all aspects of a given concept [44]. For example, a test designed to measure knowledge of sociolinguistics

should encompass all relevant aspects of sociolinguistics, rather than focusing on only a small portion of the material.

17.6 Reliability

Unlike validity, reliability refers to *consistency in measurement*. The reliability of measures can be assessed or enhanced using the test-retest method, the split-half method, established measures, and by reviewing work conducted by other researchers. The reliability level concerns the degree of confidence that can be placed in the results and the data, which is about statistical calculation and subsequent test redesign [\[43\]](#), [\[44\]](#).

In quantitative research, reliability denotes the consistency and dependability of results across time, instruments, and respondent groups. It deals with both precision and accuracy, with some features (e.g., height) easily measured precisely, though others (e.g., musical ability) are more subjective. In qualitative research, reliability pertains to the connection between recorded data and actual occurrences in the natural setting being studied. For research to be reliable, repeating the study in a similar context with comparable participants should yield similar results. For instance, administering the same test to two closely matched groups should produce consistent outcomes if the research is reliable. In qualitative methodologies, reliability encompasses fidelity to real life, context- and situation-specificity, authenticity, comprehensiveness, detail, honesty, depth of response and meaningfulness to the participants. It is achieved by ensuring the findings are true to real-life experiences and accurately reflect participants' perspectives [\[43\]](#). Thereupon [\[43\]](#):

- ✚ Ensure the data reflect actual, real-world situations.
- ✚ Focus on the particular context and situation to enhance authenticity.
- ✚ Capture honest and in-depth responses that truly represent participants' views.
- ✚ Gather detailed and complete data to cover all relevant aspects of the phenomenon.
- ✚ Warrant that the findings are meaningful and accurately reflect the participants' experiences.

17.7. Types of Reliability

17.7.1 Reliability as Equivalence

- **Equivalent Forms Reliability:** This involves using different versions of a test or instrument to measure the same variables. For example, pre-test and post-test assessments are alternate forms of the same instrument. If they yield similar results, the instrument demonstrates reliability. This can be assessed using statistical methods like t-tests, correlation coefficients, and comparing means and standard deviations across groups [43].
- **Inter-rater Reliability:** When multiple researchers are involved, agreement among them is crucial. This is often required in structured observations or semi-structured interviews, where data categorization must be consistent. Inter-rater reliability can be calculated as the percentage of actual agreements over the possible agreements [43].

17.7.2 Reliability as Internal Consistency

- Unlike equivalent forms, internal consistency is measured by running a test only once and checking the consistency within it. The *split-half method* divides the test into two parts and compares the results from both halves. A high correlation between the two halves indicates strong internal consistency [43].
- The **Cronbach alpha** is another measure used to assess internal consistency, particularly for multi-item scales. It calculates the average correlation between items, providing a reliability coefficient that indicates how well the items of a test are correlated with each other [43].

17.8. Fairness

Fairness in testing is a crucial element of test validity and must be integrated into all stages of test development and administration. Ensuring fairness involves addressing accessibility issues, such as those faced by individuals with limited English proficiency or disabilities, to guarantee that tests accurately assess the intended constructs. The concept of *universal design* is indispensable for creating assessments that maximize accessibility for all test-takers, irrespective of characteristics such as race, ethnicity, gender, or disability. Accordingly, fairness means that tests should measure the same constructs for everyone, and scores must

retain the same meaning for all individuals. This minimizes any advantages or disadvantages arising from irrelevant factors [45].

A key concern in this context is **bias** because it remains a central threat to fairness. For instance, potential threats to test validity differ between examinees with limited English proficiency and those with disabilities. Similarly, traditional print and certain electronic formats may disadvantage individuals with visual impairments or older adults who require magnification. Such disadvantages are considered unfair when visual acuity is not relevant to the construct being measured [45].

❖ **Triangulation**

Triangulation, which plays a key role in ensuring both reliability and validity in research, *involves employing two or more methods of data collection to a specific aspect of human behaviour*. This multi-method approach contrasts with single-method research, which is often more vulnerable to biases and inaccuracies. Researchers employ different methods to examine the complexity of human behaviour by means of combining both **quantitative** and **qualitative** data for a thorough understanding. By relying on more than one data collection tool, triangulation helps to *avoid bias* or distortion that may arise from using a single method. It ensures that the data gathered is not simply an artefact of a particular approach but instead provides a more accurate representation of the research subject [43]. Consequently, researchers can minimize threats to validity [43] by considering the following:

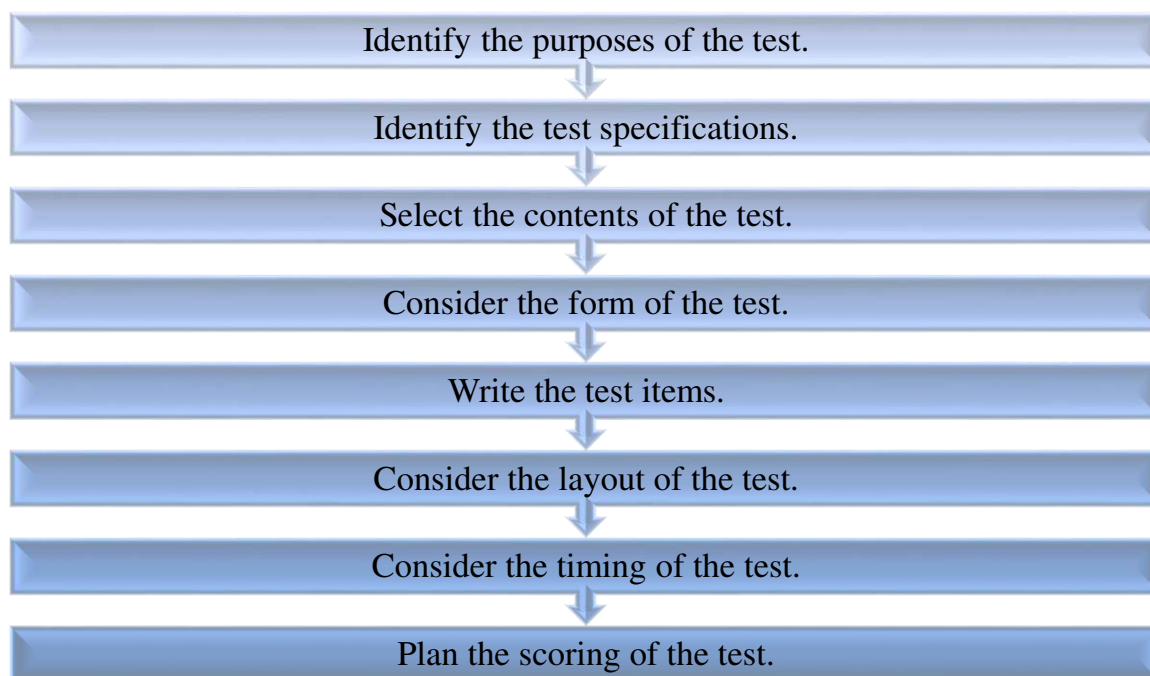
1. Choosing a timeline that allows for sufficient data collection and analysis.
2. Ensuring there are enough resources (time, personnel, finances) to conduct the research effectively.
3. Selecting a methodology that is consistent with your research questions and goals.
4. Using instruments that are well suited for gathering the type of data you need.
5. Making sure your sample is representative and of a reasonable size (neither too small nor too large).
6. Maintaining consistency in data collection by demonstrating stability (e.g., using split-half analysis of test materials).
7. Selecting research areas that directly address the research questions.

8. Be mindful of potential bias in choosing your research team, considering whether they have insider or outsider perspectives that may influence the research.
9. Designing and using instruments that adhere to the research objectives and reduce potential biases.

For instance, a researcher interested in evaluating students' vocabulary acquisition may employ more than one assessment tool. An achievement test, such as a TOEFL-style vocabulary test, can be used to measure students' vocabulary knowledge quantitatively. In addition, an attitudinal questionnaire may be administered to explore learners' perceptions and attitudes toward vocabulary learning. Classroom observations may additionally be used to examine how students apply vocabulary in authentic learning contexts. Using these complementary instruments allows the researcher to cross-check results, reduce bias, and ensure that vocabulary acquisition is measured accurately, consistently, and fairly.

17.9. Planning a Test

When planning for a test [\[43\]](#), you should:



17.10. Steps for Designing a Good Test

In order to design a good test [\[43\]](#), you need to:

1. Decide which program objectives and learning outcomes the test will measure (e.g., skills, knowledge, or achievements you want students to demonstrate).

Example: *The test might assess critical thinking, problem-solving, or writing skills.*

2. Break down the learning outcomes into smaller parts (e.g., specific skills or knowledge).

Example: *If the outcome is understanding quasi experiment, it could be broken down into hypothesis formulation, data analysis, and experiment design.*

3. Select components for the test and ensure that they reflect the full scope of the subject.

Example: *If you are testing writing skills, include questions on grammar, structure, and content to cover the breadth of writing ability.*

4. Define specific observable behaviours through making learning outcomes practical and directly assessed (e.g., students writing an essay, solving a math problem).

Example: *Identify main ideas in a reading passage becomes underline the main argument in a text.*

5. Identify what data (e.g., responses, scores, and completion times) will show if students have met the criteria. Set performance indicators or success criteria (e.g., "Correct answers on 80% of the test questions"). Define how marks and grades will be awarded, and how much weight each part of the test will carry.

Example: *A 50-question test might give 2 points for each correct answer, with the test covering concept A (40%), concept B (30%), and concept C (30%).*

6. Write clear and concise questions that reflect the components and objectives. Choose different types (multiple-choice, short answer, etc.) to assess a variety of skills.

7. Run a pilot test to check that questions are unambiguous and easily understood, whether some questions are too easy or difficult, and whether they effectively differentiate between high- and low-performing students. For multiple-choice questions, check whether the distractors (wrong answers) are plausible.

Thus, ensure the test accurately measures what it intends to (validity) and yields consistent results (reliability).



17.11. Let's Practice

Learning Objective: Develop assessment skills

Group Work

-Read the following *article*:

Source: Caraig, R. V., & Quimbo, M. A. T. (2022). Assessing reading comprehension difficulties in core science subjects of senior high school students in a private school in Calamba City, Philippines. *International Journal of Curriculum and Instruction*, 14(3), 1983–2010. <https://files.eric.ed.gov/fulltext/EJ1364296.pdf>

-Answer the following questions in a paragraph then filling in the rubric below.

1. What is the type of the test(s) used? Define it?
2. Is the test likely consistent? Why?
3. Does it really measure science reading comprehension? Why?
4. Are there any issues of fairness or bias? Why?

Criterion	Excellent (3)	Satisfactory (2)	Needs Improvement (1)
Test type identified clearly			
Evidence of reliability discussed			
Evidence of validity discussed			
Fairness of the test evaluated			

Unit 4:
Proposal Completion and Academic Writing



Reviewing and Editing the Abstract

Objectives: *At the end of this lesson, you are expected to be capable of:*

- ✓ Explaining the rationale for writing an abstract
- ✓ Knowing the structure of an abstract
- ✓ Identifying the components of a good abstract
- ✓ Writing a good abstract for your research work.

18.1. What is an Abstract?

In a research proposal, the abstract is optional, whereas in a dissertation or thesis it is typically written last, after the completion of the full study. It is a **concise** and **comprehensive summary** of the dissertation's content. The primary aim of the abstract is to introduce readers to a clear overview of the research study, allowing them to quickly assess its scope and relevance. It helps readers determine whether the research study matches their interests and whether they should pursue it further. Moreover, the abstract plays an essential role in academic indexing and search databases, because it makes the work accessible to a broader audience. A well-structured abstract is often the most important paragraph in a dissertation, thesis or research paper, as many readers decide whether to engage with the entire work based on the abstract alone. Therefore, the abstract should be rich in key information and briefly summarizes the main points and conclusions of the dissertation [\[10a, 10b\]](#).

18.2. Characteristics of a Good Abstract

A good abstract [\[10a, 10b\]](#) should exhibit the following qualities:

The abstract should demonstrate both the purpose and content of the dissertation or thesis. It should only include information that is presented within the dissertation or thesis, omitting any unrelated details. If the study replicates prior research, relevant citations should be provided using an author-date format.

The abstract should focus on reporting the content rather than evaluating or offering opinions. Any subjective comments or assessments about the content of the dissertation are unnecessary.

The abstract must be clearly written, employing deliberate language. Use active voice and action verbs instead of noun phrases or passive constructions (e.g., “investigated” instead of “an investigation of”; “we present results” instead of “results are presented”).

The abstract should be brief, with each sentence offering maximum information. Begin with the key points, ensuring the opening sentence captures the essential elements. Avoid redundancy, such as repeating the title, and focus on the four or five most critical concepts, findings, or implications. Additionally, use specific keywords that are relevant to your target audience, aiding in search discoverability.

18.2.1. Format

Abstracts are typically limited to a maximum of 250 words. The abstract should appear on its own page, immediately following the title page (i.e., page 2). The section label "Abstract" should be written in bold, title case, and centred at the top of the page. The abstract itself should be placed directly below this label. Likewise, abstracts can be presented in either paragraph or structured format. In paragraph format, the abstract should be written as a single paragraph with no indentation at the beginning of the first line. In structured format, the abstract is also presented as a single paragraph without indentation, but with section labels (e.g., Objective, Method, Results, Conclusions) to demarcate the various components [\[10b\]](#).

It is evident that an abstract for a case study [\[10a\]](#) should describe:

- ✚ The subject and relevant characteristics of the individual, group, community, or organization being presented.
- ✚ The nature of the problem or the solution illustrated by the case example.
- ✚ The questions raised for further research or theoretical exploration.

18.3. Keywords

Keywords are words, phrases, or acronyms that summarize the most significant aspects of your dissertation or thesis. They serve as an indexing tool in databases and enhance the visibility of your work in search results [\[10a\]](#) , [\[10b\]](#).

18.3.1. Format

The label “*Keywords:*” (in italics) is placed one line below the abstract, indented 0.5 inches, similar to a regular paragraph. The keywords should be listed in lowercase (except for proper nouns, which should be capitalized), separated by commas. The order of keywords is flexible, but they should not be followed by a period or other punctuation marks. If the keywords span more than one line, the second line should not be indented [\[10a\]](#) , [\[10b\]](#). **Table 8** presents the framework of a good abstract.

Table 8

Framework of a Good Abstract

Abstract
Objectives State the problem under investigation, including main hypotheses. Participants Describe your participants, specifying their pertinent characteristics for the study. Participants are described in the body of the paper. Study Method Describe the study method, including research design (e.g., experiment, observational study), sample size, materials used (e.g., instruments, apparatus), outcome measures data-gathering procedures, including a brief description of the source of any secondary data. If the study is a secondary data analysis, so indicate. Findings Report findings, including effect sizes and confidence intervals or statistical significance levels. Conclusions State conclusions, beyond just results, and report the implications or applications. <i>keywords:</i>

Source: Adapted from [\[10a\]](#) , [\[10b\]](#)

Abstracts can vary in length depending on the nature of the research. **Table 9** provides an example of a well-constructed abstract that can guide you when writing the abstract for your thesis or dissertation.

Table 9

Example of an Abstract in APA Style

Running head: EFFECTS OF AGE ON DETECTION OF EMOTION
Abstract
Age differences were examined in affective processing, in the context of a visual search task. Young and older adults were faster to detect high arousal images compared with low arousal and neutral items. Younger adults were faster to detect positive high arousal targets compared with other categories. In contrast, older adults exhibited an overall detection advantage for emotional images compared with neutral images. Together, these findings suggest that older adults do not display valence -based effects on affective processing at relatively automatic stages. <i>Keywords:</i> aging, attention, information processing, emotion, visual search

Source: Adopted from [\[10a, p.41\]](#)

18.4. Recommended Verb Tenses and Their Usage in APA Style Writing

The recommended verb tenses in APA style and their appropriate usage in academic writing are summarized in **Table 10**, which may serve as a guide for students when writing their thesis or dissertation.

Table10*Recommended Verb Tenses in APA Style*

Section	Recommended Verb Tenses	Example
Method: Description of procedure	Past	Participants completed a survey
	Present perfect	Others have used similar Approaches
Reporting of results	Past	Results were non-significant Scores increased Hypotheses were supported
Discussion of implications of results	Present	The results indicate
Presentation of conclusions, limitations and directions	Present	We conclude Limitations of the study are

Source: Adapted from [10b, p.196]



18.5. Let's Practice

Learning Objective: Practice evaluating the structure of abstracts

Exercise 1:

Access the APA Sample Papers Page, use the following link:

Source: American Psychological Association. (2026, January). *Sample papers*.

<https://apastyle.apa.org/style-grammar-guidelines/paper-format/sample-papers>

-Download a Template

Choose either **a** or **b**:

a) [Mixed methods professional paper template \(DOCX, 70KB\)](#)

b) [Qualitative professional paper template \(DOCX, 77KB\)](#)

-Open the Template in Word

-Evaluate the abstract structure and compare it with APA guidelines presented in the lesson

Exercise 2:

-Which abstract follows the APA style most closely, and why?

-Identify at least two areas of improvement for each abstract based on APA guidelines

1/The Use of Educational Technology in EFL Teaching and Learning: Case Study of Second Year Students at Tlemcen University

Abstract

“Due to the development of technology, new innovations have been introduced in education. Nowadays, there are several technological devices that can be used to facilitate teaching and serve the learners’ needs. Therefore, it depends on the desire of the teacher about choosing between employing modern techniques in his work or depending on the use of blackboard and chalk. The purpose behind this study is to shed light on the role of using educational technology and its importance in the field of EFL teaching and learning. It attempts to explore the most used technological tools. To construct this work, a case study was conducted at Tlemcen university, specifically, the English department, where the second year EFL students and teachers were selected as the sample population. A number of research instruments were used to collect data. The questionnaire was addressed to the learners and the interview to the teachers. The data collected were analysed qualitatively and quantitatively. The findings of the study revealed that teachers and learners support the use of educational technology. The teachers affirmed that they used it as a helpful tool to assist their teaching without neglecting the use of traditional methods. On the other hand, the learners believed that its use helps them a lot. Moreover, all of them recognized the importance of using educational technology and confirmed that it has a significant role in the EFL teaching and learning process.”

Source: Mebarki, S. & Meiloudi, A. (2015). *The use of educational technology in EFL teaching and learning: Case study of second year students at Tlemcen university* [Master’s thesis, Université Abou Bekr Belkaid Tlemcen].

2/THE USE OF MOTHER TONGUE IN EFL CLASSROOMS

Abstract

“The use of the mother tongue in teaching a foreign language is a controversial topic. While some researchers claim that the mother tongue should not be used in foreign language classrooms, others think that it makes a valuable contribution to the learning process. The purpose of this study was to investigate teachers’ and students’ perceptions on using the mother tongue in EFL classrooms and when to use it in the classroom. The present study was conducted at the end of the fall semester of the 2011-2012 academic year at European University of Lefke. Twenty five English instructors and one hundred and five students participated in the study. The relationship between the perceptions on English language instructors and the students was measured through questionnaires given to teachers and students. The interview was carried out with five preparatory students and five English teachers. The data revealed that the mother tongue was a mediating part of language teaching and learning and there was no significant difference between teachers’ and students’ perceptions on using it in language classrooms. Both teachers and students did not oppose the use of mother tongue in language classrooms. They all thought that the mother tongue should be used in emergency situations. Moreover, they believed that it can be effective in the right situations at the right time.”

Keywords: Use of the mother tongue (Turkish), target language (English), teachers’ and students’ perceptions, EFL classroom

Source : Mahmutoglu, H., & Kıcır, Z. (2013). The use of mother tongue in EFL classrooms. *EUL Journal of Social Sciences (LAÜ Sosyal Bilimler Dergisi)*, 4(1), 54–72. <http://euljss.eul.edu.tr/si44.pdf>



Compiling the Reference List

Objectives: *At the end of this lesson, students will be able to:*

- ✓ Apply APA style for in-text citations and reference lists
- ✓ Distinguish between primary and secondary sources and their appropriate citation methods
- ✓ Compile a complete and properly formatted reference list for their research work.

19.1. Preparing a Reference List in APA Style

It is important to include a reference list that accurately cites all the sources you have used throughout your work. This list should follow the appropriate citation style for your discipline [\[2\]](#), [\[5\]](#). APA style is commonly used in fields such as psychology, nursing, social work, communications, education, business, engineering, and others. APA style is also essential for both student papers and professional publications, including theses and dissertations [\[10\]b](#).

The reference list serves to cite the works that directly support the ideas, claims, and concepts discussed in your work. This is different from a bibliography, which may include works consulted for background information or supplementary reading and often contains descriptive notes [\[10\]b](#). The purpose of references in your research is to credit the contribution of previous scholars, provide reliable sources for others to locate, and document relevant statements in the literature. An accurate, complete, and well-organized reference list is crucial for supporting your own research and for allowing others to verify and build upon it [\[10\]b](#).

19.2. APA Citation System

APA style employs an author-date citation system, where in-text citations point to full reference list entries. Every source cited in the text must appear in the reference list, and each entry in the reference list must correspond to an in-text citation. It is essential that the spelling of author names and publication dates in both the in-text citations and the reference list match exactly [\[10\]b](#). For reference list entries, the date element may include more specific details like the month, season, or day, in addition to the year. However, the in-text citation will only include the year of publication [\[10\]b](#).

19.2.1 Primary Sources vs. Secondary Sources

In academic research, a primary source presents original content; however, a secondary source refers to content reported in another work. It is advisable to use secondary sources carefully, especially when the original work is unavailable, out of print, or written in a language you cannot understand. Still, the best scholarly practice is to locate and cite the primary source directly [\[10\]b](#). If citing a secondary source is necessary, your reference list should include only the secondary source you consulted. In the text, identify the primary source, followed by the phrase “as cited in” the secondary source. If the publication year of the primary source is known, include it in the citation as well [\[10\]b](#).

For example:

- If you read a work by Lyon et al. (2014) in which Rabbitt (1982) is cited, but you are unable to access Rabbitt’s original work, you would cite Rabbitt as the primary source in your in-text citation, followed by Lyon et al. as the secondary source. However, only Lyon et al.’s work would appear in your reference list [\[10\]b](#).

In text-citation:

(Rabbitt, 1982, as cited in Lyon et al., 2014)

19.3. General Guidelines for APA References

The following tables [\[10\]b](#) illustrate the order and format for each reference category along with the way how they should appear in your research.

19.3.1 Journal Articles

Table 11

APA Citation Format for Journal Articles

	Reference List Entry	Parenthetical Citation	Narrative Citation
Journal article with DOI	Alexander, P.A. (2018). Past as prologue: Educational psychology's legacy and progeny. <i>Journal of Educational Psychology</i> , 110 (2), 147-162. https://doi.org/10.1037/edu0000200	(Alexander, 2018)	Alexander (2018)
Journal article with DOI	McCauley, S. M., ¹⁹ Christiansen, M. H. (2019). Language learning as language use: A cross-linguistic model of child language development. <i>Psychological Review</i> , 126(1), 1–51. https://doi.org/10.1037/rev0000126	(McCauley & Christiansen, 2019)	McCauley and Christiansen (2019)
Journal Article without a DOI, with a Non-Database URL	Ahmann, E., Tuttle, L. J., Saviet, M., & Wright, S. D. (2018). A descriptive review of ADHD coaching research: Implications for college students. <i>Journal of Postsecondary Education and Disability</i> , 31(1), 17–39. https://www.ahead.org/professionalresources/publications/jped/archived-jped/jped-volume-31	(Ahmann et al. ²⁰ , 2018)	Ahmann et al. (2018)
Journal, magazine, or newspaper article without a DOI, from most academic research databases or print version	Anderson, M. (2018). Getting consistent with consequences. <i>Educational Leadership</i> , 76(1), 26–33. Goldman, C. (2018, November 28). The complicated calibration of love, especially in adoption. <i>Chicago Tribune</i> .	(Anderson, 2018; Goldman, 2018)	Anderson (2018) and Goldman (2018)
Journal article with a DOI,	De Vries, R., Nieuwenhuijze, M., Buitendijk, S. E., & the members of Midwifery Science Work Group.	(De Vries et al., 2013)	De Vries et al. (2013)

¹⁹ In APA style, the ampersand (&) is used instead of the word "and" in citations, such as between multiple authors in in-text citations and reference list entries.

²⁰ In APA style, "et al." is a Latin abbreviation for "et alii," meaning "and others." It is used when citing a source with multiple authors, typically after the first author's name, to avoid listing all the authors in every citation.

combination of individual and group authors	(2013). What does it take to have a strong and independent profession of midwifery? Lessons from the Netherlands. <i>Midwifery</i> , 29(10),1122–1128. https://doi.org/10.1016/j.midw.2013.07.007		
Journal article, republished in translation	Piaget, J.(1972). Intellectual evolution from adolescence to adulthood (J. Bliss & H. Furth, Trans.). <i>Human Development</i> , 15(1),1–12. https://doi.org/10.1159/000271225 (Original work published 1970)	(Piaget, 1970/1972)	Piaget (1970/1972)

19.3.2 Online Resources and Databases

Table 12

APA Citation Format for Online Resources and Databases

	Reference List Entry	Parenthetical Citation	Narrative Citation
Article from the UpToDate²¹ database	Morey, M. C. (2019). Physical activity and exercise in older adults. <i>UpToDate</i> . Retrieved July 22, 2019, from https://www.uptodate.com/contents/physical-activity-and-exercise-in-older-adults	(Morey, 2019)	Morey (2019)
Newspaper article	Guarino, B. (2017, December 4). How will humanity react to alien life? Psychologists have some predictions. <i>The Washington Post</i> . https://www.washingtonpost.com/news/science/wp/2017/12/04/how-will-humanity-react-to-alien-life-psychologists-have-some-predictions Hess, A. (2019, January 3). Cats who take direction. <i>The New York Times</i> , C1.	(Guarino, 2017; Hess, 2019)	Guarino (2017) and Hess (2019)

²¹Articles in the Up-to-date database are available only in that database and have information that changes overtime.

Blog post	Klymkowsky, M. (2018, September 15). Can we talk scientifically about free will? <i>Sci-Ed</i> . https://blogs.plos.org/scied/2018/09/15/can-we-talkscientifically-about-free-will/	(Klymkowsky, 2018)	Klymkowsky (2018)
Comment on an online periodical article or post	KS in NJ. (2019, January 15). From this article, it sounds like men are figuring something out that women have known forever. I know of many [Comment on the article “How workout buddies can help stave off loneliness”]. <i>The Washington Post</i> . https://wapo.st/2HDTToGJ	(KS in NJ, 2019)	KS in NJ (2019)
Webpage on a news website	Avramova, N. (2019, January 3). The secret to a long, happy, healthy life? Think age-positive. <i>CNN</i> . https://www.cnn.com/2019/01/03/health/respect-toward-elderly-leads-to-long-life-intl/index.html	(Avramova, 2019)	Avramova (2019)

19.3.3 Books and Books Chapters

Table 13

APA Citation Format for Books and Books Chapters

	Reference List Entry	Parenthetical Citation	Narrative Citation
Authored book with a DOI	Brown, L. S. (2018). <i>Feminist therapy</i> (2nd ed.). American Psychological Association. https://doi.org/10.1037/0000092000	(Brown, 2018)	Brown (2018)
Authored book without a DOI, from most academic research databases or print version	Burgess, R. (2019). <i>Rethinking global health: Frameworks of power</i> . Routledge.	(Burgess, 2019)	Burgess (2019)
Authored e-book (e.g., Kindle book) or audio book without a	Cain, S. (2012). <i>Quiet: The power of introverts in a world that can't stop talking</i> (K. Mazur, Narr.) [Audio book]. Random House Audio.	(Cain, 2012; Christian & Griffiths, 2016)	Cain (2012) and Christian and Griffiths (2016)

DOI, with a non-database URL	http://bit.ly/2G0Bpbl Christian, B., & Griffiths, T. (2016). <i>Algorithms to live by: The computer science of human decisions</i> . Henry Holt and Co. http://a.co/7qGBZAk		
Authored book with editor credited on the book cover	Meadows, D. H. (2008). <i>Thinking in systems: A primer</i> (D. Wright, Ed ²²). Chelsea Green Publishing.	(Meadows, 2008)	Meadows (2008)
Edited book with a DOI, with multiple publishers	Schmid, H.-J. (Ed.). (2017). <i>Entrenchment and the psychology of language learning: How we reorganize and adapt linguistic knowledge</i> . American Psychological Association; De Gruyter Mouton. https://doi.org/10.1037/15969-000	(Schmid, 2017)	Schmid (2017)
Edited book without a DOI, from most academic research databases or print version	Hacker Hughes, J. (Ed.). (2017). <i>Military veteran psychological health and social care: Contemporary approaches</i> . Routledge.	(Hacker Hughes, 2017)	Hacker Hughes (2017)
Edited e-book (e.g., Kindle book) or audio book without a DOI, with a non-database URL	Pridham, K. F., Limbo, R., & Schroeder, M. (Eds.). (2018). <i>Guided participation in pediatric nursing practice: Relationship-based teaching and learning with parents, children, and adolescents</i> . Springer Publishing Company. http://a.co/0IAiVgt	(Pridham et al., 2018)	Pridham et al. (2018)

²² In APA, "Ed." is the abbreviation for Editor.

Book republished in translation	Piaget, J., & Inhelder, B. (1969). <i>The psychology of the child</i> (H. Weaver, Trans.; 2nd ed.). Basic Books. (Original work published 1966)	(Piaget & Inhelder, 1966/1969)	Piaget and Inhelder (1966/1969)
Republished book, e-book, or audio book	Freud, S. (2010). <i>The interpretation of dreams: The complete and definitive text</i> (J. Strachey, Ed. & Trans.). Basic Books. (Original work published 1900) Rowling, J. K. (2015). <i>Harry Potter and the sorcerer's stone</i> (J. Dale, Narr.) [Audio book]. Pottermore Publishing. http://bit.ly/2TcHchx (Original work published 1997)	(Freud, 1900/2010; Rowling, 1997/2015)	Freud (1900/2010) and Rowling (1997/2015)
One volume of a multivolume work	Fiske, S. T., Gilbert, D. T., & Lindzey, G. (2010). <i>Handbook of social psychology</i> (5th ed., Vol. 1). John Wiley & Sons. https://doi.org/10.1002/9780470561119 Travis, C. B., & White, J. W. (Eds.). (2018). <i>APA handbook of the psychology of women: Vol. 1. History, theory, and battlegrounds</i> . American Psychological Association. https://doi.org/10.1037/0000059-000	(Fiske et al., 2010; Travis & White, 2018)	Fiske et al. (2010) and Travis and White (2018)
Book in a series	Madigan, S. (2019). <i>Narrative therapy</i> (2nd ed.). American Psychological Association. https://doi.org/10.1037/0000131-000	(Madigan, 2019)	Madigan (2019)
Manual	American Psychiatric Association. (2013). <i>Diagnostic and statistical manual of mental disorders</i> (5th ed.). https://doi.org/10.1176/appi.books.9780890425596	(American Psychiatric Association, 2013)	American Psychiatric Association (2013)

Dictionary, thesaurus, or encyclopaedia	American Psychological Association. (n.d.). <i>APA dictionary of psychology</i> . Retrieved June 14, 2019, from https://dictionary.apa.org/ Merriam-Webster. (n.d.). <i>Merriam-Webster.com dictionary</i> .	(American Psychological Association, n.d.; Merriam-Webster, n.d.; Zalta, 2019	American Psychological Association (n.d.), Merriam-Webster (n.d.), and Zalta (2019)
	Retrieved May 5, 2019, from https://www.merriamwebster.com/ Zalta, E. N. (Ed.). (2019). <i>The Stanford encyclopaedia of philosophy</i> (Summer 2019 ed.). Stanford University. https://plato.stanford.edu/archive/s/sum2019/		
Chapter in an edited book with a DOI	Shakespeare-Finch, J., & Adams, K. (2017). Growth and meaning from negotiating the complex journey of being an emergency medical dispatcher. In E. M. Altmaier (Ed.), <i>Reconstructing meaning after trauma: Theory, research, and practice</i> (pp. 117–131). Academic Press. https://doi.org/10.1016/B978-0-12-803015-8.00008-5 .	(Shakespeare-Finch & Adams, 2017)	Shakespeare-Finch and Adams (2017)
Chapter in an edited book without a DOI, from most academic research databases or print version	Weinstock, R., Leong, G. B., & Silva, J. A. (2003). Defining forensic psychiatry: Roles and responsibilities. In R. Rosner (Ed.), <i>Principles and practice of forensic psychiatry</i> (2nd ed., pp. 7–13). CRC Press.	(Weinstock et al., 2003)	Weinstock et al. (2003)
Chapter in an edited e-book	Tafoya, N., & Del Vecchio, A. (2005). Back to the future: An examination of the Native American Holocaust experience. In M. McGoldrick, J. Giordano, & N. Garcia-Preto (Eds.), <i>Ethnicity and family therapy</i> (3rd	(Tafoya & Del Vecchio, 2005)	Tafoya and Del Vecchio (2005)

	ed., pp. 55–63). Guilford Press. http://a.co/36xRhBT		
Chapter in an edited book, reprinted from a journal article	Sacchett, C., & Humphreys, G. W. (2004). Calling a squirrel a squirrel but a canoe a wigwam: A category-specific deficit for artefactual objects and body parts. In D. A. Balota & E. J. Marsh (Eds.), <i>Cognitive psychology: Key readings in cognition</i> (pp. 100–108). Psychology Press. (Reprinted from “Calling a squirrel a squirrel but a canoe a wigwam: A category-specific deficit for artefactual objects and body parts,” 1992, <i>Cognitive Neuropsychology</i> , 9(1), 73–86, http://doi.org/d4vb59)	(Sacchett & Humphreys, 1992/2004)	Sacchett and Humphreys (1992/2004)
Chapter in a volume of a multivolume work	Goldin-Meadow, S. (2015). Gesture and cognitive development. In L. S. Liben & U. Mueller (Eds.), <i>Handbook of child psychology and developmental science: Vol. 2. Cognitive processes</i> (7th ed., pp. 339–380). John Wiley & Sons. https://doi.org/10.1002/9781118963418.childpsy209	(Goldin-Meadow, 2015)	Goldin-Meadow (2015)

19.3.4 Dissertations, Theses, and Manuscripts

Table 14

APA Citation Format for Dissertations, Theses, and Manuscripts

	Reference List Entry	Parenthetical Citation	Narrative Citation
Unpublished dissertation or thesis	Harris, L. (2014). <i>Instructional leadership perceptions and practices of elementary school leaders</i> [Unpublished doctoral dissertation]. University of Virginia.	(Harris, 2014)	Harris (2014)
Unpublished manuscript	Yoo, J., Miyamoto, Y., Rigotti, A., & Ryff, C. (2016). <i>Linking positive affect to blood lipids: A cultural</i>	(Yoo et al., 2016)	Yoo et al. (2016)

	<i>perspective</i> [Unpublished manuscript]. Department of Psychology, University of Wisconsin–Madison.		
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19.3.5 Conference Materials

Table 15

APA Citation Format for Conference Materials

	Reference List Entry	Parenthetical Citation	Narrative Citation
Symposium contribution	De Boer, D., & LaFavor, T. (2018, April 26–29). The art and significance of successfully identifying resilient individuals: A person-focused approach. In A. M. Schmidt & A. Kryvanos (Chairs), <i>Perspectives on resilience: Conceptualization, measurement, and enhancement</i> [Symposium]. Western Psychological Association 98th Annual Convention, Portland, OR, United States.	(De Boer & LaFavor, 2018)	De Boer and LaFavor (2018)
Poster presentation	Pearson, J. (2018, September 27–30). Fat talk and its effects on state-based body image in women [Poster presentation]. <i>Australian Psychological Society Congress</i> , Sydney, NSW, Australia. http://bit.ly/2XGStHP	(Pearson, 2018)	Pearson (2018)
Conference session	Fistek, A., Jester, E., & Sonnenberg, K. (2017, July 12–15). Everybody’s got a little music in them: Using music therapy to connect, engage, and motivate [Conference session]. <i>Autism Society National Conference</i> , Milwaukee, WI, United States. https://asa.confex.com/asa/2017/webprogramarchives/Session9517.html	(Fistek et al., 2017)	Fistek et al. (2017)
Paper presentation	Maddox, S., Hurling, J., Stewart, E., & Edwards, A. (2016, March 30–April 2). If mama ain’t happy,	(Maddox et al., 2016)	Maddox et al. (2016)

	nobody's happy: The effect of parental depression on mood dysregulation in children [Paper presentation]. <i>South-eastern Psychological Association 62nd Annual Meeting</i> , New Orleans, LA, United States.		
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19.3.6 Other Media

Table 16

APA Citation Format for Other Media

Reference List Entry	Parenthetical Citation	Narrative Citation
Face-book page	Smithsonian's National Zoo and Conservation Biology Institute. (n.d.). <i>Home</i> [Face-book page]. Face-book. Retrieved July 22, 2019, from https://www.facebook.com/nationalzoo	(Smithsonian's National Zoo and Conservation Biology Institute, n.d.)
Webpage on a news website	Avramova, N. (2019, January 3). The secret to a long, happy, healthy life? Think age-positive. <i>CNN</i> . https://www.cnn.com/2019/01/03/health/respect-towardelderly-leads-to-long-life-intl/index.html	(Avramova, 2019)

19.4. Order of Works in the Reference List

It is recommended to adhere to specific guidelines regarding format, alphabetization, and organization when preparing the reference list in APA. Below are the key guidelines to follow [\[10a\]](#) , [\[10b\]](#):

- ✚ The reference list should begin on a new page at the end of your document.
- ✚ Each reference should be formatted with a hanging indentation. The first line of each reference is aligned to the left; and subsequent lines are indented by 0.5 inches.
- ✚ Arrange the entries in alphabetical order by the surname of the first author. If the same author appears multiple times, order them by the publication year (earliest first).
- ✚ If authors have the same surname and given names, use suffixes (e.g., Jr., Sr.) to

distinguish between them. The author with the earliest birth order (e.g., the oldest) should be listed first.

✚ Ignore spaces or punctuation marks (e.g., apostrophes, hyphens) when alphabetizing names.

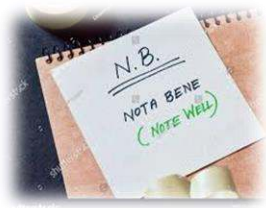
Do not consider anything in parentheses (such as roles like “Eds.”) or square brackets (e.g., usernames).

As shown in **Table 17**, the order of works in the reference list should be presented in the following order **[10]b**:

Table 17

APA Reference List Example: Various Source Types

References
American Psychological Association. (2012a). <i>Guidelines for ethical conduct in the care and use of nonhuman animals in research</i> . https://www.apa.org/science/leadership/care/care-animal-guidelines.pdf
American Psychological Association. (2012c). Guidelines for the evaluation of dementia and age-related cognitive change. <i>American Psychologist</i> , 67 (1), 1–9. https://doi.org/10.1037/a0024643
Beaubien, S., & Eckard, M. (2014). Addressing faculty publishing concerns with open access journal quality indicators. <i>Journal of Librarianship and Scholarly Communication</i> , 2(2), Article eP1133. https://doi.org/10.7710/2162-3309.1133
Bentley, M., Peerenboom, C. A., Hodge, F. W., Passano, E. B., Warren, H. C., & Washburn, M. F. (1929). Instructions in regard to preparation of manuscript. <i>Psychological Bulletin</i> , 26(2), 57–63. https://doi.org/10.1037/h0071487
Creswell, J. W. (2015). <i>A concise introduction to mixed methods research</i> . SAGE Publications.
Creswell, J. W., & Plano Clark, V. L. (2017). <i>Designing and conducting mixed methods research</i> (3rd ed.). SAGE Publications.
Dunn, D. S., & Andrews, E. E. (2015). Person-first and identity-first language: Developing psychologists’ cultural competence using disability language. <i>American Psychologist</i> , 70(3), 255–264. https://doi.org/10.1037/a0038636
Fine, M. (2013). Echoes of Bedford: A 20-year social psychology memoir on participatory action research hatched behind bars. <i>American Psychologist</i> , 68(8), 687– 698. https://doi.org/10.1037/a0034359
Fisher, C. B. (2017). <i>Decoding the ethics code: A practical guide for psychologists</i> (4th ed.). SAGE Publications.



- Personal communications, which are unrecoverable sources, are cited in the text only.
- General mentions of whole websites or periodicals and common software and apps in the text do not require a citation or reference list entry.
- Quotations from your research participants can be presented and discussed in the text.



19.5. Let's Practice

Learning Objective: Demonstrate the ability to use search engines critically to assess the reliability of sources.

Exercise1:

Describe how to use a search engine to find reliable sources for your research topic and explain the steps you would take to ensure the sources are credible.

Exercise2:

Read the article:

Source: Khalifa, M., & Albadawy, M. (2024). Using artificial intelligence in academic writing and research: An essential productivity tool. *Computer Methods and Programs in Biomedicine Update*, 5, 100145. <https://doi.org/10.1016/j.cmpbup.2024.100145>

Evaluate the references:

- Check how the authors cite sources in the text (e.g., author-year format).
- Review the reference list: Are the citations in APA style?
- Note any missing information (e.g., DOIs, volume/issue numbers, etc).

Study Question

How does the credibility of a source impact the quality of your research findings?



Sample Research Proposal Evaluation

Objectives: Students will critically analyze a sample research proposal provided by the teacher, identifying its strengths, weaknesses, and areas for improvement based on the knowledge gained throughout the course.



Learning Objective: Develop skills in critically evaluating a sample research proposal

Group Work

After reviewing the basic principles of designing a research study, along with the key components of a good research proposal, *evaluate the following proposal by identifying its strongest and weakest parts and providing suggestions for improvement.*

You can do this by answering the following questions in complete paragraphs.

- What does the title reveal about the research topic and the type of study conducted?
- Does the proposal clearly explain why this research is important and worth investigating? Why?
- Are the research questions clearly defined? Why?
- How well do the objectives address the problem the proposal is aiming to solve? Are they measurable? Why?
- Is the literature review comprehensive and relevant to the research proposal? Why?
- Is the research method clearly explained? Does it align with the research questions? Why?
- Does the proposal show how the findings will contribute to knowledge? Explain why.

- Are the references properly cited and formatted? Why?
- Is the writing style formal, clear and precise? Why?

Title: Enhancing Teacher Preparedness for Online Instruction: A Case Study of Professional Development Strategies

Link to article:

Ubaid Ullah. (n.d.). *Research proposal: Teaching education (Teacher preparedness for online instruction)*. Scribd. <https://fr.scribd.com/document/878915480/Research-Proposal-Teaching-Education>



Conclusion

The Research Skills course serves as an important refresher for students, allowing them to revisit key elements of scientific research that they have previously studied but may have forgotten. Before beginning their research projects, it is essential for students to go through the proposal stage. During this phase, they are expected to discuss their research ideas with a supervisor, so they can choose a research topic. Therefore, a well-developed proposal addresses the fundamental components of research and provides a strong foundation for the dissertation. It helps students organize their ideas, clarify their research focus, and plan their methodology effectively. In this way, the proposal functions as a roadmap, guiding students throughout the research process and ultimately saving time and effort. Likewise, a well-structured proposal enables students to identify potential weaknesses, research gaps, and methodological challenges at an early stage. This allows them to make necessary adjustments before fully engaging in their dissertation work. Together with the lectures, the accompanying exercises reinforce students' understanding, encourage continuous self-assessment, and promote critical discussion. Thereupon, students recognize areas where they excel and areas that need more work and further develop their academic writing and analytical skills.



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