



People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific
Research

Ammar Telidji University – Laghouat
Faculty of Letters & Foreign Languages

Department of English

AILE Laboratory



The course

AN INTRODUCTION TO RESEARCH
METHODOLOGY
For EFL Second Year License Students

Made by:

Dr. BOUMEDIENE HOUDA -Associate Professor

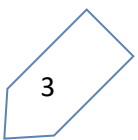
univ.boumediene@gmail.com

h.boumediene@lagh-univ.dz

2023-2024

To all EFL Students,

“Methodology is the bridge between a research question and trustworthy findings; without it, research becomes opinion rather than evidence.”



HARMONISATION OFFRE DE FORMATION LICENCE ACADEMIQUE

Etablissement : Université Amar Télidji Laghouat

Faculté : Faculté des lettres et des langues

Département : Lettres et Langue anglaise

Domaine : lettres et langues étrangères.

Filière : Langue Anglaise.

- **Unité d'enseignement : Méthodologique**
- **Matière : Introduction to Research S3+S4**
- **Crédits: 4 /Coefficient: 2**

Objectifs de l'enseignement : Initier les étudiants à s'approprier de manière individualisée les outils théoriques, méthodologiques et la pratique relative à l'élaboration d'un projet de recherche en histoire. Ce cours doit compléter et enrichir les connaissances méthodologiques déjà acquises eu cours des trois années de licence.

Contenu de la matière :

- Développer une problématique à partir d'un thème proposé par l'enseignant.
- Définir son angle.
- Suivre un raisonnement solide et sans faille.
- Comprendre la différence entre le raisonnement déductif, inductif et intuitif.
- Emettre des hypothèses de recherche.
- Délimiter son corpus.
- Choisir une démarche méthodologique
- Rechercher des documents en fonction du sujet traité.
- Hiérarchiser les informations obtenues.
- Choix des arguments solides et convaincants.
- Défendre une position sur un sujet en fonction de son public.

Mode d'évaluation : *Examen + contrôle continu*

Course Name: INTRODUCTION TO RESEARCH METHODOLOGY

Course Information

Course Number and Unity: U.E.M

Semester and Year: S3/S4 2022-2023

Credits: 02

Coefficient: 02

Course Dates: every Sunday,Monday and Tuesday

Class Meeting Times: Once a week (1h30) , (8-9.30 / 9.40- 11.10)

Pre-requisites:

- SS must have understood the basic study skills.
- SS are able to understand and practice the independent learning process
- SS are able to differentiate language skills and research skills.
- SS have acquired a systematic, conscious consideration of how some primary researches were done

Instructor's Information

Instructor: Dr. Houda BOUMEDIENE Email: h.boumediene@lagh-univ.dz

Office Location: English Department

Instructional Methods

This is a hybrid course that uses in-person meetings, online assignments, quizzes and discussion to foster learning. Learners' participation which is accompanied by feedback is key to its success. Discussing issues, raising and answering questions, and offering critical analysis are all ways in which students need to show engagement.

Instructional Technologies

1. All course materials are uploaded on the university official learning platform, Moodle.
2. A set of documents and PowerPoint presentations have been designed and shared via Moodle and emails using the official (lagh-univ.dz) email address.
3. For online sessions, meetings will be held via Zoom/Meet for the synchronous sessions.

Required Technical Skills

1. Communicate via email including sending attachments
2. Navigate the Internet using a Web browser such as Google Chrome,
3. Be willing to learn how to communicate using a discussion board and upload assignments to a classroom Moodle course
4. Be comfortable uploading and downloading saved files
5. Have easy access to the Internet

Required Materials

In order to participate in the online components of this course, you must have access to a

- Smart cell, laptop or desktop (Mac, Windows PC, or Chromebook) with an up-to-date operating system
- Moodle-supported Internet browser (Firefox or Chrome are recommended)
- high-speed Internet connection
- headset with a microphone for synchronous sessions.

Course Schedule

This course begins in September 2022 and ends in June 2023 .

Direct Contact Hours

In an online or hybrid course, direct contact hours also include online activities that engage students during the weeks when the class does not meet in person. The chart below provides an estimation of the direct contact hours for both in-person and online activities in this course.

Activity	Direct Contact Hours
Lectures	22 hrs / semester
Discussion Forums	
Synchronous Meetings	1 hr / 15 days
Case Study/Field Study/Simulations	
Office Hours	
Quizzes (Final Exams not included)	
Presentations	
Journals/Blogs	
Online Resources/Computer-Based Training	
Group Projects/Peer Review	

Grading Methods and Evaluation

Assessment Methods

Continuous assessment is adopted as a method. It includes in class activities that are performed in pairs and groups, two tests per semester, assignments, research projects to be presented and of course classroom participation.

Feedback

Apart from classroom feedback and the one that follows assignments, teacher takes in consideration the following when providing students with feedback: whether the students

- cooperate consistently with the teacher and other students.

- transition easily between classroom activities without distraction.
- are courteous and shows good manners in the classroom.
- follow classroom rules.
- conduct himself (or herself) with maturity.
- respond appropriately when corrected.

Responsibilities and Expectations (Course Policies)

Attendance and Participation

Be on time for all classes, activities, and actively participate in classroom discussion. Review the assigned readings prior to class activities and take the initiative in seeking information, advice, and support if you have any problems or issues.

Teacher has to notify faculty in case of being late or missing a class as soon as possible and providing reasons and supporting documentation for absences.

Missing Assignments

Students have to complete and submit all assigned work on time. If they need additional time, they should be reminded to ask for it in advance of the due date.

Changes to the Syllabus

This syllabus is a guide and every attempt is made to provide an accurate overview of the course. Pedagogy staff will give notice when changes to the syllabus are made.

Description of the Course

Introduction to research methodology provides students with a comprehensive overview of a broad range of research designs and methodologies, with their ontological and epistemological underpinnings, as well as associated methods and techniques, in order to inform the design of methodologically sound research proposals and to develop their interdisciplinary methodological literacy as future researchers. This course provides Second year students with the foundational knowledge and skills necessary to conduct research in their respective fields of study. The course may also involve hands-on practice in conducting research, analyzing data, and writing research.

General Course Objectives

This course aims to guide second year license students at the Section of English in the university of Laghouat towards achieving competence and proficiency in the theory of and practice to research. This fundamental objective can be realised through helping these students to develop the subject of their research, encourage the formation of higher level of trained intellectual

ability, critical analysis, rigour, and independence of thought, foster individual judgment, and skill in the application of research theory and methods.

Specific Learning Objectives

- To introduce the concept of scientific research and the methods of conducting scientific enquiry
- To enable the students to know about the information needs of management
- To enable the students to know about writing academic research papers and prepare for dissertation writing
- Enable students understand what research is.
- Raise awareness of the crucial value of scientific method.
- Introduce the concept at the heart of every research project –the research problem- and to discuss what a researchable problem is.
- Evaluate literature, form a variety of sources, pertinent to the research objectives.
- Identify and justify the basic components of the research framework, relevant to the tackled research problem.
- Explain and justify how researchers will collect research data.

References:

1. Cohen, L. Lawrence, M., & Morrison, K. (2005). Research Methods in Education (5th edition). Oxford: Oxford University Press.
2. Denscombes, M. (2010). The Good Research Guide: For small-scale social research projects. Maiden-Read: Open University Press.
3. Dornyei, Z. (2007). Research Methods in Applied Linguistics. Oxford: Oxford University Press.
4. Hammoudi ,K.(2019).Introduction to Research Methodology Third year Students. University of Tlemcen
<https://elearn.univ-tlemcen.dz/course/view.php?id=393>
5. Hoadjli, A.C. (2016). Master 1 Research Methodology Syllabus, University of Mohamed Kheider, Biskra.

6. Kothari, C. R. (1980). *Research Methodology: Research and techniques*, New Delhi: New Age International Publishers.
7. Kumar, R. (2011). *Research Methodology: a step-by-step guide for beginners* (3rd edition). London, UK: TJ International Ltd, Padstow, Cornwall.
8. Leedy, P. D. (1980). *Practical Research: Planning and design*. Washington: Mc Millan Publishing Co., Inc.
9. Singh, Y. K. (2006). *Fundamental of Research Methodology and Statistics*. New Delhi. New International (P) Limited, Publishers.
10. Wallinman, N. (2006). *Your Research Project: A step-by-step guide for the first-time researcher*. London: Sage Publications.

Contents

INTRODUCTION: *What makes people undertake research?*

THEMES: *The Main lessons prepared to assist the students in their preparation for the comprehension in the area of research methodology*

Theme 1: *Basic Concepts of Research*

1. Meaning of Research
2. Definitions of Research
3. Objectives of Research
4. Motivation in Research
5. General Characteristics of Research
6. Criteria of Good Research
7. Qualities of a Researcher,
8. Significance of Research

Theme2: *Research Process*

Set the sequence of step-by-step activities.

Theme 3:*The Research Problem*

1. What is a Research Problem
2. Selecting the Problem
3. Sources of the Problem
4. Defining a Problem
5. Statement of a Problem
7. Evaluation of a Problem

Theme4:*The Review of Literature*

1. Meaning of Review of Literature
2. Need of Review of Literature
3. Objectives of Review of Literature
4. Sources of Literature
5. The Functions of Literature
6. How to Conduct the Review of Literature

7. Summary and Synthesis
8. A Literature Review vs. An Annotated Bibliography

Theme5: *The Research Hypotheses*

1. Meaning of Hypothesis
2. Definitions of Hypothesis
3. Functions of Hypothesis
4. Importance of Hypothesis
5. Types of Hypothesis
6. Characteristics of a Good Hypothesis
7. Formulating and Testing the Hypothesis

Theme 6: *Research Design*

Theme7: *The Research Approach*

1. The Philosophical Background
2. The Qualitative Approach
3. The Quantitative Approach
4. The Mixed-Methods Approach
5. Criteria for Selecting a Research Approach

Theme 8: *The Research Method*

1. Descriptive vs. Analytical Methods
2. Applied vs. Fundamental Methods
3. Conceptual vs. Empirical
4. Research Methods vs. Research Methodology
5. Method vs. technique

Theme9: *The Research Strategies*

1. What are the Research Strategies?
2. Case Studies
3. Experiments
4. Ethnography
5. Phenomenology
6. Ground Theory (GT)
7. Action Research
8. Mixed-methods
9. Longitudinal

Theme 10: *Data Collection Tools*

1. Observation
2. Questionnaires
3. Interviews
4. Focus Groups

QUESTIONS, EXAMS AND TESTS

INTRODUCTION

What makes people undertake research?

This is a question of fundamental importance. The possible motives for doing research may be either one or more of the following:

- 1.Desire to get a research degree along with its consequential benefits
- 2.Desire to face the challenge in solving the unsolved problems, i.e., concern over practical problems initiates research;
- 3.Desire to get intellectual joy of doing some creative work
- 4.Desire to be of service to society
- 5.Desire to get respectability

However, this is not an exhaustive list of factors motivating people to undertake research studies. Many more factors such as directives of government, employment conditions, curiosity about new things, desire to understand causal relationships, social thinking and awakening, and the like may as well motivate (or at times compel) people to perform research operations.

Research allows you to pursue your interests, to learn something new, to hone your problem-solving skills and to challenge yourself in new ways. Working on a faculty-initiated research project gives you the opportunity work closely with a mentor—a faculty member or other experienced researcher. With a self-initiated research project, you leave the University of Montana with a product that represents the distillation of your interests and studies, and possibly, a real contribution to knowledge.

Why should you consider getting involved in research:

- Gain hands-on experience completing a research or creative project.
- Work closely with a faculty mentor and have the opportunity to connect with other faculty and other student researchers who work in your area of interest.
- Earn academic credit, scholarships, stipends and/or other awards for having conducted research.
- Hone your leadership and teamwork skills as you collaborate with others.
- Gain academic credentials that will help create a well-rounded resume, publishing your work and working with a research team.

- Learn valuable life skills for life and class such as professionalism, time management, learning how to use online research tools.
- Learn valuable skills for life and class (professionalism, time management, multi-tasking, online research tools).
- Learn to effectively communicate your ideas and how to analyze and critique the work of others.
- Assisting in research gives you hands-on experience in your field.
- You gain a deeper understanding of the scientific process... develop research questions and form and test your hypotheses.
- You learn what it's like to work in a lab and learn about the planning of experiments, writing grants and how to report findings.
- You can publish your work.
- An excellent opportunity to develop relationships with faculty members who work in your area of interest and make connections with other students working on research.
- You will build a strong working relationship with a faculty mentor and be able to ask for a letter of recommendation.
- An opportunity to hone your leadership and teamwork skills as you collaborate with others.
- Opportunity to discover new knowledge and expand about what you already know.
- Create a well-rounded resume--you will show "hands-on" experience. You know how to produce results.

You should try to take advantage of every opportunity to make the most of your college experience. Engaging in projects, whether in a laboratory, a library, a music or art studio, or elsewhere, is a good way of developing your talents and abilities, finding out the kind of work you are good at, and preparing for graduate study or a career. Such projects often lead to presentations at professional conferences, which can be a great asset as you apply for graduate school, scholarships, or even jobs.

Every field of study has its own research problems and methods. As a researcher, you seek answers to questions of great interest to you. Your research problem could be aesthetic, social, political, scientific or technical. You choose the tools, gather and analyze the data, and report your findings to a wider audience.

Theme 1: Basic Concepts of Research

1. Meaning of Research
2. Definitions of Research
3. Objectives of Research
4. Motivation in Research
5. General Characteristics of Research
6. Criteria of Good Research
7. Qualities of a Researcher,
8. Significance of Research

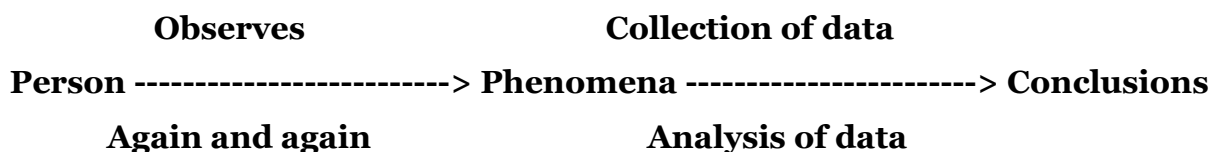
1. Meaning of Research

Each day we ask questions, large and small, of ourselves and others. Research seeks the answer of certain questions which have not been answered so far, and the answers depend upon human efforts. In common parlance, it refers to a search for knowledge. The Advanced Learners' Dictionary of current English lays down the meaning of research as a careful investigation or inquiry especially through search for new facts in any branch of knowledge. In this sense, it is a voyage of discovery. We all possess the vital instinct of inquisitiveness for, when the unknown confronts us, we wonder our inquisitiveness makes us probe and attain full and fuller understanding of the unknown. This inquisitiveness is the mother of all knowledge and the method that we employ to obtain the knowledge that can be termed research (Kothari, 1990).

The term 'research' consists of two words:

Research: Re+ search

'Re' means again and again and 'search' means to find out something. The following is the process:



Therefore, research means to observe the phenomena again and again from different dimensions. It is a process of which a person observes the phenomena again and again and collects data on the basis of data s/he draws some conclusions.

2. Definitions of a Research

Research refers to the systematic and rigorous investigation of a subject or problem in order to discover new information, understand complex issues, or test hypotheses. It involves the

collection and analysis of data, and the use of critical thinking and scientific methods to arrive at conclusions. Research can be conducted in various fields, including science, medicine, social sciences, and humanities, and can be used to inform decision-making, develop new technologies, and advance knowledge in a given field.

Research is oriented towards the discovery of relationship that exists among phenomena of the world in which we live. The fundamental assumption is that invariant relationship exists between antecedents and certain consequents so that under a specific set of conditions a certain consequence can be expected to follow the introduction of a given antecedent:

- **According to Rusk**

"Research is a point of a view, an attitude of inquiry or a frame of mind. It asks questions which have hitherto not been asked, and it seeks to answer them by following a fairly definite procedure. It is not a mere theorizing, but rather an attempt to elicit facts and to face them once they have been assembled. Research is likewise not an attempt to bolster up pre-conceived opinions, and implies a readiness to accept the conclusions to which an inquiry leads, no matter how unwelcome they may prove. When successful, research adds to the scientific knowledge of the subject".

- **According to George J. Mouly**

"Research is the systematic and scholarly application of the scientific method interpreted in its broadest sense, to the solution of social [...] problems; conversely, any systematic study designed to promote the development of social studies as a science can be considered research".

- **According to Francis G. Cornell**

"To be sure the best research is that which is reliable, verifiable, and exhaustive, so that it provides information in which we have confidence. The main point here is that research is, literally speaking, a kind of human behaviour, an activity in which people engage".

"By this definition all intelligent human behaviour involves some research." "In social studies, teachers, administrators, or others engage in 'Research' when they systematically and purposefully assemble information about schools, school children, the social matrix in which a

school or school system is determined, the characteristic of the learner or the interaction between the school and pupil.”

- **According to C. Woody**

“Research is a carefully inquiry or examination in seeking facts or principles; a diligent investigation to ascertain something; and this definition makes clear the fact that research is not merely a search for truth, but a prolonged, intensive, purposeful search. It constitutes a method for the discovery of truth which is really a method of critical thinking; it is comprising defining and redefining problems; formulating hypotheses or suggested solutions; collecting, organizing and evaluating data; making decisions and reaching conclusions to determine whether they fit the formulating hypotheses”.

- **According to C.C. Crawford**

“Research is simply a systematic and refined technique of thinking, employing specialized tools, instruments, and procedures in order to obtain a more adequate solution of a problem than would be possible under ordinary means. It starts with a problem, collects data or facts, analyses these critically and reaches decisions based on the actual evidence. It evolves original work instead of mere exercise of personal. It evolves from a genuine desire to know rather than a desire to prove something. It is quantitative, seeking to know not only what but how much, and measurement is therefore, a central feature for it”.

- **According to P.M. Cook**

"Research is an honest, exhaustive, intelligent searching for fact and their meanings or implications with reference to a given problem. The product of findings of a given piece of research should be an authentic, verifiable, and contribution to knowledge in the field studied”.

He has emphasised the following characteristics of research in his description:

- It is an honest and exhaustive process.
- The facts are studied with understanding.
- The facts are discovered in the light of a problem. Research is problem- centered.
- The findings are valid and verifiable.
- Research work should contribute new knowledge in that field (Cited in Singh, 2006).

- **According to P.D. Leeds**

“Research is the manner in which we solve knotty problems in an attempt to push back the frontiers of human ignorance. Research is ultimately a way of thinking. It is a way of looking at accumulated fact so that a collection of data speaks to the mind of the researcher”.

She has insisted on that research has many discrete characteristics. These characteristics comprise the particular approach to a probing for truth. These latter include the following:

- Research begins with a question in the mind of the researcher.
- Research demands the identification of a problem, stated in clear, unambiguous terms.
- Research requires a plan.
- Research deals with the main problem through appropriate sub-problems.
- Research seeks direction through appropriate hypotheses and is based upon obvious assumption.
- Research deals with facts.
- Research is circular (Cited in Leeds, 1980).

Research is an intellectual activity. It is responsible for bringing to light new knowledge. It is also responsible for correcting the present mistakes, removing existing misconceptions and adding new learning to the existing fund of knowledge. Researches are considered as a combination of those activities which are removed from day to day life and are pursued by those persons who are gifted in intellect and sincere in pursuit of knowledge. But it is not correct to say that the research is restricted to such type of persons, however, it is correct to say that major contribution of research comes from highly gifted and committed workers. Thus, the research is not at all mysterious and is carried on by hundreds of thousands of average individuals.

- **According to W.S. Monroe Monroe, University of Illinois states,**

“Research may be defined as a method of studying problems whose solutions are to be derived partly or wholly from facts. The facts dealt with in research may be statements of opinion, historical facts, those contained in records and reports, the results of tests, answers to questionnaires, experimental data of any sort, and so forth. The final purpose of research is to ascertain principles and develop procedures for use in the field of social studies; therefore, it should conclude by formulating principles or procedures. The mere collection and tabulation of facts is not research, though it may be preliminary to it on eve a part thereof.”

- **According to R.M. Hutchins R.M. Hutchins**, Chancellor of the University of Chicago, in “The Higher Learning in America” says,

“Research in the sense of the development, elaboration, and refinement of principles, together with the collection and use of empirical materials to aid in these processes, is one of the highest activities of a university and one in which all its professors should be engaged.” J.H. McGrath and D.E. Watson have defined the term ‘Research’ more comprehensively. “Research is a process which has utility to the extent that class of inquiry employed as the research activity vehicle is capable of adding knowledge, of stimulating progress and helping society and man relate more efficiently and effectively to the problems that society and man perpetuate and create.”

3.Objectives of Research

The purpose of research is to discover answers to questions through the application of scientific procedure. The main aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though each research study has its own specific purpose, some general objectives of research below:

- (i) To gain familiarity with a phenomenon or to achieve new insights into it. (Studies with this object in view are termed as exploratory or formative research studies).
- (ii) To portray accurately the characteristics of a particular individual, situation or a group.(Studies with this object in view are known as descriptive research studies).
- (iii) To determine the frequency with which something occurs or with which it is associated with something else. (Studies with this object in view are known as diagnostic research studies).
- (iv) To test a hypothesis of a causal relationship between variables. (Such studies are known as hypothesis-testing research studies)

Singh (2006) presented a different classification of objectives. For him, there are three fundamental objectives of research. These are:

- **Theoretical Objectives**

Those researches whose objectives are theoretical aim to formulate new theories, principles, or laws. Such type of research is exploratory because it explains the relationships of certain variables. The researches contribute some basic knowledge to the human knowledge.

- **Factual Objectives**

These researches whose objectives are factual aim to find out new facts. This objective by nature is descriptive. These researches describe facts or events which happened previously. Such type of research is done in history.

- **Application objectives**

The research having application objectives does not contribute a new knowledge in the field of human knowledge but suggests new applications. By application, we mean improvement and modification.

4. Motivation in Research

There are many different motivations for conducting research, depending on the field and the specific research project. Some common motivations include:

- **Advancing knowledge:** Research is often conducted to increase understanding and knowledge about a specific subject or phenomenon. This can be for the sake of expanding knowledge for its own sake, as in basic research, or to solve specific problems or develop new products and technologies, as in applied research.
- **Solving problems:** Research can be used to identify and understand problems in a specific field, and to develop solutions to those problems. This can include issues related to health, technology, environment, society, and many other fields.
- **Developing new products and technologies:** Research is often conducted in industry and government to develop new products and technologies. For example, research in the field of medicine can lead to the development of new drugs and treatments.
- **Improving decision-making:** Research can provide the information and data needed to make informed decisions in various fields such as business, policy-making, and education.
- **Finding answers:** Research can be motivated by the desire to find answers to specific questions or to test hypotheses. It allows people to explore their curiosity and to address the gap of knowledge in a particular area.
- **Career advancement:** In some fields, conducting research is a requirement for career advancement. Researchers and professors in universities, for example, are often required to publish their research in order to be promoted or to receive tenure.
- **Making a positive impact:** Research can be motivated by a desire to make a positive impact on society and to address important issues such as poverty, inequality, and environmental degradation.
- **Professional development:** Research can be used to develop the skills and knowledge of researchers, students and professionals in a specific field. It can also be used to update current knowledge and skills to stay current in the field.

- **Personal Growth:** Research can be a personal journey of self-discovery and growth. It allows individuals to explore their interests and passions and to develop new perspectives and insights on the world around them.
- **Collaboration:** Research can be motivated by the desire to collaborate with other researchers, professionals, and organizations to share knowledge and work together to achieve a common goal.
- **Competition:** Research can be motivated by the desire to be the first to discover something new or to be the best in a specific field. This can lead to the development of new technologies, products, and services, and can also lead to the growth and development of the field.
- **Social responsibility:** Research can be motivated by the desire to contribute to the betterment of society and to address social issues such as poverty, inequality, and environmental degradation.
- **Innovation:** Research can be motivated by the desire to develop new and innovative solutions to problems, which can lead to the creation of new products, services, and technologies.

In summary, research can be motivated by a wide range of factors, including the desire to advance knowledge, solve problems, develop new products and technologies, improve decision-making, find answers, career advancement, personal growth, collaboration, competition, social responsibility, and innovation.

5. General Characteristics of Research

The following characteristics may be gathered from the definitions of “research”:

- It gathers new knowledge or data from primary or first-hand sources.
- It places emphasis upon the discovery of general principles.
- It is an extent systematic and accurate investigation.
- It uses certain valid data gathering devices.
- It is logical and exact.
- The researcher eliminates personal feelings and preferences.
- Research is patient and unhurried activity
- Research is carefully recorded and reported.
- Conclusions and generalisations are arrived at carefully and cautiously (Singh,2006).

Similarly, Pandey (2015) added:

- Research is directed toward the solution of a problem.
- Research requires expertise.
- Research emphasizes the development of generalizations, principles, or theories that will be helpful in predicting future occurrences.
- Research is based upon observable experience or empirical evidences.
- Research demands accurate observation and description.
- Research involves gathering new data from primary or first-hand sources or using existing data for a new purpose.
- Research is characterized by carefully designed procedures that apply rigorous analysis.
- Research involves the quest for answers to un-solved problems.
- Research strives to be objective and logical, applying every possible test to validate the procedures employed the data collected and the conclusions reached.
- Research is characterized by patient and unhurried activity.
- Research is carefully recorded and collected.
- Research sometimes requires courage

According to Gyankovandar (2020), research must have these characteristics:

- Objective

Research should have objectives and it must answer what we are going to achieve through this research and all the objectives should be based on the questions specifically not in a descriptive way.

Setting up objectives requires the formulation of a proper hypothesis, otherwise, there may be a lack of congruence between the research questions and the hypothesis.

- Control

Research should be based on the selective hypothesis not outside the topic and research objective. We should be following the required format of research for a better paper or research presentation. A researcher should have control over the research topics.

- Generalizability

Generalizability is the measure of how useful the outcomes of a study are for a wider group of people or situations. A study has good generalizability if the results are broadly applicable to various kinds of people.

- Research Should be Done Without Personal Biases

Biasesness on the research reflects it as bad research and an incomplete version of the documentation. You have to be free from biasedness and should follow the planned steps as well. A researcher should follow the methodology and not use personal perception to change the data and manipulate the results.

- Systematic

Research is done on the basis of planning not just on random research, reading, and writing techniques. It does have a methodology it does and it should follow the systematic rules and steps for completing the research. Research should follow the steps serially to make it fruitful and better.

- Reproducible

A researcher should be able to get approximately the same results by using an identical methodology if the investigation is conducted on a population having characteristics similar to the earlier study.

Problem Needs to be Solved

Research should solve the problem of the hypothesis. It should identify the problems and investigates every aspect in depth.

- Logical

For the research, it's a tough job to give the proper and logical basis and informational sources. Research does not only present the result on the basis of interpretation but proves those results using various logics.

- Replicable

Various research on the same topic could enhance the reliability of the research and its results. It validates the accuracy and the reliability of the theory or the hypothesis.

- Wrapping it up

Research should be conducted in a manner where it has to provide the facts and prove the things as it has defined or lineup for the investigation.

6.Criteria of Good Research:

Whatever may be the types of research and studies; one thing that is important is that they all meet on the common ground of scientific method employed by them. One expects scientific research to satisfy the following criteria:

1. The purpose of the research should be clearly defined and common concepts bemused.

2. The research procedure used should be described in sufficient detail to permit another researcher to repeat the research for further advancement, keeping the continuity of what has already been attained.
3. The procedural design of the research should be carefully planned to yield results that areas objective as possible.
4. The researcher should report with complete frankness, flaws in procedural design and estimate their effects upon the findings.
5. The analysis of data should be sufficiently adequate to reveal its significance and the methods of analysis used should be appropriate. The validity and reliability of the data should be checked carefully.
6. Conclusions should be confined to those justified by the data of the research and limited to those for which the data provide an adequate basis.
7. Greater confidence in research is warranted if the researcher is experienced, has a good reputation in research and is a person of integrity.

In other words, we can state the qualities of a good research as under:

1. *Good research is systematic*: It means that research is structured with specified steps to be taken in a specified sequence in accordance with the well defined set of rules. Systematic characteristic of the research does not rule out creative thinking but it certainly does reject the use of guessing and intuition in arriving at conclusions.
2. *Good research is logical*: This implies that research is guided by the rules of logical reasoning and the logical process of induction and deduction are of great value in carrying out research. Induction is the process of reasoning from a part to the whole whereas deduction is the process of reasoning from some premise to a conclusion which follows from that very premise. In fact, logical reasoning makes research more meaningful in the context of decision making.
3. *Good research is empirical*: It implies that research is related basically to one or more aspects of a real situation and deals with concrete data that provides a basis for external validity to research results.
4. *Good research is replicable*: This characteristic allows research results to be verified by replicating the study and thereby building a sound basis for decisions.

7. Qualities of a Good Researcher

Friendly with Respondents: A good researcher must have the quality to become friendly with respondents. It should have to talk to them in the same language in which the responding is answering and make happy made.

Least Discouragement: If the people are not co-operating to give correct data, the researcher should not be discouraged and face the difficulties, it would be called a good researcher.

Free From Prejudice: A researcher would be good if he has no prejudice or bias study about a problematic situation but he is capable of providing clear information's.

Capacity of Depth Information: A researcher should have the capacity to collect more and more information in little time.

Accuracy: A researcher would be said to be good, if he is accurate in his views. His ideas must be accurate one.

Truthful: A researcher must have to be truthful. Its idea would be free from false reports and saying information.

Keen Observer: It is the quality of a good researcher that he may have the ideas of keen and deep observation.

Careful in Listening: A researcher would be more careful in listening. He would have the quality of listening very low information's even whispering.

Low Dependency on Common Sense: A researcher should be called good if he has low dependency on common sense but keep in observation all the events and happenings.

Least time Consumer: Good researcher must have the capacity of least time consuming. It will have to do more work in a little time because of the shortage of time.

Economical: Good researcher must have control over his economic resources. He has to keep his finances within limits and spend carefully.

Low Care of Disapprovals of Society: A good researcher have no care of the approvals or disapprovals but doing his work with zeal and patience to it.

Expert in Subject: A researcher would be a good one if he has full command over his subject. He makes the use of his theoretical study in field work easily.

Free From Hasty Statements: It is not expected from a good researcher to make his study hasty and invalid with wrong statements. Its study must be based on reality & validity.

Good in Conversation: The conversation of a good researcher should be sympathetic and not boring. He must have the skill and art to be liked by the people.

Having Clear Terminology: A good researcher's terminology would be clear. It would be free from out wards to become difficult for the respondents to answer.

Trained in Research Tools: Research is impossible without its techniques and tools. So, it should be better for a researcher to know about the use of these tools.

Dress and Behavior same to the area: The dress and the behavior of the researcher should be same as to the study area. It is must for him to convince the people easily and adopt their dress.

More Analytical: A researcher would be different from other people of the society. On the basis of this quality, he may observe the situation very well. Then he should be able to solve the problems easily.

Equality and Justice: A good researcher should believe on equality and justice. As equal to all type of people he may collect better information's from the respondents.

8. Significance of Research

Research is significant because it is a systematic and structured process of inquiry that helps us to gain new knowledge and insights into various phenomena, and to improve our understanding of the world around us. Here are some of the key reasons why research is important:

- **Advancing knowledge:** Research helps us to expand our knowledge and understanding of a wide range of topics, from scientific discoveries to social issues. Through research, we can uncover new facts, theories, and insights that help us to build upon existing knowledge and make new discoveries.
- **Solving problems:** Research can help us to identify and address various social, economic, and environmental problems. By gathering and analyzing data, researchers can identify the causes and effects of problems, and develop solutions to address them.
- **Improving policies and practices:** Research can inform policy and practice by providing evidence-based information and recommendations. Through research, we can identify best practices and strategies for addressing various issues, and help to improve policies and practices in different fields.
- **Enhancing critical thinking and creativity:** Research encourages critical thinking and creativity, as researchers must question assumptions, challenge existing ideas, and develop new insights and solutions. Through research, we can develop our analytical and creative thinking skills, which can be applied in various settings.

Overall, research is significant because it helps us to generate new knowledge, address problems, inform policies and practices, and enhance our critical thinking and creativity.

Theme2: *Research Process*

Set the sequence of step-by-step activities.

Research Process: Before embarking on the details of research methodology and techniques, it seems appropriate to present a brief overview of the research process. Research process consists of series of actions or steps necessary to effectively carry out research and the desired sequencing of these steps.

The research process is a systematic and structured approach to inquiry that involves several key stages. While different disciplines and types of research may have their own unique characteristics and steps, the following stages are common to most research processes:

1. Identify the research problem: The first step in the research process is to identify a research problem or question that you want to investigate. This may involve reviewing existing literature, observations, personal experiences, or discussions with others.
2. Develop a research plan: Once you have identified a research problem, you need to develop a research plan that outlines your research design, methods, and procedures. This may involve selecting a research method (e.g., qualitative, quantitative, mixed-methods), identifying a sample or participants, developing research instruments (e.g., surveys, interviews, observation protocols), and determining data collection and analysis procedures.
3. Collect data: The next stage is to collect data using the research methods and procedures you have developed. This may involve conducting surveys, interviews, observations, experiments, or other methods, depending on your research question and design.
4. Analyze data: After collecting data, you need to analyze it using appropriate statistical or qualitative methods. This may involve organizing, summarizing, and interpreting data, and identifying patterns, themes, or relationships.
5. Draw conclusions: Based on your analysis, you can draw conclusions and make recommendations. This may involve summarizing key findings, answering research questions, and discussing implications for theory, practice, or policy.
6. Communicate results: Finally, you need to communicate your research results to others. This may involve writing a research report, presenting at conferences or meetings, or publishing in academic journals.

Overall, the research process involves a series of steps that are designed to help researchers identify and investigate research problems, collect and analyze data, and draw conclusions and make recommendations based on their findings.

At times, the first step determines the nature of the last step to be undertaken. If subsequent procedures have not been taken into account in the early stages, serious difficulties may arise which may even prevent the completion of the study. One should remember that the various steps involved in a research process are not mutually exclusive; nor are they separate and distinct. They do not necessarily follow each other in any specific order and the researcher has to be constantly anticipating at each step in the research process the requirements of the subsequent steps. However, the following order concerning various steps provides a useful procedural guideline regarding the research process:

1. formulating the research problem;
2. extensive literature survey;
3. developing the hypothesis;
4. preparing the research design;
5. determining sample design;
6. collecting the data;
7. execution of the project;
8. analysis of data;
9. hypothesis testing;
10. generalizations and interpretation,
11. preparation of the report or presentation of the results, i.e., formal write-up of conclusions reached. A brief description of the above stated steps will be helpful.

1. Formulating the research problem: There are two types of research problems, vi., those which relate to states of nature and those which relate to relationships between variables. At the very outset the researcher must single out the problem he wants to study, i.e., he must decide the general area of interest or aspect of a subject-matter that he would like to inquire into. Initially the problem may be stated in a broad general way and then the ambiguities, if any, relating to the problem be resolved. Then, the feasibility of a particular solution has to be considered before a working formulation of the problem can be set up. The formulation of a general topic into a specific research problem, thus, constitutes the first step in a scientific enquiry. Essentially two steps are involved in formulating the research problem, vi.,

understanding the problem thoroughly, and rephrasing the same into meaningful terms from an analytical point of view. The best way of understanding the problem is to discuss it with one's own colleagues or with those having some expertise in the matter. In an academic institution the researcher can seek the help from a guide who is usually an experienced man and has several research problems in mind. Often, the guide puts forth the problem in general terms and it is up to the researcher to narrow it down and phrase the problem in operational terms. In private business units or in governmental, the problem is usually earmarked by the administrative agencies with whom the researcher can discuss as to how the problem originally came about and what considerations are involved in its possible solutions. The researcher must at the same time examine all available literature to get himself acquainted with the selected problem. He may review two types of literature—the conceptual literature concerning the concepts and theories, and the empirical literature consisting of studies made earlier which are similar to the one proposed. The basic outcome of this review will be the knowledge as to what data and other materials are available for operational purposes which will enable the researcher to specify his own research problem in a meaningful context. After this the researcher rephrases the problem into analytical or operational terms i.e., to put the problem in as specific terms as possible. This task of formulating, or defining, a research problem is a step of greatest importance in the entire research process. The problem to be investigated must be defined unambiguously for that will help discriminating relevant data from irrelevant ones. Care must, however, be taken to verify the objectivity and validity of the background facts concerning the problem. Professor W. A. Mismanage correctly states that the statement of the objective is of basic importance because it determines the data which are to be collected, the characteristics of the data which are relevant, relations which are to be explored, the choice of techniques to be used in these explorations and the form of the final report. If there are certain pertinent terms, the same should be clearly defined along with the task of formulating the problem. In fact, formulation of the problem often follows a sequential pattern where a number of formulations are set up, each formulation more specific than the preceding one, each one phrased in more analytical terms, and each more realistic in terms of the available data and resources.

2. Extensive literature survey: Once the problem is formulated, a brief summary of it should be written down. It is compulsory for a research worker writing a thesis for a Ph.D. degree to write synopsis of the topic and submit it to the necessary Committee or the Research Board for approval. At this juncture the researcher should undertake extensive literature survey

connected with the problem. For this purpose, the abstracting and indexing journals and published or unpublished bibliographies are the first place to go to. Academic journals, conference proceedings, government reports, books etc., must be tapped depending on the nature of the problem. In this process, it should be remembered that one source will lead to another. The earlier studies, if any, which are similar to the study in and should be carefully studied. A good library will be a great help to the researcher at this stage.

3. Development of working hypotheses: After extensive literature survey, researcher should state in clear terms the working hypothesis or hypotheses. Working hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences. As such the manner in which research hypotheses are developed is particularly important since they provide the focal point for research. They also affect the manner in which tests must be conducted in the analysis of data and indirectly the quality of data which is required for the analysis. In most types of research, the development of working hypothesis plays an important role. Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested. The role of the hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track. It sharpens his thinking and focuses attention on the more important facets of the problem. It also indicates the type of data required and the type of methods of data analysis to be used. How does one go about developing working hypotheses? The answer is by using the following approach:

- a. Discussions with colleagues and experts about the problem, its origin and the objectives in seeking a solution;
- b. Examination of data and records, if available, concerning the problem for possible trends, peculiarities and other clues;
- c. Review of similar studies in the area or of the studies on similar problems; and
- d. Exploratory personal investigation which involves original field interviews on a limited scale with interested parties and individuals with a view to secure greater insight into the practical aspects of the problem.

Thus, working hypotheses arise as a result of a-priori thinking about the subject, examination of the available data and material including related studies and the counsel of experts and interested parties . Working hypotheses are more useful when stated in precise and clearly defined terms. It may as well be remembered that occasionally we may encounter a problem where we do not need working hypotheses, especially in the case of exploratory or formularies

researches which do not aim at testing the hypothesis. But as a general rule, specification of working hypotheses is another basic step of the research process in most research problems.

4.Preparing the research design: The research problem having been formulated in clear cut terms, the researcher will be required to prepare a research design, i.e., he will have to state the conceptual structure within which research would be conducted. The preparation of such a design facilitates research to be as efficient as possible yielding maximal information. In other words, the function of research design is to provide for the collection of relevant evidence with minimal expenditure of effort, time and money. But how all these can be achieved depends mainly on the research purpose. Research purposes may be grouped into four categories,

- Exploration,
- Description,
- Diagnosis, and
- Experimentation.

A flexible research design which provides opportunity for considering many different aspects of a problem is considered appropriate if the purpose of the research study is that of exploration. But when the purpose happens to be an accurate description of a situation or of an association between variables, the suitable design will be one that minimizes bias and maximizes the reliability of the data collected and analyses. There are several research designs, such as, experimental and non-experimental hypothesis testing. Experimental designs can be either informal designs (such as before-and-after without control-after-only with control, before-and-after with control) or formal designs (such as completely randomized design, randomized block design, Latin square design, simple and complex factorial designs), out of which the researcher must select one for his own project.

5.Determining sample design: All the items under consideration in any field of inquiry constitute 'universe' or 'population'. A complete enumeration of all the items in the 'population' is known as a census inquiry. It can be presumed that in such an inquiry when all the items are covered no element of chance is left and highest accuracy is obtained. But in practice this may not be true. Even the slightest element of bias in such an inquiry will get larger and larger as the number of observations increases. Moreover, there is no way of checking the element of bias or its extent except through a survey or use of sample checks. Besides, this type of inquiry involves a great deal of time, money and energy. Not only this, census inquiry is not

possible in practice under many circumstances. For instance, blood testing is done only on sample basis. Hence, quite often we select only a few items from the universe for our study purposes. The items so selected constitute what is technically called sample. The researcher must decide the way of selecting a sample or what is popularly known as the sample design. In other words, a sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given population. Thus, the plan to select 12 of a city's 200 drugstores in a certain way constitutes a sample design. Samples can be either probability samples or nonprobability samples. With probability samples each element has a known probability of being included in the sample but the non-probability samples do not allow the researcher to determine this probability. Probability samples are those based on simple random sampling, systematic sampling, stratified sampling, cluster/area sampling whereas non-probability samples are those based on convenience sampling, judgment sampling and quota sampling techniques.

6. Collecting the data: In dealing with any real life problem it is often found that data at hand are inadequate, and hence, it becomes necessary to collect data that are appropriate. There are several ways of collecting the appropriate data which differ considerably in context of money costs, time and other resources at the disposal of the researcher. Primary data can be collected either through experiment or through survey. If the researcher conducts an experiment, he observes some quantitative measurements, or the data, with the help of which he examines the truth contained in his hypothesis. But in the case of a survey, data can be collected by any one or more of the following ways:

i. By observation: This method implies the collection of information by way of investigator's own observation, without interviewing the respondents. The information obtained relates to what is currently happening and is not complicated by either the past behavior or future intentions or attitudes of respondents. This method is no doubt an expensive method and the information provided by this method is also very limited. As such this method is not suitable in inquiries where large samples are concerned.

ii. Through personal interview: The investigator follows a rigid procedure and seeks answers to a set of pre-conceived questions through personal interviews. This method of collecting data is usually carried out in a structured way where output depends upon the ability of the interviewer to a large extent.

iii. Through telephone interviews: This method of collecting information involves contacting the respondents on telephone itself. This is not a very widely used method but it plays an

important role in industrial surveys in developed regions, particularly, when the survey has to be accomplished in a very limited time.

iv. By mailing of questionnaires: The researcher and the respondents do come in contact with each other if this method of survey is adopted. Questionnaires are mailed to the respondents with a request to return after completing the same. It is the most extensively used method in various economic and business surveys. Before applying this method, usually Pilot Study for testing the questionnaire is conducted which reveals the weaknesses, if any, of the questionnaire. Questionnaire to be used must be prepared very carefully so that it may prove to be effective in collecting the relevant information.

v. Through schedules: Under this method the enumerators are appointed and given training. They are provided with schedules containing relevant questions. These enumerators go to respondents with these schedules. Data are collected by filling up the schedules by enumerators on the basis of replies given by respondents. Much depends upon the capability of enumerators so far as this method is concerned. Some occasional field checks on the work of the enumerators may ensure sincere work. The researcher should select one of these methods of collecting the data taking into consideration the nature of investigation, objective and scope of the inquiry, financial resources, available time and the desired degree of accuracy. Though he should pay attention to all these factors but much depends upon the ability and experience of the researcher. In this context Dr ALGOL very aptly remarks that in collection of statistical data common sense is the chief requisite and experience is the chief teacher.

7. Execution of the project: Execution of the project is a very important step in the research process. If the execution of the project proceeds on correct lines, the data to be collected would be adequate and dependable. The researcher should see that the project is executed in a systematic manner and in time. If the survey is to be conducted by means of structured questionnaires, data can be readily machine processed. In such a situation, questions as well as the possible answers may be coded. If the data are to be collected through interviewers, arrangements should be made for proper selection and training of the interviewers. The training may be given with the help of instruction manuals which explain clearly the job of the interviewers at each step. Occasional field checks should be made to ensure that the interviewers are doing their assigned job sincerely and efficiently. A careful watch should be kept for unanticipated factors in order to keep the survey as much realistic as possible. This, in other words, means that steps should be taken to ensure that the survey is under statistical control so that the collected information is in accordance with the pre-defined standard of

accuracy. If some of the respondents do not cooperate, some suitable methods should be designed to tackle this problem. One method of dealing with the non-response problem is to make a list of the non-respondents and take a small sub-sample of them, and then with the help of experts' vigorous efforts can be made for securing response.

8. Analysis of data: After the data have been collected, the researcher turns to the task of analyzing them. The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences. The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis. Thus, researcher should classify the raw data into some purposeful and usable categories. Coding operation is usually done at this stage through which the categories of data are transformed into symbols that may be tabulated and counted. Editing is the procedure that improves the quality of the data for coding. With coding the stage is ready for tabulation. Tabulation is a part of the technical procedure wherein the classified data are put in the form of tables. The mechanical devices can be made use of at this juncture. A great deal of data, especially in large inquiries, is tabulated by computers. Computers not only save time but also make it possible to study large number of variables affecting a problem simultaneously. Analysis work after tabulation is generally based on the computation of various percentages, coefficients, etc., by applying various well defined statistical formulae. In the process of analysis, relationships or differences supporting or conflicting with original or new hypotheses should be subjected to tests of significance to determine with what validity data can be said to indicate any conclusion(s). For instance, if there are two samples of weekly wages, each sample being drawn from factories indifferent parts of the same city, giving two different mean values, then our problem may be whether the two mean values are significantly different or the difference is just a matter of chance. Through the use of statistical tests we can establish whether such a difference is a real one or is the result of random fluctuations. If the difference happens to be real, the inference will be that the two samples Research come from different universes and if the difference is due to chance, the conclusion would be that the two samples belong to the same universe. Similarly, the technique of analysis of variance can help us in analyzing whether three or more varieties of seeds grown on certain fields yield significantly different results or not. In brief, the researcher can analyze the collected data with the help of various statistical measures.

9. Hypothesis-testing: After analyzing the data as stated above, the researcher is in a position to test the hypotheses, if any, he had formulated earlier. Do the facts support the hypotheses or

they happen to be contrary? This is the usual question which should be answered while testing hypotheses. Various tests, such as Chi square test, t-test, F-test, have been developed by statisticians for the purpose. The hypotheses may be tested through the use of one or more of such tests, depending upon the nature and object of research inquiry. Hypothesis -testing will result in either accepting the hypothesis or in rejecting it. If the researcher had no hypotheses to start with, generalizations established on the basis of data may be stated as hypotheses to be tested by subsequent researches in times to come.

10. Generalizations and interpretation: If a hypothesis is tested and upheld several times, it may be possible for the researcher to arrive at generalization, i.e., to build a theory. As a matter of fact, the real value of research lies in its ability to arrive at certain generalizations. If the researcher had no hypothesis to start with, he might seek to explain his findings on the basis of some theory. It is known as interpretation. The process of interpretation may quite often trigger off new questions which in turn may lead to further researches.

Theme 3: *The Research Problem*

1. What is a Research Problem
2. Selecting the Problem
3. Sources of the Problem
4. Defining a Problem
5. Statement of a Problem
6. Evaluation of a Problem

- **What is a Research Problem?**

A research problem, in general, refers to some difficulty which a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same. Thus, a research problem is one which requires a researcher to find out the best solution by which cause of action the objective can be attained optimally in the context of a given environment. This stage requires an enquiring mind, an imagination, and an eye for inconsistencies and inadequacies in current measure. It is often useful in identifying a specific problem (Kothari 1990; Walliman, 2001).

In particular, some components that make-up a research problem can be examples like the ones that we state below:

- There must be an individual or a group which has some difficulty or the problem.
- There must be some objective (s) to be attained at. If one wants nothing, one cannot have a problem.
- There must be alternative means for obtaining the objective (s) one wishes to attain. This means that there must be at least two means available to a researcher for s/he has no choice of means, s/he cannot have a problem.
- There must remain some doubt in the mind of a researcher with a regard to the solution of alternatives. This means that research must answer the questions concerning the relative efficiency of the possible alternatives.
- There must be some environment (s) to which the difficulty pertains (Kothari, 1990).

Thus, this initial stage in research requires an awareness of current issues in the subject and inquisitiveness and questioning mind.

On this point, Walliman (2001) suggests a list of features that one should follow and look for it in order to obtain a research problem. This list

concerns the following ideas:

- The research problem should be a great interest to you.
- The research problem should be significant.
- The research problem should be delineated.
- The researcher should be able to obtain the information required.
- The researcher should be able to draw conclusions related to the problem.
- The researcher should be able to state the problem clearly and concisely (p. 22).

2. Selecting a Research Problem

The research problem undertaken for study must be carefully selected. A problem must spring from the researcher's mind. The factors which need to be considered in the selection of research problem are both external and internal criteria. External criteria have to do with matters, such as novelty, and importance for the field. Internal criteria, on the other side, involve considerations as interest, training, cost, and time.

According to Good and Scates cited in Sing (2006), the criteria for the selection of the problem include matters, such as:

- Novelty and avoidance of unnecessary duplication.
- Interest, intellectual curiosity and drive.
- Training and personal qualifications.
- Importance for the field.
- Special working conditions.
- Approachability of the sample.
- Cost.
- Administrative cooperation.
- Time factor.

Singh (ibid) referred to McShan who has proposed an objective guide for judging the merits of a problem. A set of questions may be raised for this purpose. These are:

- Is the problem really important?
- Is the problem interesting to others?
- Is the chosen problem a real problem?
- Am I able to state hypotheses from the problem?
- Do I understand something new from this problem?
- Will I be able to select a sample from which I can target the population?

- Will my proposed data-gathering instruments actually give the information which I want?
- Is the study, including the application of its results, practical?

3.Sources of the Problem

To select a research problem, a researcher can consider some sources. Examples of these are:

- Personal experience of the researcher in the field.
- Literature review on a research topic.
- New innovations, changes, and developments in a given research area.
- Research contacts with experts in a given research area.

4. Defining a Problem

According to a number of research methodologies, a problem clearly stated is a problem half-solved. This means that there is a need for defining a research problem as an initial step in a research process. Besides, it is usually recommended by research methodologists that the investigated problem must be defined unambiguously to discriminate the relevant data from irrelevant data. A proper definition of a research problem will enable the researcher to be on the right track; whereas, an ill-defined problem may create hurdles (Kothari, 1990).

For Singh (2006), to define a problem means to pinpoint the problem or defining a problem to reach the core of a problem i.e., threads are analyses.

(a) Need of defining a problem:

The definition of a problem serves the following purposes:

- The definition of a problem sets the direction of the study.
- The definition reveals the methodology or procedure of the study.
- The definition helps the researcher to control subjectivity.
- The definition of the problem suggests and specifies the variables to be taken up into the investigation through a problem involved in so many variables.
- The definition makes the research work practical.

(b) Precautions are to be taken in identifying the problem:

The following precautions should be taken into consideration for identifying a problem.

- The words used for defining a problem should have a single meaning.
- The statement of the problem must be brief but comprehensive.
- The assumptions are to be recognised for the study.
- The problem should have practical importance in the field.
- The definition or statement of the problem should have certain rationale.

(c) The following steps are to be followed in defining a problem:

- The researcher should have to develop a conceptual framework of the problem.
- Delimiting the elements of the problem.
- Classifying the elements in the homogeneous group.
- Locating the key-concepts in the conceptual framework.
- Evaluating the theoretical security of the problem.
- The final form of the statement can be given into verbal form to a conceptual framework of the problem.
- Deciding the practical difficulty in conducting the study (p.27).

5. Statement of the Problem

After selecting a problem, it should be stated carefully, Kerling (cited in Singh, *ibid*) has identified three criteria of a good problem statement. These mainly concern:

- A problem should be concerned with relation between two or more variables.
- It should be stated ‘clearly and unambiguously in right form’.
- It should be amenable to testing (p.29).

6. Evaluating of a Problem

Before the research problem can be considered appropriate, several searching questions should be raised. It is only when these questions are answered in the affirmative, one can say that the problem can be effectively solved through the process of research. Such questions are those ones stated in below:

- Is the problem significant? Would the solution make any difference as far this study is concerned?
- Is the answer to the main question already available?

- Is the problem feasible? This simply means will the researcher be able to carry out the research? and will s/he be able to reach successful conclusions?
- Is the researcher skillful enough to collect and analyse data?
- Are pertinent data accessible?
- Does the researcher have enough time to carry out the research?

Theme4: *The Review of Literature*

1. Meaning of Review of Literature
2. Need of Review of Literature
3. Objectives of Review of Literature
4. Sources of Literature
5. The Functions of Literature
6. How to Conduct the Review of Literature
7. Summary and Synthesis
8. A Literature Review vs. An Annotated Bibliography

1. Meaning of Literature Review

The phrase 'review of literature' consists of two words 'review' and 'literature'. From the traditional meaning, the word literature is used with reference to the language, e.g. Hindi Literature, English Literature, Sanskrit Literature. It includes a subject content: prose, poetry, dramas, novels, stories, etc. In research methodology, the term literature refers to the knowledge of a particular area of investigation of any discipline which includes theoretical, practical, and its research studies.

The term 'review' means to organise the knowledge of the specific area of research to evolve an edifice of knowledge to show that this study would be an addition to this field. The task of review of literature is highly creative and tedious because the research has to synthesise the available knowledge of the field in a unique way to provide the rationale for his/her study (Singh, 2006, p. 35).

The term 'Review of Literature' has been defined in the following ways:

- According to Good, Barr and Scates

“The competent physician must keep abreast of the latest discoveries in the field of medicine. Obviously, the careful student of education, the research worker and investigator should be familiar with location and use of sources of educational information”.

- According to W. R. Borg

“The literature in any field forms the foundation upon which all future work will be built. If we fail to build the foundation of knowledge provided by the review of literature, our work is likely to be shallow and naive and will often duplicate work that has already been done better by someone else”.

- According to C. V. Good

“The keys to the vast storehouse of published literature may open doors to sources of significant problems and explanatory hypotheses and provide helpful orientation for definition of the problem, background for selection of procedures, and comparative data for interpretation of

results. In order to be creative and original, one must read extensively and critically as a stimulus to thinking”.

- According to J. W. Best

“Practically all human knowledge can be found in books and libraries. Unlike other animals that must start a new with each generation, man builds upon the accumulated and recorded knowledge of the past. His constant adding to the vast store of knowledge makes possible progress in all areas of human endeavour”.

Reviewing the literature has two phases. The first phase includes identifying all the relevant published material in the problem area and reading that part of it with which we are not thoroughly familiar. The second phase of the review of literature involves writing this foundation of ideas into a section of the research report. For the researcher, it establishes the background in the field. For the readers, it provides a summary of thinking and research necessary for them to understand the study (ibid).

2. Need of Review of Literature

The review of literature is essential due to the following:

- One of the early steps in planning a research work is to review a research done previously in the particular area of interest.
- It is very essential for every researcher to be up-to-date in his/her information about the literature related to his/her own problem already done by others.
- It avoids the replication of the study of findings to take an advantage from similar or related literature.
- It provides as source of problem of study.

3. Objectives of Review of Literature

The review of literature serves the following purposes in conducting research work:

- It provides theories, ideas, explanations or hypotheses which may prove useful in the formulation of a new problem.
- It avoids replication when it indicates whether the evidence already available solves the problem adequately without requiring further investigation.
- It provides the sources for hypothesis. The researcher can formulate research hypothesis on the basis of available studies.
- It suggests method, procedure, sources of data appropriate to the solution of the problem.
- The conclusions drawn in the related studies may be significantly compared and maybe used as the subject for the findings of the study.
- Literature in one’s area of activity is good avenue towards making oneself.

4. Sources of Literature

There are various sources of literature which may be used for this purpose. Examples of these are:

- Books and textbooks material;
- Periodicals;
- Abstracts;
- Encyclopedias;
- Handbooks and Guides;
- Special Dictionaries;
- Dissertations and Theses; and
- The Internet.

5. The Functions of Literature

There are four functions of review of literature:

- The conceptual frame of reference for the contemplated research.
- An understanding of the status of research in problem area.
- Clues to the research approach, method, instrumentation, and data analysis.
- Probability of success and significance of findings.

6. How to Conduct the Review of Literature

To conduct the review of literature, the researcher should go through these stages:

Stage 1: Try to gain some impression of what the source is about; what a question or questions the author is trying to answer; how the source is structured, and whether, in fact, the questions tackled and the answers put forward are relevant to your needs.

Stage 2: If you decide that the source is relevant to your research subject, then you must formulate the question or questions you anticipate will be answered in the source. This enables you to locate the required information and will save you time and effort as you cannot afford to go reading aimlessly through the source. At this stage, you must adopt an active and analytical attitude.

Stage 3: After formulating the main question or questions that you anticipate the source will answer, you must review the source to look for answer for your questions. This involves locating the parts of the source where your questions are dealt with. You must then look for the answers or conclusions that the author has drawn, and also at how the author arrived at them.

Stage 4: Supposing that you have extracted the relevant information from the written report, you must now record your data in note form, so that later you can retrieve it and use it easily at the appropriate stage (Walliman, 2001).

7. Summary and Synthesis

Summary and synthesis are two key elements of literature review writing. A literature review is a critical analysis and evaluation of existing literature on a specific research topic.

Summary involves presenting a brief overview of the key points, findings, and arguments of the existing literature on a topic. It involves identifying the main themes, ideas, and conclusions presented in the literature and summarizing them in a clear and concise manner.

Synthesis involves combining and integrating the findings and arguments of multiple sources to develop a new and original perspective on the research topic. It involves analyzing and comparing the existing literature to identify patterns, themes, and relationships, and to draw connections and insights across the literature.

In literature review writing, summary and synthesis work together to provide a comprehensive and nuanced understanding of the existing literature on a research topic. A literature review should include both summary and synthesis, with a focus on synthesizing the literature to develop a new perspective or argument.

In a summary, you share the key points from an individual source and then move on and summarize another source. In synthesis, you need to combine the information from those multiple sources and add your own analysis of the literature.

A good literature review should also provide critical analysis of the literature, evaluating the strengths and weaknesses of the existing studies, identifying gaps in the literature, and proposing future research directions. It should be well-organized, clearly written, and based on reliable and credible sources of information.

8. A Literature Review vs. An Annotated Bibliography

A literature review and an annotated bibliography are two common types of academic writing assignments that involve reviewing existing literature on a specific research topic. While both types of assignments involve reading and summarizing literature, there are some key differences between them:

1. **Purpose:** The purpose of a literature review is to provide a critical analysis and synthesis of the existing literature on a research topic. The goal is to identify patterns, themes, and relationships in the literature, evaluate the strengths and weaknesses of existing studies, and propose future research directions. An annotated bibliography, on the other hand, provides a list of sources with brief summaries or annotations, without necessarily analyzing or synthesizing the literature.
2. **Scope:** A literature review typically involves a broader and more comprehensive analysis of the literature than an annotated bibliography. It involves reviewing a larger number of sources and covering a wider range of topics and themes. An annotated bibliography, in contrast, may only include a smaller number of sources and focus on a narrower aspect of the research topic.

3. **Format:** A literature review is typically organized into sections or themes, with each section summarizing and synthesizing the literature on a specific aspect of the research topic. An annotated bibliography, in contrast, is usually organized alphabetically by author or source, with each annotation providing a brief summary of the source's content, relevance, and quality.
4. **Length:** A literature review is typically longer than an annotated bibliography, as it involves a more comprehensive analysis and synthesis of the literature. An annotated bibliography, on the other hand, may be shorter and more focused, as it provides a list of sources with brief annotations.

All in all, both literature reviews and annotated bibliographies are important tools for conducting research and synthesizing existing literature on a topic. However, they serve different purposes and require different approaches to writing and organizing the content.

Theme5: *The Research Hypotheses*

1. Meaning of Hypothesis
2. Definitions of Hypothesis
3. Functions of Hypothesis
4. Importance of Hypothesis
5. Types of Hypothesis
6. Characteristics of a Good Hypothesis
7. Formulating and Testing the Hypothesis

1. Meaning of Hypothesis

The word hypothesis consists of two words: Hypo+ thesis = hypothesis

- ‘Hypo’ means tentative or subject to the verification
- ‘Thesis’ means statement about the solution of a problem.

As such, a hypothesis is a tentative statement about the solution of the problem. It offers a solution of the problem that is to be verified. Another meaning of the word hypothesis which is composed of two words:

- ‘Hypo’ means composition of two or more variables which is to be verified.
- ‘Thesis’ means position of these variables in the specific frame of reference.

This is the operational meaning of the term hypothesis. Hypothesis is the composition of some variables which have some specific position or role of the variables i.e., to be verified. It is a proposition about the factual and conceptual elements. Hypothesis is called a leap into a dark. It is a brilliant guess about the solution of a problem (Singh, 2006, p.54).

2. Definitions of Hypothesis

The term hypothesis has been defined in several ways. Some important definitions have been given in the following:

- According to J. E. Greigton

“A hypothesis is a tentative supposition or provisional guess which seems to explain the situation under observation”.

- According to J. W. Best

“A hypothesis a shrewd guess or reference that is formulated and provisionally adopted to explain observed facts or conditions and to guide in further investigation”.

- According to B. W. Tuckman

“A hypothesis is defined as an expectation about events based on generalisation of the assumed relationship between variables”.

- According to M. Verna

“A hypothesis is a theory when stated as a testable proposition formally and clearly and subjected to empirical or experimental verification”

- According to Barr and Scates

“A hypothesis is a statement temporarily accepted as true in the light of what is, at the time, known about a phenomenon, and it is employed as a basis for action in the search for new truth, when the hypothesis is fully established, it may take the form of facts, principles and theories”.

- According to G. J. Mouly

“A hypothesis is an assumption or proposition whose testability is to be tested on the basis of the computability of its implications with empirical evidence with previous knowledge”.

It is important to distinguish between the three terms assumption, postulate, and hypothesis. In brief, the distinction is as follows:

- Assumption: It means taking things for granted so that the situation is simplified for logical procedure.
- Postulate: It is the working belief of most scientific activity. Postulates are not proven; they are simply accepted as they are and at their face value so that their basic work for the discovery of the other facts of nature can begin”.
- Hypothesis: A hypothesis is different from both of these. It is the presumptive statement of a proposition which the researcher seeks to prove .

The following are the main features of a hypothesis:

- It is conceptual in nature.
- It is a verbal statement in declarative form.
- It indicates the tentative relationship between two or more variables.
- It has a future or forward reference.
- It relates to the future verification not to the past facts and information. It is the pivot of a scientific research. All the research activities are design for its verification.
- The nature of hypothesis can be well understood by differentiating it with other terms like assumption and postulate.

3. Functions of Hypothesis

The following are the main functions of hypothesis:

- It is a temporary solution of a problem concerning with some truth which enables a researcher to start his/her research work.
- It may provide possible solutions to the problem.

- Each hypothesis may lead to formulate another hypothesis.
- Each hypothesis provides the researcher with definite statement which may be objectively tested and accepted or rejected and leads for interpreting results and drawing conclusions that is related to the original purpose.

In sum, the functions of a hypothesis may be condensed into the following:

- To delimit the field of research;
- To sensitise the research to have a realistic approach to the problem; and
- To offer the simple means for collecting evidences to the verification

4. Importance of Hypothesis

Research methodologists advocate the importance of hypothesis in the following ways:

- Hypotheses are indispensable in research because they build bridge between the problem and evidence that may solve the problem.
- A hypothesis provides the map that guides and expedites the investigation of the phenomena under consideration.
- The hypothesis directs the researcher's efforts into productive channels.
- The hypothesis may suggest what subjects, tools, and instruments are needed.
- A hypothesis provides the framework for drawing conclusions.

These hypotheses stimulate the researcher for further research studies.

1. The hypothesis may suggest what subjects, tools, and instruments are needed.
2. A hypothesis provides the framework for drawing conclusions.
3. These hypotheses stimulate the researcher for further research studies.

5. Types of Hypothesis

There are four kinds of hypotheses. These are: (1) Question (2) Declaration statement, (3) Directional statement, (4) Null form or non-directional.

1. Question form Hypotheses: Some writers assert that the hypothesis may be stated as a question. However, there is no consensus on this view.
2. Declarative Statement: A hypothesis may be developed as a declarative which can provide an anticipated relationship between variables or differences between variables.
3. Directional Hypothesis: A hypothesis may be directional which connotes an expected direction in the relationship or difference between variables.
4. Non-directional hypothesis: A hypothesis may be stated in the null form which is an assertion that no difference exists between or among the variables.

6. Characteristics of a Good Hypothesis

A good hypothesis must possess the following characteristics:

- A good hypothesis is in agreement with the observed facts.
- A good hypothesis does not conflict with any law of nature which is known to be true.
- A good hypothesis is stated in the simplest possible terms.
- A good hypothesis permits the application of deductive reasoning.
- A good hypothesis ensures that the methods of verification are under control of the researcher.
- A good hypothesis guarantees that the available tools and techniques will be effectively
- used for the purpose of verification.
- A good hypothesis ensures that the sample is readily approachable.
- A good hypothesis indicates clearly the role of different variables involved in the study.
- A good hypothesis maintains a very apparent distinction with what is called theory, law, facts, assumptions, and postulate.

7. Formulating and Testing a Hypothesis

To formulate a hypothesis, researchers use induction and deduction. Hypothesis construction enables researchers to generalise their findings beyond the specific conditions which they have obtained. Since a hypothesis is a formulation of anticipated findings, researchers are advised to develop a hypothesis as a means of demonstrating the basis for their study to themselves and their audience. The task of introducing a study and discussing the findings are facilitated by the existence of a hypothesis.

The evidence of the work of hypothesis lies in its abilities to meet test of its validity. The purpose of testing a hypothesis is to determine the probability that it is supported by fact. Because a hypothesis is a general expectation about the relationship between variables, there is an extremely large number of instances under which it can be tested, and it would be impractical to attempt to gain support in all of these instances. A hypothesis is never proved. It is merely sustained or rejected. If it fails to meet the test of its validity, it must be modified or rejected. The confirmation of a hypothesis, on the other hand, is always, a tentative and relative, subject to later revision and even rejection as further evidence appears or more adequate hypotheses are introduced.

Theme 6: *Research Design*

A research design can be defined as the preparation of conditions, for the collection and analysis of data in such a manner, which aims at combining relevance to the research purpose with economy in procedure. In other words, the design arrangement of a research project is commonly known as the “research design”. Besides, the decisions like what, where, when, how, etc., in regard to a research study, creates a research design.

Research design refers to the overall plan or strategy for conducting a research study. It involves making decisions about the research question, hypotheses, variables, data collection methods, and data analysis techniques. The research design is a crucial aspect of any research study, as it determines the quality and reliability of the results.

A research design can be qualitative, quantitative, or mixed methods. Qualitative research design involves collecting data through observations, interviews, or open-ended surveys, and analyzing the data for themes, patterns, or meanings. Quantitative research design involves collecting numerical data through surveys, experiments, or statistical analysis, and using statistical methods to analyze the data. Mixed methods research design involves combining both qualitative and quantitative data collection and analysis methods to provide a more comprehensive understanding of the research topic.

A research design should be developed based on the research question, the nature of the data, and the intended use of the results. A good research design should be clear, concise, and systematic, with a well-defined sampling strategy, appropriate data collection methods, and reliable data analysis techniques. It should also be ethical and considerate of the rights and privacy of research participants.

In fact, the research design is the conceptual structure within which a research is conducted. Moreover, it comprises the outline for the collection, measurement and analysis of data. Hence, the design carries a blueprint of what the researcher will do, from composing the hypothesis and its operational implications to the final analysis of data. Overtly, the design decisions happen to be in respect of:

- 1) What is the research?
- 2) Where and why will the research be conducted?
- 3) What data is required for the research?
- 4) Where can be the data found?
- 5) What will be the time period of the research?
- 6) What will be the sample design?
- 7) What methods will be used for data collection?
- 8) How will be the data analysed?
- 9) In which style will be the research report prepared?

Based on the above-mentioned design decisions, the complete research design may be divided into the following parts:

(a) Sample design: this deals with the technique of selecting items and thus requires careful observation for the given research study.

(b) Observational design: this relates to the conditions under which the experiments are to be conducted.

(c) Statistical design: this concerns the question of how many items are to be observed, and how are the collected data and information going to be analysed.

(d) Operational design: this deals with the methods by which the procedures specified in the sample, observational and statistical designs can be conducted. The essential characteristics of a research design are as the following:

(a) It is a plan, which specifies the sources and types of data relevant to the research problem.

(b) It is a strategy, which decides the approach that will be used to collect and analyse the data.

(c) Since most of the research studies are conducted under these two controls, it also includes the time and cost budgets. In short, the research design must contain the following:

- A clear and concise statement of the research problem,
- The population to be studied, and
- The various procedures, methods, and techniques to be used for collecting and analyzing the data.

Need for Research Design:

Research design has a significant impact on the reliability of the results obtained. It thus acts as a firm foundation for the entire research. It is needed because it facilitates the smooth functioning of the various research operations. It makes the research as efficient as possible by giving maximum information with minimal expenditure of effort, time and money. For construction of a house, we need to have a proper blueprint prepared by an expert architect.

Similarly, we need a proper research design or plan prior to data collection and analysis of our research project. Preparation of research design should be done carefully as even a minute error might ruin the purpose of the entire project. The design helps the researcher to organize his ideas, which helps to identify and correct his flaws, if any. In a good research design, all the components with each other or go together with each other in a coherent manner. The theoretical and conceptual framework must with the research goals and purposes. Likewise, the data collection strategy must fit with the research purposes, conceptual and theoretical framework and approach to data analysis. The need for research design is as follows:

- It reduces inaccuracy;
- Helps to get maximum efficiency and reliability;
- Eliminates bias and marginal errors;
- Minimizes wastage of time;
- Helpful for collecting research materials;
- Helpful for testing of hypothesis;
- Gives an idea regarding the type of resources required in terms of money, manpower, time, and efforts;
- Provides an overview to other experts;
- Guides the research in the right direction.

Features of a Good Research Design:

When a researcher has formulated a research problem, he/she has to focus on developing a good design for solving the problem. A good design is one that minimizes bias and maximizes the reliability of the data. It also yields maximum information, gives minimum experimental error, and provides different aspects of a single problem. A research design depends on the purpose and nature of the research problem. Thus, one single design cannot be used to solve all types of research problem, i.e., a particular design is suitable for a particular problem. A research design usually consists of the following factors:

- The means of obtaining information;
- The availability and skills of the researcher and his staff, if any;
- The objective of the problem to be studied;
- The nature of the problem; and
- The availability of time and money for the research work.

If a research study is an exploratory or formulative one, i.e., it focuses on discovery of ideas and insights, the research design should be flexible enough to consider different aspects of the study. Similarly, if the study focuses on accurate description or association between variables, the design should be accurate with minimum bias and maximum reliability. However, in practice, it is difficult to categorize a particular study into a particular group. A study can be categorized only on the basis of its primary function and accordingly, its design can be developed. Moreover, the above-mentioned factors must be given due weight age while working on the details of the research design.

Theme7: *The Research Approach*

1. The Philosophical Background
2. The Qualitative Approach
3. The Quantitative Approach
4. The Mixed-Methods Approach
5. Criteria for Selecting a Research Approach

1. The Philosophical Background

Research approaches are plans and procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. This plan involves special decisions. The overall decision involves which approach should be used to study a given topic. Informing this decision should have philosophical assumptions that the researcher brings to the study. These assumptions are a basic set of beliefs that guide action. In other contexts, such assumptions have been called paradigms: epistemology and ontologies, or broadly conceived research methodologies. These basic philosophical assumptions arise based on discipline orientations, students' advisors, students' inclination, and past research experiences. The types of beliefs held by individual researchers based on these factors will often lead to embracing a particular type of approach in this research.

- **Post-positivism Paradigm**

The post-positivist assumptions have represented the traditional form of research, and these assumptions hold true more for qualitative research than quantitative research. This world-view is sometimes called the 'scientific method', or 'doing-scientific research'. Post-positivists hold a deterministic philosophy in which causes (probably) determine effects of outcomes. Thus, the problems studied by post-positivists reflect the need to identify and assess the causes that influence outcomes such as found in experiments.

- **The constructivist Paradigm**

The constructivist assumptions believe that individuals seek understanding of the world in which they live and work. Individuals develop subjective meanings of their experiences. These meanings are varied and multiple, leading the researcher to look for complexity of views rather than narrowing meaning into a few categories or ideas. The role of the research is to rely as much as possible on the participants' views of the situation being studied.

- **The Transformative Paradigm**

The transformative assumptions hold that research inquiry needs to be interfered with politics and political change agenda to confront social oppression at whatever level it occurs. Thus, the research contains an action agenda for reform that may change lives of participants, the institutions in which individuals work or live, and the researcher's life.

- **The Pragmatic Paradigm**

The pragmatic assumptions arise out of actions, situations, and consequences rather than antecedent conditions (as in post-positivism). There is a concern with applications and solutions to problems. Instead of focusing on methods, researchers emphasise on the research problem, and use all the approaches available to understand the problem. As a philosophical understanding for mixed methods, researchers convey its importance for focusing attention on the research problem in social sciences research, and using pluralistic approaches to derive knowledge about the problem.

2. The Quantitative Approach

Quantitative social research was originated by the progress of the natural sciences in the nineteenth century. Such a progress was set out by social researchers who adopted at that time what was called the 'scientific method' in their investigations. In applied linguistics, a number of researchers pointed out that the period, which went between 1970-1985 saw a significant increase of quantitative research. These researchers also highlighted that also a short time after this period, particularly in the 1990's, a growing sophistication of quantitative studies confirmed the coming of the age quantitative research in applied linguistics.

- **Main Characteristics of Quantitative Research** In below, some characteristic features of quantitative research are stated:

1. Using numbers: It is the most important feature of quantitative research. Naturally, all quantitative researches are centred around numbers.

2. A Prior categorisation: Because the use of numbers already dominates the data collection phase, the work required to specify the categories and values needs to be done prior to the actual study.

3. Variables rather than cases: Quantitative researches are less interested in individuals than in the common features of groups of peoples. That is, quantitative research is centred around the study of variables that capture common features and which are quantified.

4. Statistics and the language statistics: This is the most salient of quantitative research. 5. Standardised procedures to assess objective reality: quantitative researchers have sought to eliminate any individual-based subjectivity.

The procedures were done through standardising research to ensure that these procedures remain stable across researchers and subjects. 6. Quest for generalisability and universal laws: Numbers, variables, standardised procedures, statistics and scientific reasoning are all parts of quantitative quest for fact that are generalizable.

- **Strengths and Weaknesses of Quantitative**

Research Supporters of the quantitative approach usually emphasise that it is systematic, rigorous, focused, and tightly controlled, involving precise measurement, and producing reliable and replicable data that is generalizable to other contexts. Contrarily, the opponents of this approach view that quantitative research as overly simplistic, decontextualized, reductionist in terms of its generalisation and fails to capture the meanings that actors attain to their lives and circumstances.

3. The Qualitative Approach

Qualitative research has been around for about a century in social sciences. Thus, the basic ideas and principles of qualitative research are not now new at all. Rather, in recent years, this research methodology has seen an explosion of texts, reflecting a growing interest in the approach across the disciplines of social sciences. In applied linguistics, there has been an increasing visibility and acceptance of qualitative research since the 1990's. This is related to the growing recognition that almost every aspect of language acquisition and use is determined or significantly shaped by social, cultural, and situational factors. Therefore, qualitative research is ideal for providing insights into such contextual conditions and influences.

- **Main Characteristics of Qualitative Research**

some characteristic features of qualitative research are stated:

1. Emergent research design: The emergent research design means a qualitative research study is kept open and fluid so that it can respond in a flexible way to new details or opinions that may emerge during the process of investigation.
2. The nature of qualitative data: Qualitative research works with a wide range of data, including interviews, documents, and even images.
3. The characteristics of the research setting: Because of the qualitative approach nature that seeks to describe social phenomena as they occur naturally, qualitative research takes place in natural setting, without any attempts to manipulate the situation under study.
4. Insider meaning: Qualitative research is concerned with subjective opinions, experiences, and feelings of individuals. In this respect, the goal of qualitative research is to explore the participants' views of the situation being studied.
5. Small sample size: Qualitative research typically relies on the necessity to use smaller samples of participants.
6. Interpretive analysis: Qualitative research is fundamentally interpretive, which means that the research outcome is ultimately the product of the researcher's subjective interpretation of data.

- **Strengths and Weaknesses of Qualitative Research**

Supporters of this research approach claim that the main advantage of such a methodology is that it has been seen as an effective way of exploring new uncharted areas. Besides, qualitative methods are seen to be very useful for making sense of highly complex situations. That is, the groundedness of qualitative research helps to distinguish real phenomena from intellectual fabrications. As opposed to these merits, the qualitative approach is often criticised on the role played by the researcher in analysing the data. This may have negative impacts on the final results. For the proponents, this approach is not comprehensive since it lacks methodological rigour and appears to be unprincipled and fuzzy. To these, they add the problem of consuming time in that researchers agree on that the processing of qualitative data takes too much time in the analysis process

4. The Mixed-methods Approach

The real breakthrough in combining qualitative and quantitative research occurred in the 1970's. The mixed-method approach was first introduced with the adoption of the concept of 'triangulation' into social sciences. In applied linguistics, over the period between 1995-

2005 applied linguists called on for more engagement in the practice of a mixed-methods approach as the suitable research methodology wherein quantitative and qualitative methods are mixed since such a practice can offer possible solutions for the studied research problems.

Main Characteristics of Mixed-methods Approach

some characteristic features of the mixed-methods research are stated:

1. Expanding the understanding of a complex issue: A mixed-methods approach would broaden the scope of the investigation and enrich the researchers' ability to draw conclusions about the problem under study.
2. Corroborating findings through 'triangulation': The use of different data sources, investigators, theories, or research methods generates multiple perspectives on a phenomenon. Such an effective strategy ensures research validity.
3. Reaching multiple audiences: Because of the combination of the methods in mixed-methods research, the final results can be more palatable for certain audiences than outcomes of a monomethod study.

- **Strengths and Weaknesses of Mixed-methods Approach**

According to research methodologists, several arguments have been put forward about the value of mixed-methods research. This study can bring out the best of qualitative and quantitative researches.

This is further argued by the potential that the strengths of one method can be utilised to overcome the weaknesses of another method used in the study. In addition, a mixed-methods research has a potential to produce evidence for the validity of research outcomes through the convergence and corroboration of the findings. Contrarily, some proponents view that one cannot help wondering whether there is really a principled approach to guiding the variety of combinations so that we do not end up with a deficient research approach (Dörnyei, 2007).

5. Criteria for Selecting a Research Approach

Selecting a research approach is an important step in any research project. The choice of approach will depend on various factors, including the research question, the research design, the type of data that will be collected, and the resources available. Here are five criteria for selecting a research approach :

1. **Research question:** The research question should be the starting point for selecting a research approach. Different research questions require different approaches, and the approach should be chosen based on the nature of the question. For example, if the research question involves understanding people's attitudes or experiences, a qualitative approach may be more appropriate than a quantitative approach.
2. **Research design:** The research design will also influence the choice of research approach. Different research designs, such as experimental, quasi-experimental, and observational studies, require different approaches to data collection and analysis.
3. **Type of data:** The type of data that will be collected is another important factor to consider when selecting a research approach. Qualitative data, such as interviews and focus groups, require a different approach than quantitative data, such as surveys and experiments.
4. **Resources:** The resources available, such as time, funding, and personnel, will also influence the choice of research approach. Some approaches may require more resources than others, and the researcher should choose an approach that is feasible given the available resources.
5. **Researcher's expertise:** Finally, the researcher's expertise and experience should also be considered when selecting a research approach. If the researcher is more familiar with qualitative methods, it may be more appropriate to use a qualitative approach even if the research question could be addressed with a quantitative approach. Conversely, if the researcher has more experience with quantitative methods, a quantitative approach may be more appropriate.

Theme 8: *The Research Method*

1.Descriptive vs. Analytical Methods

2.Applied vs. Fundamental Methods

3.Conceptual vs. Empirical

4. Research Methods vs. Research Methodology

5.Research vs. Scientific Method

The basic types of research are as follows:

1. Descriptive vs. Analytical:

Descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite often use Research Methodology: An Introduction 3 the term Ex post facto research for descriptive research studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. Most ex post facto research projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, frequency of shopping, preferences of people, or similar data. Ex post facto studies also include attempts by researchers to discover causes even when they cannot control the variables. The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and correlational methods. In analytical research, on the other hand, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

2. Applied vs. Fundamental:

Research can either be applied (or action) research or fundamental (to basic or pure) research. Applied research aims at finding a solution for an immediate problem facing a society or an industrial/business organisation, whereas fundamental research is mainly concerned with generalisations and with the formulation of a theory. “Gathering knowledge for knowledge’s sake is termed ‘pure’ or ‘basic’ research.”⁴ Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. Similarly, research studies, concerning human behaviour carried on with a view to make generalisations about human

behaviour, are also examples of fundamental research, but research aimed at certain conclusions (say, a solution) facing a concrete social or business problem is an example of applied research. Research to identify social, economic or political trends that may affect a particular institution or the copy research (research to find out whether certain communications will be read and understood) or the marketing research or evaluation research are examples of applied research. Thus, the central aim of applied research is to discover a solution for some pressing practical problem, whereas basic research is directed towards finding information that has a broad base of applications and thus, adds to the already existing organized body of scientific knowledge.

3. Conceptual vs. Empirical:

Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones. On the other hand, empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research, coming up with conclusions which are capable of being verified by observation or experiment. We can also call it as experimental type of research. In such research it is necessary to get at facts firsthand, at their source, and actively to go about doing certain things to stimulate the production of desired information. In such research, the researcher must first provide himself with a working hypothesis or guess as to the probable results. He then works to get enough facts (data) to prove or disprove his hypothesis. He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information. Such research is thus characterised by the experimenter's control over the variables under study and his deliberate manipulation of one of them to study its effects. Empirical research is appropriate when proof is sought that certain variables affect other variables in some way. Evidence gathered through experiments or empirical studies is today considered to be the most powerful support possible for a given hypothesis. (v) Some Other Types of Research: All other types of research are variations of one or more of the above stated approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basis of some other similar factor. From the point of view of time, we can think of research either as one-time research or longitudinal research. In the former case the research is confined to a single time-period, whereas in the latter case the research is carried on over several time-periods. Research can be field-setting research or laboratory research or simulation research, depending upon the environment in which it is to be carried out. Research can as well

be understood as clinical or diagnostic research. Such research follows case-study methods or in-depth approaches to reach the basic causal relations. Such studies usually go deep into the causes of things or events that interest us, using very small samples and very deep probing data gathering devices. The research may be exploratory or it may be formalized. The objective of exploratory research is the development of hypotheses rather than their testing, whereas formalized research studies are those with substantial structure and with specific hypotheses to be tested. Historical research is that which utilizes historical sources like documents, remains, etc. to study events or ideas of the past, including the philosophy of persons and groups at any remote point of time. Research can also be classified as conclusion-oriented and decision-oriented. While doing conclusion oriented research, a researcher is free to pick up a problem, redesign the enquiry as he proceeds and is prepared to conceptualize as he wishes. Decision-oriented research is always for the need of a decision maker and the researcher in this case is not free to embark upon research according to his own inclination. Operations research is an example of decision-oriented research since it is a scientific method of providing executive departments with a quantitative basis for decisions regarding operations under their control.

4.Relationship between Methodology and Method

Methodology is the general research strategy that outlines the way in which a research project is to be undertaken and, among other things, identifies the methods to be used in it. These Methods, described in the methodology, define the means or modes of data collection or, sometimes, how a specific result is to be calculated. Methodology does not define specific methods, even though much attention is given to the nature and kinds of processes to be followed in a particular procedure or to attain an objective. (Howell,2013)

Any description of a means of calculation of a specific result is always a description of a method, and never a description of a methodology (Katsicas,2009,). It is thus important to avoid using methodology as a synonym for method or body of methods. Doing this shifts it away from its true epistemological meaning and reduces it to being the procedure itself, the set of tools or the instruments that should have been its outcome. A methodology is the design process for carrying out research or the development of a procedure and is not in itself an instrument, or method, or procedure for doing things. Methodology and method are not interchangeable but, in recent years, there has been a tendency to use methodology as a "pretentious substitute for the word method". Using methodology as a synonym for method or set of methods, leads to

confusion and misinterpretation, and undermines the proper analysis that should go into designing the research

5. Research vs. Scientific Method

5. Research and the Scientific Method

Research and the scientific method are closely connected concepts. To understand the meaning of research clearly, it is necessary to understand the role of the scientific method. Research may be defined as a systematic inquiry into the nature, causes, relationships, and consequences of a particular phenomenon or set of circumstances. These circumstances may be controlled experimentally, as in laboratory research, or observed as they naturally occur, as in surveys, field studies, or descriptive investigations.

However, research is not limited to collecting facts or producing isolated results. A true researcher is not interested only in one particular finding; rather, he or she is concerned with whether the results can be verified, repeated, generalized, and extended to broader or more complex situations. In this sense, research seeks not only to answer a specific question, but also to contribute to reliable and cumulative knowledge.

The scientific method represents the general philosophy that guides all research methods and techniques. Although research procedures may differ from one discipline to another, the scientific method provides a common logical foundation for all forms of scientific inquiry. It is based on observation, classification, comparison, experimentation, interpretation, and verification. Karl Pearson emphasized this unity when he argued that the scientific method is essentially the same across all branches of science. According to this view, the unity of science lies not in its subject matter, but in its method. A person who classifies facts, examines their relationships, and explains their sequence is applying the scientific method.

The scientific method can therefore be understood as the disciplined pursuit of truth through logical and objective procedures. Its main aim is to establish a systematic relationship among facts. It attempts to achieve this aim through observation, experimentation, logical reasoning, and the careful testing of assumptions. Logic plays an essential role in this process because it helps the researcher formulate clear propositions, identify possible alternatives, and examine the consequences of each alternative. When these alternatives are compared with observable facts, the researcher can determine which explanation is most consistent with reality.

Experimentation and survey investigation are among the most important procedures of the scientific method. Experiments are generally used to test hypotheses and discover relationships

between variables. However, conclusions based on experimental data must be treated with caution. They may be weakened by faulty assumptions, poor experimental design, incorrect execution, or inaccurate interpretation. For this reason, the researcher must carefully design the experiment, control relevant variables, and present conclusions as probable rather than absolute. Survey investigations also form an important part of scientific research. They are used to collect data from individuals, groups, or communities in order to describe attitudes, behaviors, opinions, or social conditions. The purpose of a survey is to provide scientifically gathered information that can serve as a basis for analysis, interpretation, and conclusion. Like experiments, surveys must be carefully planned to ensure validity, reliability, and objectivity. The scientific method is based on several fundamental principles. First, it relies on empirical evidence, meaning that conclusions must be based on observable and verifiable facts. Second, it uses relevant concepts that help organize and explain the subject under investigation. Third, it is committed to objectivity, meaning that the researcher should avoid personal bias, prejudice, or emotional judgment. Fourth, it presupposes ethical neutrality, as its primary aim is to make accurate and adequate statements about the phenomenon under study. Fifth, it often produces probabilistic predictions rather than absolute certainties, because social and natural phenomena are usually influenced by many variables.

In addition, the scientific method requires transparency. The methodology used in a study should be clearly explained so that other researchers can examine it, criticize it, and replicate the study if necessary. This openness allows scientific conclusions to be tested and strengthened through repetition. Finally, the scientific method aims to formulate general principles, laws, or theories that explain broader patterns beyond individual cases.

Thus, the scientific method encourages a rigorous, impersonal, logical, and systematic mode of inquiry. It requires the researcher to proceed in an orderly manner, guided by evidence and reason rather than personal opinion. It also demands internal consistency, clarity of concepts, accuracy of observation, and openness to verification. Therefore, research becomes scientific only when it follows objective procedures, uses logical reasoning, relies on empirical evidence, and produces conclusions that can be critically examined and tested by others.

Research becomes scientific when curiosity is disciplined by method, evidence is guided by logic, and conclusions remain open to verification, criticism, and replication.

Theme9: *The Research Strategies*

1. What are the Research Strategies?
 2. Case Studies
 3. Experiments
 4. Ethnography
 5. Phenomenology
 6. Ground Theory (GT)
 7. Action Research
 8. Mixed-methods
 9. Longitudinal

1.A research strategy

It is an overall plan for conducting a research study. A research strategy guides a researcher in planning, executing, and monitoring the study. While the research strategy provides useful support on a high level, it needs to be complemented with research methods that can guide the research work on a more detailed level.

Research methods tell the researcher how to collect and analyse data, e.g. through interviews, questionnaires, or statistical methods. Thus, a research strategy offers high-level guidance, while a research method can be seen as a technique or tool for performing a specific task. As a number of different research strategies exist, a researcher to embark on a study needs to determine which one of these to choose. The choice depends on the goals and characteristics of the study being undertaken, and it is possible to identify three main questions for choosing an appropriate strategy:

- Is it suitable with respect to the research question?
- Is it feasible, taking into account the resources of the research project?
- Is it ethical, taking into account its possible effects on people, animals, and the environment?

A research strategy should be suitable for its purpose, i.e. it should be able to help the researcher to find an answer to the research question under consideration. For example, an experiment can be helpful for identifying the cause of some event, but is probably less suitable for exploring an unknown topic. It may be the other way around for grounded theory. Similarly, a case study can be the right choice for investigating complex social relationships in a specific setting, while it is probably inappropriate for measuring attitudes in a large population.

- **Research Strategies :**

- **Case Study** Some research methodologists define a case study as the following:

- ‘It is a specific instance that is frequently, designed to illustrate more general principle’ (Nisbet, Walt, 1984).
- ‘It is the study of an instance in action’ (Adelman et al., 1980).
- ‘It provides a unique example of actual people in actual situations, enabling readers to understand ideas more clearly than simply by presenting them with abstract theories or principles’(Cohen et el., 2005).
- ‘It is a strategy of inquiry of which the researcher explores in-depth one- or more individual programs, or processes, or event, or activity’ (Creswell, 2009).
- The main benefit of a case study then is that the form is one or few instances that usually allow the researcher to deal with the subtleties and intricacies of complex, social situations (Hoadjli, 2015).

- **Experiments** A set of research methodologists define an experiment as the following:

- ‘It is to isolate individual factors and observe their effects in detail. The purpose is to find out new relationships and properties associated with the subject being integrated, or to test the existing theories’ (Denscombe,2010).
- ‘The point of experiment is to see how far a person will proceed in a concrete and measurable situation in which he is in order to inflict increasing pain on a protesting victim. At what point the subject refuses to obey the experiment?’ (Milgram, 1994). In social sciences, the use of an experiment would appear to be restricted to those situations where it is possible to manipulate situation and impose control on crucial variables. To overcome this deficiency, some social scientists have turned to what they call the ‘Quasi-experimental’ Method as a more appropriate research strategy. For many methodologists, the quasi-experiment method relaxes the probabilistic and population distinction imposed by the other types of research methodologies,

‘true’ experimental design, by shifting emphasis from "cause-effect" in temporal priority to ‘association’ between variables. The main benefit of a ‘quasi-experiment’ research strategy is that research design is able to employ something approaching true experimental design in which researchers have control over what Campbell and Stanley (1963) refer to as ‘the when and to whom of measurement’ but lack control over the ‘when and to whom of exposure’ or the randomization of exposures-essential if true experimentation is to take place. Kerlinger (1970) refers to these situations as a ‘compromise design’ – an apt description when applied to much educational research where the random selection of schools and classrooms is impracticable.

➤ **Ethnography** The term ethnography literally means a description of peoples or cultures. It has its origin as a research strategy in the works of the early social anthropologists, whose aim was to provide a detailed and permanent account of the cultures and lives of small, isolated tribes. Ethnography has the following characteristics:

- It requires the researcher to spend considerable time in the field under study.
- It requires the researcher gives special attention to the way the people being studied see the world.
- There is an acknowledgement that ethnographers’ final account of the group being studied is more than just description.

The main benefits of ethnography are as the following:

- It is a research strategy based on direct observation.
- It provides rich and wealthy data.
- It aspires holistic explanations which focus on process and relationships that lie behind the surface events.
- It has an open and explicit awareness of the role of the researcher in the investigation (Denscombe, 2010).

➤ **Phenomenology**

Phenomenology is not primarily concerned with explaining the causes of things, but tries, instead, to provide a description of how things are experienced at first hand by those involved.

The phenomenological research generally deals with:

- People’s perceptions of meaning;
- People’s attitudes and beliefs; and
- People’s feelings and emotions.

Phenomenology is concerned with matters, such as:

- The explanation of human experience;
- The description of everyday world;
- Seeing things through the eyes of others; and
- Reflecting multiple realities.

In sum, phenomenological research should involve a detailed description of the experience that is being investigated- one that does not gloss over the complexities and contradictions that inhabit real life.

The main benefits of phenomenology are examples as:

- It suits to small-scale research.
- It describes experiences in a way that is immediately accessible and interesting to a wide range of readers.
- It offers the prospects of authentic accounts of complex phenomena.
- It is a humanistic style of research.

➤ **Grounded Theory (GT)**

GT is a research strategy dedicated to generating theories. In this sense, it contrasts with approaches concerned with testing theories, and is different from researches whose main purpose is to provide descriptive accounts of the subject matter. It is a research strategy that emphasises the importance of empirical fieldwork and the need to link any explanations very closely to what happens in practical situations in the ‘real world’. It is different, here, from approaches that are thought up in the abstract as a neat system of ideas, and then afterwards checked to see if they work in reality.

This research strategy is well suited to the needs of four kinds of research:

1. Qualitative research
2. Exploratory research
3. Studies of human interaction
4. Small-scale research

In practice, this research strategy has not a particular method of data collection. However, in general, Grounded Theory lends itself to be better used in the collection of data in ‘raw state’.

In this respect, it is more appropriate to be employed to produce unstructured data through:

- Unstructured interviews;
- Open-ended questions; and

- Field-notes based on observations.

The main benefits of Grounded Theory are examples, such as:

- It is suitable to small-scale research;
- It recognises rationale for qualitative research;
- It is adaptable;
- It is a systematic way for analysing data;
- It is meant for developing theoretical propositions from data;
- It is based on explanations that are grounded in reality; and
- It is well-suited to the exploratory research

➤ **Action Research**

Action research is a research strategy based on with practical issues. These practical issues are about problem, concerns, and needs that arise as a routine part of activity in the ‘real world’. This specifically practical orientation has remained a defining characteristic of an Action Research. In particular, Action Research as a research strategy has the following characteristics:

- It is aimed at dealing with the real-world problems and issues;
- It regards change as an integral part of research;
- It is concerned with active participants, not passive ones.

In terms of data collection methods, action research uses different techniques to collect information. Action researchers generally prefer questionnaires for such purposes. They may also retrieve data from the records, memos, and reports that the investigated content routinely produced. The benefits of Action Research as research strategy are examples as:

- It involves participation in the research for practitioners.
- It contributes to professional self-development.
- It is geared to improving practice and resolving problems

➤ **Mixed-methods Mixed**

Methods refer to a research strategy that crosses the boundaries of conventional paradigms of research by deliberately combining methods drawn from different traditions with different underlying assumptions. At its simplest, a mixed-method strategy uses both qualitative and quantitative methods. In specific terms, a mixed-methods research strategy has three characteristic features. These can be outlined as follows: 1. It uses qualitative and

quantitative approaches within a single research project. 2. It explicit forms on the link between approaches (triangulation). 3. It emphasises on practical approaches to research problems (pragmatism). Drawing on the available literature, researchers use mixed-methods strategies for one or more of the following purposes:

- to improve accuracy;
- to obtain a more complete picture;
- to compensate strengths and weaknesses;
- to develop the analysis; and
- to be used as an aid to sampling. Mixed-methods research strategy has its underpinnings in the philosophical assumptions of pragmatism.

In context of research, pragmatism tends to revolve around the following core ideas:

- Knowledge is based on practical outcomes.
- Research should test what works through empirical enquiry.
- Knowledge is provisional; and
- Traditional dualisms in science are regarded as not helpful.

The main benefits of mixed-method research strategy are examples as:

- It is a more comprehensive account of the thing being researched;
- It provides clearer links between different methods and different kinds of data;
- It emphasises on the rationale for combining different approaches (triangulation); and
- It is a practical, problem-driven approach to research

➤ **Longitudinal research strategy**

It refers to a family of methods that share something in common; information is gathered about the target of the research during a period of time. According to Dörnyei (2002) cited in Hoadjli (2015), longitudinal research in an investigation in which: (a) Data are collected for two or more distinct periods; (b) The subject or cases analysed are the same or comparable from one period to the next; and (c) The analysis involves some comparison of data between the periods (p.78). A longitudinal design, considering the above assumptions, would permit the measurement of differences or change in a variable from one period to another. In terms of types, there are as many as four types of longitudinal design. These are:

1. Prospective longitudinal studies;
2. Repeated cross-sectional studies;
3. Retrospective studies; and

4. Simultaneous cross-sectional studies. For research methodologies, longitudinal research strategy is advantageous because:

- It allows the researchers to collect information about change at the micro-level;
- It enables the researchers to save money and time; and
- It aids the researchers to gain data about changes across age groups

Theme 10: *Data Collection Tools*

1. Observation
2. Questionnaires
3. Interviews
4. Focus Groups

There are many data collection tools available depending on the type of data you want to collect and the method of collection you prefer. Here are some commonly used data collection tools:

1. Surveys and questionnaires - these can be conducted in person, over the phone, or online and are useful for collecting information from a large number of people.
2. Interviews - these can be conducted in person, over the phone, or online and allow for more in-depth information to be gathered.
3. Focus groups - these are small groups of people who discuss a particular topic or issue and can provide valuable insights into opinions and attitudes.
4. Observations - this involves watching and recording people's behaviors and actions in a particular setting.
5. Case studies - this involves in-depth analysis of a particular individual, group, or organization to understand a specific phenomenon or problem.
6. Experiments - this involves manipulating variables to understand cause and effect relationships.
7. Social media monitoring - this involves analyzing data from social media platforms to understand trends and opinions.
8. Web analytics - this involves analyzing website data to understand user behavior and improve website performance.
- 9.

There are many other data collection tools available, and the choice of tool will depend on the specific research question and the resources available.

1.Interviews: Interviews are probably the most common tool used in planning, monitoring and evaluation. They can be carried out with one person at a time (individual interviews) or groups of people. They can be administered formally or informally. They can be carried out face-to-face or through remote media such as telephone and Skype. Interviews can also be conducted

through written questions via letters or email. Interviews may be structured, semi-structured or open-ended. Structured interviews are based around a core set of questions that are always asked in the same order. Semi-structured interviews also contain a core set of questions, but allow the interviewer to ask supplementary questions, or change the order in which questions are asked.

2.Focus group discussions: Focus group discussions (FGDs) are facilitated discussions, held with a small group of people who have specialist knowledge or interest in a particular topic. They are used to find out the perceptions and attitudes of a defined group of people. FGDs are typically carried out with around 6-12 people, and are based around a short list of guiding questions, designed to probe for in-depth information. FGDs are often used to solicit the views of those who would not be willing or able to speak up at larger group meetings. They may also be used to access the views of minority or disadvantaged groups, such as women, children or people with disabilities.

3.Observation: At its most simple, observation involves ‘seeing’ things – such as objects, processes, relationships, events – and formally recording the information. There are different types of observation. Structured or direct observation is a process in which observations are recorded against an agreed checklist. Expert observation is usually carried out by someone with specific expertise in an area of work, and involves the expert observing and recording information on a subject. Observation may also be carried out as a participatory exercise. Where this is the case the intended beneficiaries of a project or programme are involved in planning an observation exercise, observing, and discussing findings.

4.Photography and video: Photographs and videos show still or moving images. Photographs can be used on their own, but are more often accompanied by written captions, providing additional information. Videos are often accompanied by a commentary. The use of photography and video has become increasingly common within M&E over recent years. This is partly because of improvements in mobile phone technology, which has increasingly enabled people to produce cheap, high quality audio-visual products.

5. Case studies and stories of change: A case study is not a data collection tool in itself. It is a descriptive piece of work that can provide in-depth information on a topic. It is often based on information acquired through one or more of the other tools described in this paper, such as interviews or observation. Case studies are usually written, but can also be presented as photographs, films or videos. Case studies often focus on people (individuals, households, communities). But they can also focus on any other unit of analysis such as locations, organisations, policies or the environment. Stories of change are similar to case studies. However, they have a specific focus on change, and are only usually developed after a project or programme has started.

6. Surveys and questionnaires: These are designed to collect and record information from many people, groups or organisations in a consistent way. A questionnaire is a form containing questions. It may be a printed form or one designed to be filled in online. Questionnaires may be administered in many different ways. A survey, by contrast, is normally a large, formal exercise. It typically consists of three different aspects: an approved sampling method designed to ensure the survey is representative of a wider population; a standard questionnaire that ensures information is collected and recorded consistently; and a set of analysis methods that allow results and findings to be generated. An additional set of tools comes under the heading of community participatory tools. This includes exercises such as mapping, ranking, timelines, calendars and diagrams. These can be used as tools for collecting data from community level, and are often included as basic tools in M&E exercises. However, they are more properly used as participatory methods of data collection and analysis that also allow communities to analyse their own situation and make their own decisions. This set of tools is included in the M&E Universe paper on Participatory Learning and Action (PLA).

Related Questions:

1. *Briefly describe the different steps involved in a research process.*
2. *What do you mean by research? Explain its significance in modern times.*
3. *Distinguish between Research methods and Research methodology.*
4. *Describe the different types of research, clearly pointing out the difference between an experiment and a survey.*
5. *Write short notes on: (1) Design of the research project; (2) Ex post facto research; (3) Motivation in research; (4) Objectives of research; (5) Criteria of good research; (7) Research and scientific method.*
6. *“Empirical research in India in particular creates so many problems for the researchers”. State the problems that are usually faced by such researchers. (Raj. Univ. EAFM., M. Phil. Exam., 1979)*
7. *“A research scholar has to work as a judge and derive the truth and not as a pleader who is only eager to prove his case in favour of his plaintiff.” Discuss the statement pointing out the objectives of research. Research Methodology: An Introduction 23*
8. *“Creative management, whether in public administration or private industry, depends on methods of inquiry that maintain objectivity, clarity, accuracy and consistency”. Discuss this statement and examine the significance of research”. (Raj. Univ. EAFM., M. Phil. Exam., 1978)*
9. *“Research is much concerned with proper fact finding, analysis and evaluation.” Do you agree with this statement? Give reasons in support of your answer.*
10. *It is often said that there is not a proper link between some of the activities under way in the world of academics and in most business in our country. Account for this state of affairs and give suggestions for improvement.*
11. *Define the term “literature review” and what is its significance?*

Summary and Some Handouts for the Students

Summary

Reviewing the Literature

Definition

A literature review discusses published information in a particular subject area, and sometimes information in a particular subject area within a certain time period. A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis. A summary is a recap of the important information of the source, but a synthesis is a re-organization, or a reshuffling, of that information. It might give a new interpretation of old material or combine new with old interpretations. Or it might trace the intellectual progression of the field, including major debates. And depending on the situation, the literature review may evaluate the sources and advise the reader on the most pertinent or relevant.

A literature review is a survey of scholarly sources that provides an overview of a particular topic. Literature reviews are a collection of the most relevant and significant publications regarding that topic in order to provide a comprehensive look at what has been said on the topic and by whom. The basic components of a literature review include:

- a description of the publication;
- a summary of the publication's main points;
- a discussion of gaps in research;
- an evaluation of the publication's contribution to the topic.

What is the difference between a literature review and an annotated bibliography?

An annotated bibliography is a list of your references with a summary of the content and the publication's relationship to your research question. A literature review is an overview of the, topic, an explanation of how publications differ from one another, and an examination of how each publication contributes to the discussion and understanding of the topic.

What is the purpose of a literature review?

The purpose of a literature review is to provide a review of writings on the given topic in order to establish the reviewer's own position in the existing field of scholarship on that topic. A

literature review provides a reader with a comprehensive look at previous discussions prior to the one the reviewer will be making in his/her own research paper, thesis, or dissertation. In short, a literature review shows readers where the reviewer is entering the academic conversation on a particular topic in the context of existing scholarship.

How do I create a literature review?

The length and depth of your literature review depends on the length of your project. If you are writing a 10-page argument paper, you may have room to include 5-6 sources to review, because you will also be establishing your argument as well, but there's no hard equation for how many or how much. Use your judgment and most importantly, consult your instructor about expectations.

Here is a step-by-step approach to drafting your literature review:

1. Define Your Goal

If you are writing an argument paper, create a thesis statement with a clear position. If you are evaluating scientific theories, develop a hypothesis to examine. If you are providing a self-contained review of writings on a topic, state your project's purpose. At the beginning of any paper, define your paper's purpose so that the literature review will be anchored to a specific point of view.

2. Do Your Research

Review a number of texts that most closely pertain to your topic and position, and are written by relevant scholars. Understand who the top voices are in your topic's academic field, and be sure to include the most pertinent publications by those scholars.

3. Ground Summary in Relevance

As you summarize each publication, provide the context for that publication's importance by tying its main points to your thesis, hypothesis, or project statement. How does it relate? Establish its relevance to the discussion.

4. Develop Review Logically

Think of your literature review as a development of an argument—what were the earliest ideas on the topic and how did they grow and evolve in the academic conversation of these publications? First things first.

5. Include References/Works Cited List

As you are writing the literature review you will mention the author names and the publication years in your text, but you will still need to compile comprehensive citations for each entry at the end of your review. Follow APA, MLA, or Chicago style guidelines, as your course requires.

Handout 1: What Is Research?

1. Definition of Research

Research is a systematic and organized process of investigating a problem, question, or phenomenon in order to discover new knowledge, verify existing knowledge, or solve a practical problem.

In academic contexts, research must be:

- **Systematic**
- **Objective**
- **Evidence-based**
- **Critical**
- **Ethical**
- **Clearly documented**

2. Main Purposes of Research

Research aims to:

- 1. Explore a new topic or phenomenon.**
- 2. Describe a situation, behavior, or reality.**
- 3. Explain relationships between variables.**
- 4. Compare groups, texts, policies, or practices.**
- 5. Evaluate programs, methods, or interventions.**
- 6. Solve practical or theoretical problems.**

3. Characteristics of Good Research

Good research should be:

- **Clear in its objectives.**
- **Based on a well-defined problem.**

- **Supported by previous studies.**
- **Methodologically sound.**
- **Ethically conducted.**
- **Logically organized.**
- **Open to verification and critique.**

Handout 2: The Research Problem

1. What Is a Research Problem?

A research problem is the central issue, difficulty, gap, contradiction, or question that the researcher wants to investigate.

It answers the question:

What exactly does my study seek to understand, explain, or solve?

2. Sources of a Research Problem

A research problem may come from:

- **Gaps in previous studies.**
- **Contradictions in the literature.**
- **Real-life classroom or professional problems.**
- **Social, legal, educational, or linguistic issues.**
- **New technologies or recent developments.**
- **Personal academic interest.**

3. Characteristics of a Good Research Problem

A good research problem should be:

- **Clear and specific.**

- **Researchable.**
- **Relevant to the field.**
- **Original or meaningful.**
- **Feasible within time and resources.**
- **Supported by literature.**

4. Example

Weak problem:

Students have problems in English.

Improved research problem:

Many first-year EFL students at university experience difficulties in academic writing, particularly in developing coherent argumentative paragraphs. This study investigates the main causes of these difficulties and explores possible pedagogical solutions.

Handout 3: Research Questions and Hypotheses

1. Research Questions

Research questions guide the whole study. They specify what the researcher wants to find out.

A good research question should be:

- **Clear.**
- **Focused.**
- **Answerable.**
- **Related to the research problem.**
- **Suitable for the chosen methodology.**

2. Types of Research Questions

Descriptive question

What are students' attitudes toward using AI tools in academic writing?

Explanatory question

Why do students rely on AI tools when preparing research assignments?

Comparative question

How do Master One and Master Two students differ in their use of AI tools?

Evaluative question

To what extent does AI-assisted feedback improve students' academic writing performance?

3. Hypothesis

A hypothesis is a tentative answer or prediction about the relationship between variables.

Example:

Students who receive AI-assisted feedback will produce more coherent academic essays than those who receive traditional feedback only.

4. Difference Between Research Question and Hypothesis

A research question asks what the study wants to discover.

A hypothesis predicts what the researcher expects to find.

Handout 4: Research Objectives

1. What Are Research Objectives?

Research objectives are clear statements of what the study intends to achieve.

They usually begin with verbs such as:

- **To investigate**
- **To examine**

- **To analyze**
- **To identify**
- **To explore**
- **To evaluate**
- **To compare**
- **To determine**

2. Example

Research title:

The Impact of AI Tools on EFL Students' Academic Writing

Possible objectives:

- 1. To examine students' perceptions of AI tools in academic writing.**
- 2. To identify the main benefits and risks of using AI-generated feedback.**
- 3. To analyze the impact of AI tools on coherence, grammar, and vocabulary.**
- 4. To propose pedagogical recommendations for ethical AI use.**

3. Difference Between Aim and Objectives

The aim is general.

The objectives are specific steps to achieve the aim.

Example:

Aim:

This study aims to investigate the role of AI tools in improving EFL students' academic writing.

Objectives:

- To identify students' attitudes.**
- To analyze writing performance.**
- To propose classroom guidelines.**

Handout 5: Literature Review

1. What Is a Literature Review?

A literature review is a critical discussion of previous studies related to your topic. It is not just a summary. It should analyze, compare, evaluate, and identify gaps.

2. Functions of the Literature Review

The literature review helps the researcher to:

- 1. Understand what has already been studied.**
- 2. Identify gaps in previous research.**
- 3. Avoid repetition.**
- 4. Build a theoretical framework.**
- 5. Justify the importance of the study.**
- 6. Choose suitable methodology.**

3. How to Organize a Literature Review

A literature review can be organized:

- Thematically: by themes or concepts.**
- Chronologically: from older to recent studies.**
- Methodologically: by methods used in previous studies.**
- Theoretically: according to theories or models.**

4. Useful Phrases

Previous studies have shown that...

Several researchers argue that...

However, little attention has been paid to...

This study addresses this gap by...

Unlike previous studies, the present research focuses on...

Handout 6: Research Methodology

1. What Is Research Methodology?

Research methodology refers to the overall plan and logic of the research. It explains how the researcher collects, analyzes, and interprets data.

It answers the question:

How will the study be conducted?

2. Main Components of Methodology

A methodology section usually includes:

- 1. Research approach.**
- 2. Research design.**
- 3. Participants or sample.**
- 4. Data collection tools.**
- 5. Data analysis procedures.**
- 6. Ethical considerations.**
- 7. Validity and reliability.**

3. Research Approaches

Quantitative approach

Uses numbers, statistics, questionnaires, tests, and measurable variables.

Example:

Measuring the effect of digital learning on students' exam scores.

Qualitative approach

Uses words, meanings, interviews, observations, and interpretation.

Example:

Exploring teachers' perceptions of AI use in the classroom.

Mixed-methods approach

Combines quantitative and qualitative methods.

Example:

Using questionnaires and interviews to study students' attitudes toward online learning.

Handout 7: Data Collection Tools

1. Questionnaire

A questionnaire is a set of written questions used to collect data from many participants.

Advantages:

- **Easy to distribute.**
- **Suitable for large samples.**
- **Provides quantifiable data.**

Limitations:

- **Answers may be superficial.**
- **Participants may misunderstand questions.**

2. Interview

An interview is a direct conversation between the researcher and participants.

Advantages:

- **Provides deep and detailed data.**
- **Allows clarification and follow-up questions.**

Limitations:

- **Time-consuming.**
- **Difficult to analyze.**

3. Observation

Observation involves watching and recording behaviors or events.

Advantages:

- **Gives real-life data.**
- **Useful in classroom research.**

Limitations:

- **Observer bias.**
- **Participants may change behavior when observed.**

4. Document Analysis

Document analysis examines written or digital materials such as textbooks, essays, reports, legal texts, or policy documents.

Advantages:

- **Useful for textual and legal research.**
- **Provides authentic data.**

Limitations:

- **Documents may be incomplete or biased.**

Handout 8: Sampling

1. What Is Sampling?

Sampling is the process of selecting a group of participants from a larger population.

Population:

The whole group the researcher is interested in.

Sample:

The selected group that actually participates in the study.

2. Types of Sampling

Random sampling

Every member has an equal chance of being selected.

Convenience sampling

Participants are selected because they are easily available.

Purposive sampling

Participants are selected because they have specific characteristics relevant to the study.

Stratified sampling

The population is divided into groups, then participants are selected from each group.

3. Example

Population:

All Master One English students at the university.

Sample:

40 Master One English students selected to answer a questionnaire.

Handout 9: Validity, Reliability, and Ethics

1. Validity

Validity means that the research tool measures what it is supposed to measure.

Example:

If a questionnaire claims to measure students' motivation, its questions must actually be about motivation.

2. Reliability

Reliability means consistency of results.

Example:

If the same questionnaire is used with similar students in similar conditions, it should produce similar results.

3. Ethical Considerations

Researchers must:

- 1. Respect participants.**
- 2. Obtain informed consent.**
- 3. Protect anonymity.**
- 4. Ensure confidentiality.**
- 5. Avoid harm.**
- 6. Avoid plagiarism.**
- 7. Report results honestly.**

4. Useful Ethical Statement

Participants were informed about the purpose of the study and their right to withdraw at any time. Their responses were kept anonymous and used only for academic purposes.

Handout 10: Structure of a Research Paper or Dissertation

1. Introduction

Includes:

- Background of the study.**

- **Statement of the problem.**
- **Research questions.**
- **Objectives.**
- **Significance of the study.**
- **Scope of the study.**

2. Literature Review

Includes:

- **Key concepts.**
- **Theoretical framework.**
- **Previous studies.**
- **Research gap.**

3. Methodology

Includes:

- **Research design.**
- **Participants.**
- **Data collection tools.**
- **Data analysis.**
- **Ethical considerations.**

4. Results

Presents the findings clearly using:

- **Tables.**
- **Figures.**
- **Percentages.**

- **Themes.**
- **Quotations.**

5. Discussion

Explains the meaning of the results and links them to:

- **Research questions.**
- **Literature review.**
- **Theoretical framework.**

6. Conclusion

Includes:

- **Summary of findings.**
- **Contributions.**
- **Limitations.**
- **Recommendations.**
- **Future research.**

Handout 11: Common Research Mistakes

Students should avoid:

- 1. Choosing a topic that is too broad.**
- 2. Writing unclear research questions.**
- 3. Confusing objectives with questions.**
- 4. Summarizing literature without analysis.**
- 5. Using unreliable sources.**
- 6. Ignoring methodology.**
- 7. Collecting data without clear purpose.**
- 8. Making claims without evidence.**
- 9. Plagiarizing.**
- 10. Presenting results without discussion.**
- 11. Forgetting ethical considerations.**
- 12. Writing a weak conclusion.**

Handout 12: Research Methodology Checklist

Before submitting your proposal or dissertation, check the following:

<i>Item</i>	<i>Yes/No</i>
<i>Is the title clear and specific?</i>	<input type="checkbox"/>
<i>Is the research problem well defined?</i>	<input type="checkbox"/>
<i>Are the research questions clear?</i>	<input type="checkbox"/>
<i>Are the objectives measurable?</i>	<input type="checkbox"/>
<i>Is the literature review critical?</i>	<input type="checkbox"/>
<i>Is the research gap clearly stated?</i>	<input type="checkbox"/>
<i>Is the methodology appropriate?</i>	<input type="checkbox"/>
<i>Are the participants/sample described?</i>	<input type="checkbox"/>
<i>Are the data collection tools justified?</i>	<input type="checkbox"/>
<i>Is the data analysis method explained?</i>	<input type="checkbox"/>
<i>Are ethical issues addressed?</i>	<input type="checkbox"/>
<i>Are references correctly formatted?</i>	<input type="checkbox"/>
<i>Is the language academic and clear?</i>	<input type="checkbox"/>

Short Classroom Activity

Ask students to choose one broad topic and transform it into a researchable topic.

Example:

Broad topic:

Technology in education.

Improved topic:

The impact of AI-assisted feedback on Master One EFL students' academic writing performance at Amar Telidji University.

Then ask them to write:

- 1. One research problem.**
- 2. Two research questions.**
- 3. Three objectives.**
- 4. One suitable methodology.**

References:

- Cohen, L., Lawrence, M., & Morrison, K. (2005). *Research Methods in Education* (5th edition). Oxford: Oxford University Press.
- Dencombes, M. (2010). *The Good Research Guide: For a small-scale social research projects*: Maiden-read: Open University Press.
- Denscombes, M. (2010). *The Good Research Guide: For small-scale social research projects*. Mainde-read: Open University Press.
- Dörnyei, Z. (2007). *Research Methods in Applied Linguistics*. Oxford: Oxford University Press.
- Hoadjli, A. C. (2015). *The Washback Effect of an Alternative Testing Model on Teaching and Learning: An Exploratory study on EFL secondary class in Biskra*. Unpublished Doctoral Thesis, University of Biskra, Algeria.
- Kothari, C. R. (1980). *Research Methodology: Research and techniques*, New Delhi: New Age International Publishers.
- Kothari, C. R. (1990). *Research Methodology: Research and techniques*, New Delhi: New Age International Publishers.
- Kumar, R. (2011). *Research Methodology: A step-by-step guide for beginners* (3rd edition). London, UK: TJ International Ltd, Padstow, Cornwall.
- Leedy, P. D. (1980). *Practical Research: Planning and design*. Washington: Mc Millan Publishing Co., Inc.
- Singh, Y. K. (2006). *Fundamental of Research Methodology and Statistics*. New Delhi. New International (P) Limited, Publishers.
- Singh, Y. K. (2006). *Fundamental of Research Methodology and Statistics*. New Delhi: New international (P) Limited, Publishers.
- Wallinman, N. (2001). *Your Research Project: A step-by-step guide for the first-time researcher*. London: Sage Publications.
- Wallinman, N. (2006). *Your Research Project: A step-by-step guide for the first-time researcher*. London: Sage Publications.