

INTRODUCTION TO RESEARCH AND BASIC CONCEPTS

1.1. What is research?

1. The making of observations, preparing a hypothesis to explain them, testing the hypothesis by experiment, and reaching a conclusion (Calnan, 1984)
2. 'In scientific research, we place special emphasis on **being systematic** and reducing the effects of personal subjectivity and other influencing factors to a minimum. That is, 'research' in a scientific sense is **finding systematic answers to questions**; or, in other words, research is **disciplined enquiry**.' (Dornyei & Ushioda, 2011)
3. Research is a formal, systematic, controlled, empirical, and rigorous process employed to answer questions, gain solutions to problems, and discover new facts.

1.2. Why do research in language and linguistics?

- a) Research helps *linguists* and *language learners* better understand the nature and functions of language and provides them with insights on how languages are learned;
- b) Research helps *language teachers* to revise current and try out new pedagogical approaches and teaching techniques (research-informed language teaching)
- c) Research helps *policymakers* in making informed decisions about language and language education;
- d) Research helps *researchers* evaluate existing knowledge and interact professionally with others involved in their area of interest.

1.3. Stages of research

1-Literature review: thinking and reading about broad areas of interest.

2-Forming the research questions/ hypotheses: after identifying a gap in the literature, the researcher decides on a research question and formulate a hypothesis.

3- Study design: at this stage, the researcher decides on the type of study, the population, context, and data collection tools s/he is going to use to answer the research question.

4-Data collection: employing the designed instruments to collect the required data.

5-Data analysis: making sense of the data by doing statistical analysis with quantitative data or generating and interpreting themes emerging from qualitative data.

6-Results: reporting the findings of the study in a clear and logical sequence without bias. For a better presentation of results, this stage often includes the reporting of graphs and charts that visualize the results in a simple and accessible style for the reader.

7-Discussion and conclusion: interpreting and discussing the findings in relation to the findings of the research literature. This is simply done by answering the following questions: What have you found and how does this relate to the other work you told us about at the start? And has your study changed what we might think about something, has it built on previous knowledge?

8-Limitations and Implications: this section answers the following questions: what are the limitations that faced the study? what are the lessons learned from the study? and how can we apply those lessons to language teaching and learning?

1.4. Basic concepts

1.4.1. LITERATURE REVIEW

Simply defined, a literature review is a summary and a critical evaluation of the studies relevant to the research problem being investigated. It is usually written as a separate chapter at the start of the thesis. A good literature review doesn't just summarize sources – it analyzes, synthesizes, and critically evaluates to give a clear picture of the state of knowledge on the subject.

- **What is the purpose of a literature review?**

- a) Clearly define the variables and the scope of the study.
- b) Explain the rationale for the study (why is the research problem important?).
- c) Clarify what has been done and the ideas that have been established on the research topic.
- d) Summaries the findings of the previous studies and critically evaluate them to identify the gaps.
- e) Help in formulating research questions that require further research.

1.4.2. RESEARCH QUESTION

A research question is an answerable inquiry into a specific concern or issue. It is the initial step in your research project. The “initial step” means after you have an idea of what you want to study, the research question is the first active step in your project. *The researcher arrives at the research question by reading the literature and understanding the history behind current issues.* Although helpful, personal interest and/ or experience are not enough to formulate sound research questions.

Research questions express the relationships or phenomena you are going to explore. For example, in the general area of “use of the target language in the classroom”, you might want to explore the following question:

Example:

- Are there any differences between more and less experienced teachers' use of the target language?

Research questions can have sub-questions:

- a) Do more experienced teachers use more target language than less experienced teachers?
- b) Do more experienced teachers use target language for different functions in the classroom compared to less experienced teachers?

- **Research variables (cause and effect)**

Dependent variable: The variable that is influenced by the independent variable.

Independent variable: The factor that causes the dependent variable to change.

Example: The influence of English media on EFL learners' listening comprehension

1.4.3. HYPOTHESIS

Research hypotheses can be used to express what the researcher expects the results of the investigation to be. The hypotheses are based on observations or on what the literature suggests the answers might be (Mackey & Gass, 2005: 19). There are two main types of research hypotheses, namely: directional and non-directional.

1. **Non-directional** (two-tailed): In these types of hypotheses, the researcher is not interested in the direction of the difference, or simply whether a difference exists between two or more variables; a difference between variables is predicted, but its direction is not specified.

Examples:

- There will be no differences between the four teachers with regards to how often they use the target language for giving instructions in the class.
- There will be a difference between young and adult EFL learners in their willingness to use the target language in the classroom.
- There will be a relationship between family income and students' academic performance.

2. **Directional** (one-tailed): In these types of hypotheses, the researcher indicates the predicted direction of the relationship between two or more variables.

Examples:

- Older learners will prefer speaking more than younger learners.
- Novice teachers will give less instructions in the target language than experience teachers.

1.4.4. TYPES OF RESEARCH

Research types can be classified differently depending on the objective, data sources, data type, and the duration of the study.

1.4.4.1. Objective

a) Exploratory research is conducted into an issue or problem where there are few or no earlier studies to refer to. The focus is on gaining insights and familiarity for later investigation.

b) Descriptive research involves the collection of data in order to answer questions concerning the current status of a population, situation, or phenomenon that is being studied. In other words, descriptive research describes the state of affairs as it exists at present.

c) Correlational research refers to the systematic investigation or statistical study of relationships among two or more variables, without necessarily determining cause and effect.

d) Explanatory research tries to explain the relationships between variables to identify the actual causes behind a phenomenon.

1.4.4.2. Data sources

a) Primary research is original research conducted by a researcher to collect data specifically for his/ her current objective. They might conduct a survey, run an interview or a focus group, observe behavior, or do an experiment.

b) Secondary research makes use of information previously researched and collected in primary research for other purposes. This is also known as 'desk research'. Examples of secondary research include conceptual studies, systematic literature reviews, and meta-analyses.

1.4.4.3. Data type

a) Quantitative research assumes the world that surrounds us is objective. An objective examination of the world with precise tools is possible. Consequently, researchers study only those objects which can be measured, simultaneously seeking to find various cause-effect relationships. Quantitative data are gathered through survey questionnaires and checklists and the collected information is analyzed by means of statistical procedures.

b) Qualitative research utilizes a large number of methods, strategies and tools. Qualitative investigators examine events in their natural settings and interpret them in terms of the meanings people bring to them. They deal with problematic moments in people's lives through case studies, personal experiences or interviews. Hence, qualitative research is distinguished by rich description, natural and holistic representation and fewer participants.

c) Mixed-methods research is a research design (or methodology) in which the researcher collects, analyzes, and mixes (integrates or connects) both quantitative and qualitative data in a single study or a multiphase program of inquiry. (Creswell, 2011)

	Qualitative research	Quantitative research
General nature	Subjective	Objective
Purpose	To understand (explore) a phenomenon or individuals	To generalize, predict, show cause-effect relationships
Research questions	Dynamic, can be changed	Static, fixed, decided prior to collecting the data
Hypotheses	Hypothesis is not necessary	Hypotheses must be clearly stated before a study can be designed to test them
Participants	Small number	Large number
Data collection tools	Classroom observation. Open-ended (unstructured and semi-structured) questionnaires, and interviews	Structured questionnaires (surveys). Experimental interventions
Data display	Participants' words and descriptions	Numerical figures, percentages
Language	Descriptive	Technical
Data analysis	Interpretative analysis, themes	Statistical analysis
Results	Generates rich descriptions to understand and explain a particular phenomenon but is not generalizable to the wider context	Elicits generalizable explanations for a particular phenomenon

1.4.4.4. Duration of data collection

- a) **Cross-sectional research** is a type of observational research that analyzes data of variables collected at one given point in time across a sample population or a pre-defined subset.
- b) **Longitudinal research** studies a person or a group over a set period of time, normally to track the effect of some variable and as such permits causal pathways to be determined.

1.4.5. VALIDITY AND RELIABILITY IN RESEARCH

Construct validity: the degree to which a research measures what it claims to be measuring.

Internal validity: the extent to which a piece of evidence supports a claim about cause and effect, within the context of a particular study.

External validity: the extent to which the results of a study are generalizable to the general research population.

Reliability – overall consistency of a measure or a data collection tool. In other words, if we were to do the study again using the same data collection tools, would we find the same results again?

Example: If Mr Smith marked your exam paper, would you get the same grade if Mr Jones marked it?