

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is an overview of the research methodology and the research design for the study, the chapter discusses the procedure and methodology followed in conducting the study to get important details about the research, “Methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge” (Igwenagu Chinelo 01).

The chapter describes the methodology and the design of research questions for the conduct of the study. The implication of technology concerning mobile learning for the English language has been discussed in previous chapters. The importance and limitations of teaching English with mobile phones can be understood by conducting proper research.

The research stresses the effectiveness of mobile learning in teaching the English language. This chapter of the research thesis describes the design, the sample, the respondents, and the tools used for data collection and analysis. The chapter deals with the methodology adopted for the study’s experimentation, generally, the research methodology is based on research objectives, questions, and hypotheses.

The research is conducted through the questionnaire which also includes a checklist, hence checklist-cum-questionnaire and an interview method on English language teachers, teaching in the institutes/ colleges/ universities of Gujarat state.

The research is carried out to understand the role of the teachers, teaching English with mobile phones and their observations with their students, to understand the perception of teachers and analyse their opinions about teaching

the English language with mobile phones, digital platforms, its impact on students, its advantages, and limitations that teachers face while teaching English language, MOOC learning, the support of management to teachers for technology-integrated teaching and learning and impact of the Covid-19 lockdown on the teaching of English language with the mobile phone.

The research aimed to understand the implication of mobile phones in English language learning, as a result, understanding the opinion of English teachers is needed, therefore the courseware was prepared. The courseware includes a research methodology comprising a questionnaire and interview method. The samples were collected using a random sampling method. To analyse the researched data, the research follows a descriptive analysis method and a sequential explanatory method for a mixed-method study. A mixed method that includes both quantitative as well as qualitative methods, “Mixed-methods research (MMR) is a research methodology that incorporates multiple methods to address research questions in an appropriate and principled manner (Bryman, 2012; Creswell, 2015; Creswell & Plano Clark, 2011), which involves collecting, analysing, interpreting and reporting both qualitative and quantitative data” (Dawadi et. al 26).

The research involves a questionnaire and an interview method to analyse the efficacy of digital teaching and learning of the English language through MALL. The study focuses on teachers’ perspectives as the role of the teacher plays an important role in content creation, the mode and method of teaching through which learners learn a language. The study aims to explore the disparities in the use of mobile phones for English language learning between rural and urban areas in Gujarat. Much research has been conducted on mobile-assisted language learning but the research in Gujarat state to understand the perspective of teachers through questionnaires and interviews is novel.

3.2 Purpose

The purpose of this study was to examine the effectiveness of teaching and learning the English language through mobile phones. The study aims to investigate whether mobile phones have the potential to serve as the primary

method for teaching and learning English, particularly in the context of the traditional teaching methods prevalent in India, “Traditional classrooms can be defined as two-way interaction between teachers and students. This is a situation in which in the classroom there is an interaction between two parties, and they can interact face-to-face” (Hassan et al. 20).

The global COVID-19 pandemic and subsequent lockdowns brought about a significant shift in the education landscape worldwide. It forced educators, students, and institutions to adapt rapidly to online and remote learning environments. This sudden transition highlighted the potential of digital devices, particularly mobile phones, as viable tools for learning, including the acquisition of the English language. The research conducted aimed to delve into this aspect and assess the feasibility of English language learning through mobile phones, especially considering the preferences and accessibility of the tech-savvy generation.

One of the primary reasons for choosing mobile phones as the focal point of the research was their affordability and widespread ownership among Indian families. Unlike laptops or desktops, which may not be as accessible to every individual within a household, mobile phones are more ubiquitous due to their lower cost and portability. This became especially crucial during the COVID-19 lockdown when schools and educational institutions shifted to online platforms, and many learners relied solely on mobile phones for their educational needs.

The research sought to analyse whether mobile phones could effectively meet the demands of English language learning, considering various factors such as usability, accessibility to resources, engagement levels, and overall learning outcomes. It acknowledged that the digital era has ushered in a generation that is accustomed to using technology for various purposes, including learning, communication, and entertainment. Therefore, understanding how mobile phones, as prevalent digital devices, could contribute to language acquisition became a significant area of investigation.

The affordability aspect is particularly relevant in the Indian context, where socio-economic disparities can impact access to education and educational resources. By focusing on mobile phones, the research aimed to explore a tool that is more inclusive and accessible to a wider range of learners, regardless of their economic background. This aligns with the broader goal of democratizing education and ensuring that technological advancements benefit all segments of society.

Furthermore, the widespread ownership of mobile phones implies that learners are already familiar with using these devices in their daily lives. This familiarity can potentially enhance their engagement and motivation in learning English or any other subject through mobile-based platforms and applications. The research aimed to tap into this existing familiarity and assess how it translates into effective language learning practices.

Additionally, the choice of mobile phones as the primary medium for English language learning also considered the evolving nature of technology and its integration into education. Mobile phones are versatile devices capable of supporting a wide range of educational content, from interactive lessons to multimedia resources and communication tools. Understanding how these features can be leveraged optimally for language learning formed a crucial aspect of the research agenda.

In essence, the research recognized the transformative potential of mobile phones in bridging educational gaps, especially during times of crisis like the COVID-19 pandemic. By focusing on mobile-assisted language learning, the study aimed to contribute insights and recommendations that could inform more inclusive and effective educational strategies, particularly in the context of English language acquisition for diverse learner populations.

3.3 Study Area

The study was carried out within the educational institutions, including colleges, institutes, and universities, situated in the state of Gujarat. The research focuses exclusively on Gujarat, streamlining data collection for convenience.

The study's target population comprises educators engaged in teaching the English language. The sample was selected using a simple random sampling method, encompassing English language teachers from colleges, institutes, and universities across Gujarat.

3.4 Research Questions

The research has been undertaken to analyse the potential of mobile phones for English language learning and assess the readiness to embrace mobile learning among the management, teachers, and students of Gujarat. While the traditional mode of teaching has endured for ages, the mobile phone learning method has flourished in Gujarat for a decade, gaining popularity, especially during the mandatory situation of the pandemic due to its flexibility in teaching and learning. To examine the acceptance of mobile learning in Gujarat state, a survey was conducted through the use of questionnaires and interviews. The framed research questions aim to understand English teachers' perceptions regarding the effectiveness of teaching English with mobile phones and whether the Covid-19 lockdown promoted English language learning with mobile phones. The research study will answer the research questions outlined in Chapter One.

3.5 Research Procedure

To comprehend students' performance in mobile learning, analyse its distinctions from traditional learning, and understand teachers' attitudes toward mobile learning, a comprehensive questionnaire has been meticulously crafted over several months. The questionnaire is designed to pose clear and direct questions, and its formulation underwent numerous drafts and revisions to ensure clarity and effectiveness. The questions were scrutinized from various perspectives to gain insights into teachers' viewpoints and fulfil the research objectives.

Before finalizing the questionnaire, it was shared as a Google Form with experts from various colleges in the Gujarat state. Their feedback was invaluable in refining the questionnaire, leading to necessary adjustments. The finalized questionnaire was then circulated to gather responses.

For the interview component, an open-ended design was employed with semi-structured questions tailored to the research objectives. This approach aimed to extract rich and meaningful insights from the participants.

The researcher endeavoured to collect data from a broad spectrum of English teachers across colleges and universities in Gujarat. Equal emphasis was placed on both rural and urban institutions. The questionnaire garnered responses from 302 teachers, while 10 teachers were selected for in-depth interviews.

By incorporating feedback from experts and employing a well-structured approach, the researcher sought to obtain a comprehensive understanding of the perspectives and experiences of English teachers in various educational settings in Gujarat.

3.5.1 Pilot Study

“A pilot study is the first step of the entire research protocol and is often a smaller-sized study assisting in planning and modification of the main study” (In Junyong 601). A pilot study was conducted as a preliminary step before proceeding with the final research, aimed at gathering experts’ suggestions, opinions, and identifying any necessary changes. This pilot study served as a rehearsal for the main survey, enabling the testing of the questionnaire to determine if modifications were required for optimal effectiveness. The pilot study, “being conducted by experts, brings to the light the weaknesses (if any) of the questionnaires and also of the survey techniques. From the experience gained in this way, improvement can be affected” (Kothari 101).

After finalizing the questionnaire, before circulation, it was initially dispatched to experts from various colleges and universities across different districts of Gujarat. The aim was to seek their valuable opinions and guidance. The experts were requested to meticulously review the questionnaire, providing insights and suggestions regarding any necessary changes in format, content, specific questions, or options. They were also encouraged to identify if any pertinent questions related to the subject had been overlooked and needed inclusion.

The input from these experts played a pivotal role in refining the checklist-cum-questionnaire. Their examination and recommendations were instrumental in the finalization of the checklist-cum-questionnaire, which was subsequently circulated for data collection. The document has been thoroughly updated to incorporate the valuable opinions and suggestions provided by the experts.

3.5.2 Respondents

To gather data for the study, the researcher distributed a Google Form link for the questionnaire among English language teachers in colleges and universities across Gujarat. The sample was drawn from 302 respondents.

The rationale behind surveying teachers from diverse universities and colleges, spanning different academic disciplines, through a combination of questionnaires and interviews was to ensure comprehensive data collection. This approach aimed to enhance the understanding and reliability of the gathered information. The researcher sought insights into the various methods employed for integrating technology into English language learning, intending to capture the opinions of teachers from across Gujarat, irrespective of the academic stream they taught.

The survey encompassed respondents from both urban and rural areas, representing diverse age groups and varying levels of teaching experience. This inclusive approach was adopted to provide a well-rounded perspective on the integration of technology in English language education across different contexts in Gujarat.

3.6 Sample of Research

“In research terms, a sample is a group of people, objects, or items that are taken from a large population for measurement. So, to get accurate results, sampling is done.” (Bharadwaj 158). The sample is collected from the teachers teaching English in colleges/ institutes/ universities in Gujarat state. The sample collected from teachers is through a simple random sampling method, “In simple random sampling, every member of the population has an equal and independent chance of being selected for the sample” (McMillan 87).

The research employed a multi-faceted approach, utilizing a Google Form questionnaire and conducting interviews with teachers from both public and private educational institutions across Gujarat state. The study encompassed colleges, institutes, and universities, aiming to capture a comprehensive view of the teaching landscape.

To ensure diversity, the sample included educators from both urban and rural areas, with a specific focus on uncovering potential disparities in teaching methods and perceptions between these settings. Given the impact of the COVID-19 lockdown, there was a particular interest in exploring the increased adoption of mobile learning (m-learning) among teachers, especially in the context of English language instruction.

The rationale for investigating mobile phones as a medium for teaching stemmed from their widespread ownership in Indian households and their affordability. Recognizing their role as viable alternatives to traditional classrooms during pandemic situations, the study sought to understand the extent to which teachers had embraced technical advancements, particularly in using mobile phones for English language instruction.

To gain a nuanced understanding of teachers' perspectives, the initial section of the questionnaire was designed to elicit essential personal information, including age, gender, location, affiliated university, and educational qualifications. These demographic factors were instrumental in the subsequent analysis of data, enriching the findings and outcomes of the research.

3.7 Research Design

“A research design is the conceptual blueprint within which research is conducted. A scholar for his research, prepares an action plan, it constitutes the outline of collection, measurement, and analysis of data” (Akhtar 68). The research for this study is conducted through a questionnaire and personal interviews. The proper research design answers research questions and bridges the gap with research hypotheses. The design suggests the statistical tools used for analysing the study and methods of analysing qualitative and quantitative research.

The questionnaire and interview protocol were meticulously crafted to gauge teachers' perspectives on mobile-assisted language learning (MALL) for English language instruction. A deliberate structure was implemented, employing closed-ended questions for the questionnaire, and adopting a semi-structured, open-ended format for the interview.

The primary objectives of the study encompassed exploring perceptions of MALL, assessing the impact of the Covid-19 lockdown on education, and evaluating the technical skills of both teachers and students. Additionally, the survey delved into the realm of Massive Open Online Course (MOOC) learning for higher education and probed the extent of institutional support for MOOC adoption, as well as the institution's stance on online teaching and learning.

The comprehensive checklist-cum-questionnaire was organized into six distinct sections. The introductory section provided essential details about the researcher, supervisor, and the thesis title, emphasizing the research's aim and assuring confidentiality. The second section sought personal information from respondents, facilitating data categorization based on social parameters.

The third section focused on unravelling teaching and learning patterns using MALL, including inquiries about the prevalent digital devices among teachers and students for English language instruction. Section four delved into the online teaching and learning framework, exploring teachers' preferences. The fifth section addressed the role of COVID-19 in shaping online English language education, examining shifts in digital device and platform usage before, during, and after the lockdown. The final section scrutinized the role of educational institutions in facilitating online/mobile classes and MOOC learning, investigating if management and educators actively promoted MOOC learning to students.

Concurrently, the open-ended interviews aimed to glean nuanced insights into teachers' perceptions of mobile learning's impact. Additionally, these interviews sought educators' suggestions for enhancing English language instruction through mobile phones, while also exploring the ramifications of

the sudden transition from traditional to online teaching during the Covid-19 pandemic on both teachers and students.

3.8 Research Instrument

The questionnaire and interview method are the two main research instruments for conducting the study. The sample data is collected through a random sampling method. Following is the description of the two methods of research.

The Questionnaire

The structured questionnaire method was selected for surveying because it is an economical, unbiased medium of conducting the survey, and could be reached through the maximum number of respondents which aids in getting the large sample size, though it is a very slow process.

According to Roopa S and Rani MS, “A well-designed questionnaire requires thought and effort, and needs to be planned and developed in several stages” and they have given five stages of a questionnaire.

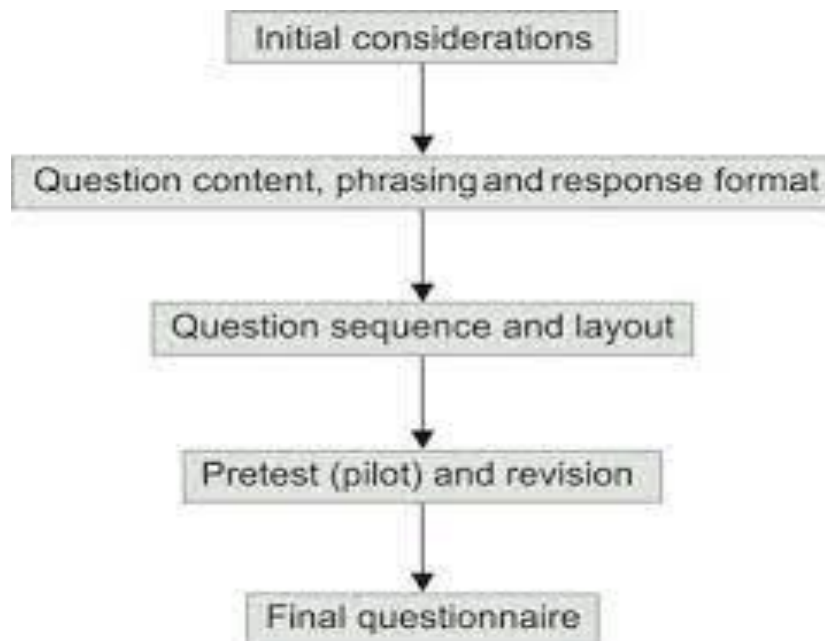


Figure: Stage of Planning a Questionnaire (Roopa and Rani 27)

The questionnaire, designed for this study has also followed all the stages given above. Many drafts were made and discarded before finalising the questionnaire as it was the primary method of the study.

The researcher has prepared the questionnaire to gather the data to evaluate the efficacy of digital teaching and learning of the English language through mobile-assisted language learning. The questionnaire focused on the respondents' opinions, ideas, attitudes, behaviour, and beliefs about m-learning for the English language. Through the questionnaire, the study tried to analyse the advantages of m-learning that help in language learning and the challenges that teachers and students face while teaching and learning of English language with the mobile phone.

The questionnaire was finalised after completing many stages, many drafts were designed and edited under the supervision of the research guide. After all editing, the final draft of the checklist-cum-questionnaire was sent to the experts for the pilot study, after getting their responses, suggested modifications were made, and the was administered to the ELT teachers at various colleges and universities of the Gujarat state. The objective of the checklist-cum-questionnaire was to get the data related to the study such as teaching and learning patterns using MALL, online teaching and learning framework, the role of Covid-19 in ubiquitous learning of the English language and the role of educational institutes in online/ mobile classes and for MOOC learning.

The respondents were approached by the researcher and the research guide to answer the questionnaire sent through the Google form link. The questionnaire was generated through online mode and circulated online through emails, as online generation of form and circulation becomes economical, less time-constrained, and provides flexibility to the respondents, to answer the questionnaire in their free time, which gives respondents time to think over the questions and to respond truthfully.

The questionnaire was prepared after a detailed reading about it to make it reliable. Radhakrishna (2007) suggested five steps for developing a valid and reliable questionnaire which include background, questionnaire conceptualization, format, and data analysis, establishing validity and establishing reliability.

Step 1

Background: In this first step, the purpose, research objectives, questions hypothesis and literature gap of the proposed research should be thoroughly examined. The background is the foundation of the questionnaire hence, respondents and their background should be taken care of. A thorough understanding of the subject is the first and foremost part of the questionnaire.

Step 2

Questionnaire Conceptualization: In the second step, on the grounds of the theoretical framework and objectives, the questions and statements are generated for the questionnaire.

Step 3

Format and Data Analysis: The researcher decides on the layout, format, sequence, font size and measuring tools for analysing data.

Step 4

Establishing Validity: Validity is the amount of systematic or built-in error in measurement. The draft questionnaire is checked by the panel of experts to enhance the validity of the questionnaire.

Step 5

Establishing Reliability: The reliability of the questionnaire is accuracy or precision; it could be tested by the pilot study. The pilot study is conducted before taking the final survey to understand if any modifications are required in the questionnaire.

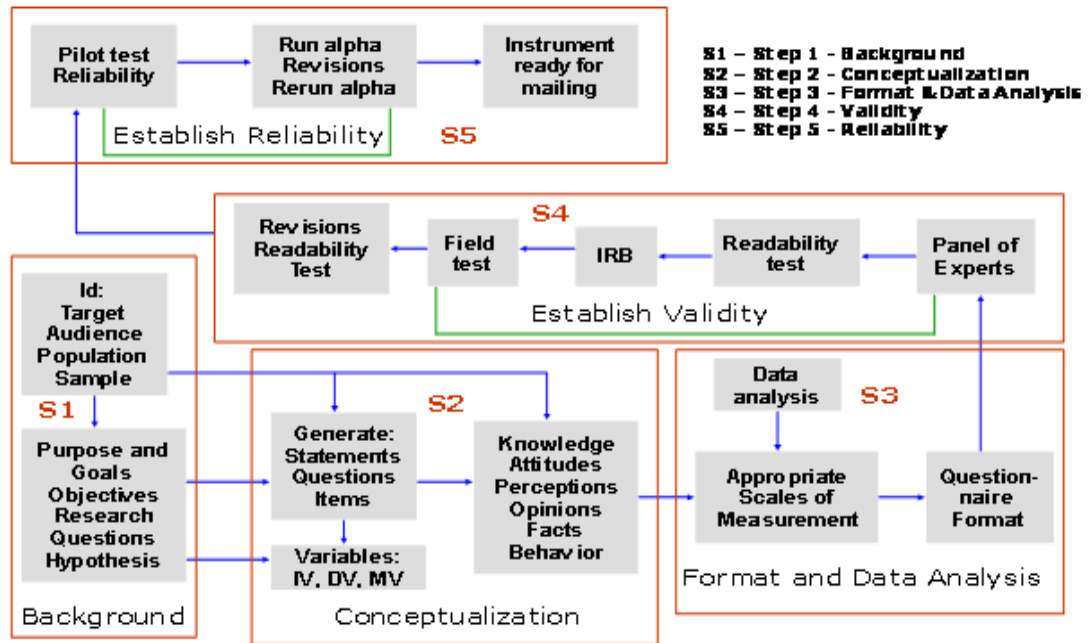


Figure: Sequence for Questionnaire/Instrument Development (Fadlullah 64).

All the above steps were followed by the researcher, to make the questionnaire valid and reliable. The researcher has also followed the BRUSO principle as given by Peterson 2000.

- i. **Brief:** Effective questionnaire items are brief, precise and to the point. As brevity becomes easier for respondents to understand and answer the questions.
- ii. **Relevant:** The questionnaire items should be relevant to the research questions. Similar questions should be avoided to avoid varying interpretations.
- iii. **Unambiguous:** The questions should be clear. The questionnaire should refrain from unfamiliar words, slang, and jargon. The language in the questionnaire should be simple and clear and could be easily understood by everyone.
- iv. **Specific:** Questions should be short, direct, and specific.
- v. **Objective:** Researchers should try to include objective questions as objective questions help in getting unbiased results.

Interview Method

The data collected through the interview method “involves the presentation of oral-verbal stimuli and reply in terms of oral-verbal responses” (Kothari 97). The method can be used for both personal and telephonic interviews. The personal interview method is conducted as the interviewer asks certain questions to interviewees to seek information related to the subject. The interview conducted for the study was semi-structured, A semi-structured interview is a data collection method that relies on asking questions within a predetermined thematic framework. However, the questions are not set in order or phrasing. The semi-structured and open-ended interviews give both the interviewer and interviewee to discuss the subject in detail. The semi-structured format for the interview was chosen because the researcher was sure of all the key aspects and topics that needed to be covered in an interview. The reason for selecting the oral interview method along with the questionnaire was to get more detailed information about the subject and to get a higher rate of responses than written interviews.

The personal interview focused on the readiness of teachers to accept mobile learning. The interview has emphasised the experience of teachers’ sudden shifting from traditional to online learning during the Covid-19 lockdown.

The questions in personal interviews are :

- What is the teachers’ perception of teaching and learning the English language using digital devices, and which digital devices and mediums do they commonly employ?
- How do teachers incorporate technology into English language teaching? Do digital libraries play a significant role in mobile learning?
- Has the pandemic lockdown changed teachers’ perception toward online teaching patterns and teaching with mobile phones? How was online teaching and learning with mobile phones different for teachers before the pandemic?
- What is the significant difference between mobile and traditional learning for English language learning?

- How should English language learning activities with mobile technologies be designed to support innovative educational practices, integrate with broader educational scenarios, and improve language skills?
- What are the advantages and challenges of teaching the English language with mobile phones?
- What is the student's behaviour towards the usage of mobile phones for learning the English language? Can mobile learning classes motivate students' engagement in class discussions?
- Which digital libraries do teachers, and their students commonly access for English language learning?
- What are the teachers' suggestions on mobile education for English language learning, the ongoing trends, and their impact?

3.9 Data Collection and Analysis Procedures

Data is collected for a questionnaire through a Google form link and an interview method from the teachers of the English language of Gujarat state, the data from the questionnaire is analysed through descriptive study through statistical tools. The findings are presented through tables and charts using Microsoft Excel. The data from the interview was analysed with qualitative methods.

The study requires quantitative data to analyse the questionnaire through tables and charts and it requires qualitative data to analyse open-ended questions surveyed through interviews and in the questionnaire. So, the mixed method is used to analyse the collected data., mixed method “is more than simply collecting and analysing both kinds of data; it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research” (Creswell, 2009). The Mixed method for the research serves the purpose and appropriate method for analysing data in this research.

Qualitative data provide a detailed understanding of a problem while quantitative data provide a more general understanding of a problem.

This qualitative understanding arises out of studying a few individuals and exploring their perspectives in great depth whereas the quantitative understanding arises from examining many people and assessing provide different pictures or perspectives, and each has its limitations. When researchers study a few individuals qualitatively, the ability to generalize the results to many is lost. When researchers quantitatively examine many individuals, the understanding of any one individual is diminished. Hence, the limitations of one method can be offset by the strengths of the other method, and the combination of quantitative and qualitative data provide a more complete understanding of the research problem that approach by itself (Creswell and Clark 8).

For this study, the sequential exploratory study has been used for the mixed-method research, quantitative analysis of data explained through a qualitative follow-up. However, the same respondents were chosen for qualitative and quantitative studies for the research. In the present study, the ethical concerns of study have been taken care of, as explained by Terrell (276), such as:

- Participants must participate voluntarily.
- Participants must understand the purpose and procedures of the study.
- Participants must understand that they have the right to a copy of the results.
- Participants must understand the potential benefits of the study and that their privacy will be respected.
- Anonymity must be maintained during data analysis and data kept for a reasonable period.
- Ensure that writing is free of bias towards any group (e.g., age, ethnicity, sexual orientation, race, gender, etc.).

In the present study, the confidentiality and privacy of the respondents have been prioritized the most. The questions and data are not biased towards any

caste, creed, race, community, age, or gender. The data analysis is to be discussed in the following chapter along with the interpretation of the results.

Quantitative Research Method

A research method that deals with numbers or statistical measurements systematically is the quantitative research method. In the field of ICT, “The objective of the quantitative method is to develop and employ models based on mathematical approach, hypotheses and theories about the nature of an ICT phenomenon” (Iskandar 88). In the quantitative method, the data is collected on the ground of hypotheses made for the theory. As the quantitative method is related to statistical tools, surveys and observations are some of the common ways of conducting the research study.

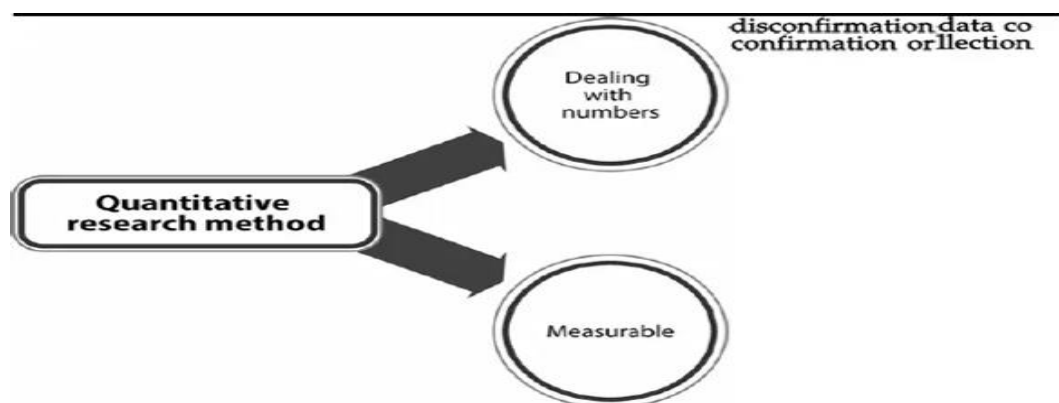


Figure 8.1:

Figure: Description of Quantitative Method (Iskander 88)

Qualitative Research Method

“Qualitative data, especially words, texts, expressions, and statements, represent thoughts, feelings, and beliefs of people the researchers have observed or interviewed” (Langenbach et al. 237). Qualitative research is subjective in nature, and it is concerned with the opinion, thoughts, experiences, and feelings of individuals. “Qualitative data are collected through direct encounters with individuals, through one-to-one interviews or group

interviews or by observation” (Hancock 02). The basic method of collecting data in qualitative research is direct interaction with people either one on one basis or individual to a group setting. The samples collected for qualitative research are usually smaller in number than for quantitative research methods, and analysing data in qualitative research is more time-consuming. The basic reason for using qualitative data is to get a deeper insight into the subject through direct interaction with the people. The data has been analysed on the grounds of what the interviewer has said, nothing has been assumed or added by the researcher.

3.10 Conclusion

The chapter provides a comprehensive overview of the research methodology and design employed for the study, outlining the methods used to conduct the research. It delves into the classification of research methods, details regarding the sample selection, research instruments, study procedures, and the process of data collection and analysis.

The research employed a dual-method approach, utilizing both questionnaire and interview methods to gain insights into the perspectives of English language teachers regarding mobile-assisted learning. The data analysis incorporated a combination of quantitative and qualitative research methods. The quantitative aspect involved the use of a Checklist-Cum-Questionnaire, while the qualitative component centred around interviews to elucidate teachers’ viewpoints on the integration of information and communication technology (ICT) in English language teaching (ELT), specifically focusing on the use of mobile phones for teaching and learning English.

To ensure the integrity of the data, responses exhibiting any discrepancies were meticulously excluded from the analysis. The subsequent chapter will expound upon the findings derived from the data, providing a detailed discussion of teachers’ responses to both the questionnaire and interviews.

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