CHAPTER - 3
RESEARCH DESIGN AND METHODOLOGY

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3.1 INTRODUCTION

The chapter goes on to describe how the research team examined pre-internship as a contributor to instructional planning skills of pre-service teachers at RIE Bhopal. This study is important as it emphasizes learning by doing, which aids the change from learning in courses to working in the classroom professionally. Currently, instructional planning helps teachers link what students are expected to achieve, how they are taught and the evaluation process. Considering this competency's importance, the study investigates the ways structured pre-internship experiences help pre-service teachers get ready.

For this reason, the research uses both quantitative and qualitative approaches together through mixed methods. Numbers from quantitative data let you understand how students feel about their skills, while the stories and experiences shared in qualitative answers explain and expand on their feelings. The chapter sets out the step-by-step approach to the study, the way it was carried out, the method for selecting participants, the tools used to gather information and the techniques for analyzing the results. Every selection has been made with care to ensure the findings aid discussions about teacher education, changes to the curriculum and teaching techniques in schools.

3.2 ORIGIN OF THE STUDY

The origin of this study lies in the increasing demand for professionally prepared teachers who can navigate the diverse and dynamic requirements of modern classrooms. In today's educational context, instructional planning is not merely an administrative task but a foundational teaching skill that determines the quality of student learning. A sound instructional planning can help teachers to meet the needs of learners with diverse backgrounds, create inclusive plans, and connect learning goals to classroom activities and evaluation.

The coursework in pre-service teacher education programs, particularly in institutions such as the Regional Institute of Education (RIE) focuses on theoretical underpinnings. Nonetheless, student-teachers usually have a problem translating theory into practice, especially when that theory is not structured or exposed to the real world. The most apparent

aspect of this preparedness gap is the domain of instructional planning, which is a skill that needs both conceptual understanding and practice.

We have realized this and thus pre-internship phase has been institutionalized as an important way of bridging the gap between theoretical study and the immersive experience of full-time internships. The pre-internship involves student-teachers observing classrooms, co-planning, assisted teaching practice, conferring with peers, and reflecting on this experience under the mentor supervision. The phase provides a disciplined, but realistic setting during which the pre-service teachers are capable of rehearsing their teaching plans and obtain critical feedback.

With this potential, the pre-internship program implementation and effectiveness is highly institutionalized. A number of research (e.g., Korthagen, 2010; Darling-Hammond et al., 2017) have emphasized that well-structured pre-internship experience, mentorship-based, built on experiential learning, and reflective practice, has a strong positive impact on the professional readiness of future teachers. Such theoretical models as Experiential Learning Cycle by Kolb and Social Constructivism by Vygotsky also confirm the hypothesis that practical, social and reflective activities are crucial to the formation of effective instructional planners.

However, anecdotal and research-based reports indicate that a sizeable number of teacher trainees continue to feel ill equipped especially in the areas of planning lessons that are contextually and pedagogically appropriate as they step into internships. This detachment between sense of being ready and the performance indicates the necessity of reviewing the pre-internship stage critically.

Therefore, this study seeks to explore how pre-internship training contributes to the development of instructional planning skills among final-year pre-service teachers at RIE Bhopal. The research aims to evaluate the effectiveness of pre-internship activities in enhancing these skills and provide empirical insights that can inform curriculum design, mentoring practices, and policy decisions in teacher education across India.

3.3   RESEARCH DESIGN

3.3.1 Type of Research

- This The study uses a **descriptive research design** with a **mixed-methods approach** combining quantitative and qualitative data to explore and analyse the role of pre-internship training in developing instructional planning skills.

- It is a **non-experimental, applied educational research** conducted in a real institutional context.

- The design aims to capture both the breadth (quantitative) and depth (qualitative) of pre-service teachers' experiences and competencies during pre-internship.

3.3.2 Approach

A **mixed-methods approach** is used, combining quantitative and qualitative techniques:

- **Quantitative data** is gathered using structured questionnaires to assess students' perceived development of instructional planning skills and related process skills during the pre-internship.

- **Qualitative data** is collected through open-ended questions and reflective responses to capture deeper insights into the challenges, experiences, and effectiveness of mentorship, lesson planning, and feedback during pre-internship training.

3.3.3 Scope of the Design

This research design allows for:

- Triangulating data to obtain a comprehensive understanding of the pre-internship's role.

- Capturing student voices to inform policy and curriculum reform.

- Identifying institutional strengths and gaps in pre-internship programming.

3.4   RESEARCH METHOD

This section outlines the methodology adopted to investigate how the pre-internship phase contributes to the development of instructional planning skills among pre-service teachers. The research method has been designed to align with the study's objectives, research questions, and mixed-methods research design.

3.4.1 Methodological Approach

The study follows a **mixed-methods approach**, integrating both **quantitative** and **qualitative** methodologies. This approach enables a comprehensive understanding by not only measuring pre-service teachers' perceptions and competencies through structured tools but also exploring their lived experiences and reflective insights during the pre-internship phase. The structured methodology ensures objectivity, reliability, and the ability to generalize findings within the Bhopal district context.

3.4.2 Population and Sampling

- The population includes **final-year pre-service teacher trainees** enrolled in integrated and professional teacher education programs at RIE Bhopal: B.Sc. B.Ed., B.A. B.Ed., B.Ed., and B.Ed.-M.Ed.

- **Purposive sampling** is used to select participants who have completed their pre-internship phase.

- The sample size is about **100 students**, stratified across different programs and disciplines for representativeness.

3.5 RESEARCH TOOL

3.5.1 Nature of the tool

- A **structured self-administered and digital questionnaire** developed on Google Forms collects quantitative data on awareness, perceived effectiveness, and application of instructional planning skills.

- The questionnaire includes MCQ based items assessing process skills such as lesson planning, classroom management, communication, problem-solving, and adaptability.

- Qualitative data is gathered through **open-ended reflective questions** to capture personal growth, mentorship experiences, and challenges faced during pre-internship.

3.5.2 Structure of the Tool

The questionnaire comprises three distinct sections:

Section A: General Information
- Collects demographic details including:

- o Name
- o Course
- o Program enrolled (B.Sc. B.Ed., B.A. B.Ed., B.Ed., B.Ed.-M.Ed.)
- o Previous teaching experience
- o Area of internship school

Section B: Awareness and Understanding of Pre-Internship

- Multiple-choice questions to assess:
  - o Clarity of pre-internship objectives
  - o Understanding of instructional planning concepts
  - o Awareness of the process and expectations of pre-internship activities
  - o Instructional Planning and Process Skills Development
  - o Ability to design lesson plans aligned with curriculum goals
  - o Confidence in handling classroom situations during pre-internship
  - o Application of theory to practice
  - o Impact of mentorship and guidance during school visits
  - o Use of reflection and feedback to improve lesson planning
  - o Exposure to diversity and inclusion in instructional strategies
  - o Use of ICT and innovative methods in planning

Section C: Reflective Responses (Qualitative)

- Open-ended questions to explore deeper insights:
  1. In what way did your pre-internship experience help in improving your lesson planning and instructional delivery?
  2. Mention any one specific scenario you faced during pre-internship related to instructional planning.

3.5.3 Validation of the Tools

The research instruments are validated through:

- **Expert validation** by teacher educators and research supervisor.

- **Pilot testing** was also conducted to check for clarity, relevance, and reliability of items outside the main sample.

- Necessary modifications are made based on feedback before full-scale data collection.

3.5.4 Justification for Using Google Form

- **Accessibility:** Participants could respond using mobile phones or computers, ensuring flexibility and ease.

- **Anonymity and confidentiality:** Responses were collected securely and were not linked to the respondents' identities unless voluntarily shared.

- **Data management:** The form allowed automated data compilation and export for analysis, minimizing manual error and facilitating faster processing.

- **Cost and time efficiency:** It provided a paperless, eco-friendly, and time-effective method of administering the questionnaire.

3.5.5 Administration Procedure

The Google Form-based research tool served as a practical, structured, and comprehensive instrument for gathering data on pre-service teachers' experiences with pre-internship and the development of instructional planning skills. It played a critical role in enabling the collection of both measurable outcomes and personal reflections aligned with the objectives of the study.

- The link to the Google Form was shared with final-year students via institutional communication channels and classroom groups.

- Participants were informed about the **purpose, voluntary nature**, **confidentiality** and **anonymity** of the study before beginning the questionnaire.

- Only students who had completed their pre-internship phase were included in the final dataset.

- The responses were then coded, scored, and tabulated for quantitative analysis using descriptive and inferential statistics.

3.6   POPULATION

The population in this study are final-year pre-service teachers who are enrolled in different integrated and professional teacher education programs at the Regional Institute of Education (RIE), Bhopal. The population consists of students from B.Sc. B.Ed., B.A. B.Ed., B.Ed. and B.Ed.-M.Ed. programs who have successfully completed their pre-internship phase. They are important for studying how pre-internship experiences help develop instructional planning skills which are necessary for being ready to teach.

This study looks at pre-service teachers during the period between their studies and their first full-time teaching internships, which is an important time to see how skills such as lesson planning, managing a classroom, communicating and adapting are being formed. Because of their pre-internship activities, these students have learned about the differences between theory and practice in real classrooms.

The study aims to assess how prepared students are and how effective pre-internship training is by choosing students who have taken part in such activities under guidance. The focus is on realizing how mentorship, feedback, school visits and team lesson planning help teachers gain confidence and competence in teaching.

This choice allows for a detailed study of how RIE Bhopal and other teacher education programs are connecting their pre-internship structure to the needs of planning lessons and teaching in a variety of classroom settings.

3.7   PROCEDURE

The research work was carried out with the final year pre-service teachers pursuing different integrated and professional teacher education courses at the Regional Institute of Education, Bhopal. The aim was to determine how effective the pre-internship phase was, in improving the instructional planning skills of these student-teachers.

In order to do so, the data collection was done through **survey**. An ordered questionnaire was created and distributed through **Google Forms**, which is why it was convenient and easy to access by the participants. The students were made to acquire the tool via institutional communication channels, such as academic groups and emails. Prior to data collection, all participants were briefed about the purpose of the study, its voluntary nature, and the assurance of anonymity and confidentiality. Only students who had successfully completed their pre-internship phase were considered eligible for participation.

The **data collection process** was carefully planned to ensure uniformity in administration. The digital nature of the tool helped maintain consistency in the testing environment, reducing potential researcher bias and facilitating accurate and efficient responses.

The filled-in responses were automatically recorded and compiled using Google Sheets, enabling seamless organization and initial data screening. Responses were then sorted and grouped according to course categories (B.Sc. B.Ed., B.A. B.Ed., B.Ed., and B.Ed.-M.Ed.) for further analysis.

3.8 SAMPLE OF THE STUDY

In research, it is impossible to study the whole population for which the problem is investigated. Hence every researcher has to resort to sampling.

Sampling is basic of any scientific investigation. Different methods are employed for sampling like stratified, purposive, incidental sampling and random sampling. In this study we use purposive sampling

The sample selected was the final year students (B.Sc. B.Ed., B.A. B.Ed., B.Ed., and B.Ed.-M.Ed.) of all 5 courses
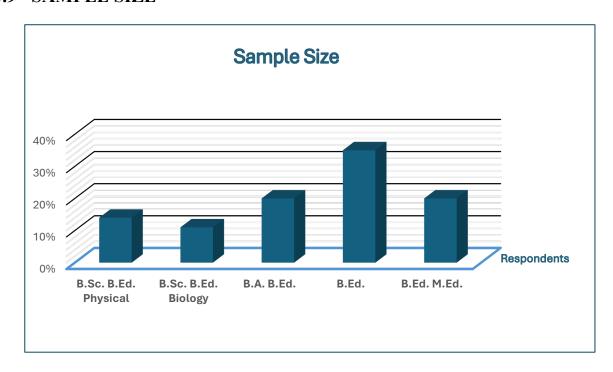
3.9 SAMPLE SIZE

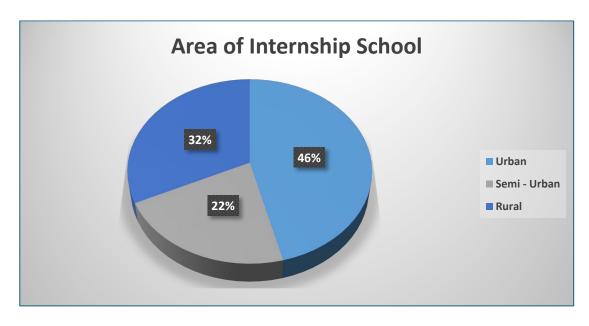*Figure 1: Percentage Distribution of Respondents by Educational Qualification*

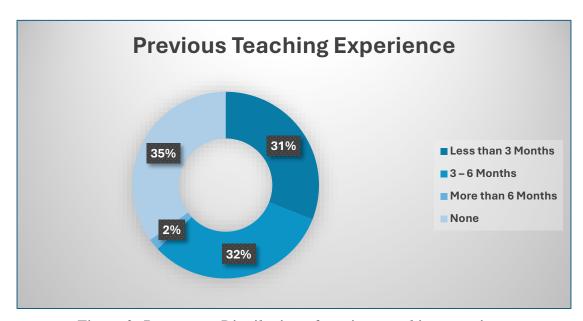*Figure 2: Internship School Distribution by Area*

Figure 3: Percentage Distribution of previous teaching experience

3.10 STATISTICS

This section outlines the statistical analysis techniques employed to analyse data collected through a Google Form-based questionnaire developed to evaluate the effectiveness of the pre-internship phase in enhancing instructional planning skills among pre-service teachers at RIE Bhopal.

3.10.1 Descriptive Statistical Analysis

The questionnaire primarily included **multiple-choice questions (MCQs)** designed to gather quantitative data on students' awareness, confidence, and perceived development of instructional planning and related process skills. In addition, one **descriptive multiple-option question** was included to gain qualitative insights into individual experiences and reflections during the pre-internship period.

The results from the questionnaire will be described using descriptive statistics. A selection of statistical measures will be calculated:

1. **Mean**: To identify the overall patterns of the perceptions of the participants regarding their instructional planning skills and other associated skills, the mean score of each item was calculated.

2. **Frequency Distribution**: The answers to multiple-choice questions were summed up to see how many people chose a specific answer, which allows seeing trends in responses in the sample.

3. **Percentage Analysis**: The proportion of students selecting specific responses was calculated to determine the overall trends in areas such as awareness, lesson planning preparedness, and the application of theoretical knowledge in school settings.

Qualitative Analysis

The multiple-option descriptive question single question incorporated in the tool enabled the participants to state their views with regard to the role pre-internship experiences played in shaping their beliefs relating to instructional planning. **Thematic categorization** was applied to analyse those responses whereby common themes including mentorship support, reflective practice, classroom exposure and confidence in lesson planning were extracted and classified into themes to be interpreted.

3.10.2 Data Preparation and Cleaning

In order to guarantee validity, dependability, and strength of the investigation, the organized method of information preparation and purifying was applied to the survey feedback gotten by the Google Form named "Role of Pre-Internship in Developing the Skills of Instructional Planning of Students." This preparatory measure played a paramount role in cleaning the dataset ready to proceed with the statistical analysis and interpretation,

especially concerning the three themes identified in Chapter 4: **Instructional Planning & Content Mastery**, **Classroom Management & Professional Development**, and **Instructional Strategies**.

The survey received responses from 100 final-year pre-service teachers enrolled in a range of integrated and professional teacher education programs at RIE Bhopal. The tool comprised 36 items, including multiple-choice questions (MCQs) assessing 18 key instructional skills, followed by one open-ended question designed to capture reflective insights on pre-internship experiences.

1. Data Organization

The raw survey data was initially exported from Google Forms into a Google Sheet and then downloaded as an Excel file. The dataset was organized in the following manner:

- **Column A**: Participant ID (anonymized to ensure confidentiality)

- **Columns B to onwards**: Responses to MCQs, with answers coded numerically (e.g., A = 1, B = 2, etc.) to ensure consistent treatment of responses during statistical processing.

- **Final Columns:** Responses to the reflective, multiple-option question were separated into binary variables, which enabled theme-based frequency analysis.

2. Steps in Data Cleaning and Preparation

- **Validation of Range**

  All MCQ responses were validated to ensure they fell within the pre-defined range of 1 to 4 (corresponding to options A–D). Any entries outside this range were flagged and corrected or removed to maintain data integrity.

- **Calculation of response percentage**

  Items were grouped according to the three thematic domains: **Instructional Planning & Content Mastery**, **Classroom Management & Professional Development**, and **Instructional Strategies**. For each theme, composite percentage were calculated by averaging responses to paired items that assessed the same competency. These composite population allowed for focused analysis within each theme.

- **Descriptive Multiple-Option Question Coding**

  For the open-ended, multiple-selection question, which captured reflective insights into pre-internship experiences, responses were converted percentage selected. This

transformation allowed for the thematic categorization of reflective responses (e.g., mentorship feedback, lesson planning, classroom management), which were then analysed for frequency and pattern recognition.

3. Interpretation of Themes in Relation to Data Cleaning

The data cleaning process also involved segmenting and preparing the responses to interpret findings according to the three themes of the study: **Instructional Planning & Content Mastery**, **Classroom Management & Professional Development**, and **Instructional Strategies**. Here's how each theme was handled:

1. **Theme 1: Instructional Planning & Content Mastery**

   The items associated with instructional planning competencies, such as lesson planning, content analysis, and setting learning objectives, were grouped together. After reverse coding the negatively worded items, composite scores were calculated for these competencies. The analysis of this theme aimed to understand the pre-service teachers' ability to plan structured lessons that align with learning objectives, and whether they perceived pre-internship training as enhancing these skills.

2. **Theme 2: Classroom Management & Professional Development**

   The focus here was on classroom management strategies, professional development through mentorship, and the role of feedback in developing these skills. Items within this domain were grouped into subscales, and responses were analyzed to gauge how pre-service teachers adapted to real-world classroom dynamics and how they perceived their professional growth through pre-internship activities.

3. **Theme 3: Instructional Strategies**

   Instructional strategies were evaluated in terms of the application of teaching theories to practice, student engagement techniques, and the use of varied instructional methods. Responses were analysed to determine the extent to which pre-service teachers effectively applied theoretical knowledge in their teaching practices, and how they adjusted their strategies to engage students and adapt to classroom needs.

3.10.3 Interpretation of results

What happened in the study will be understood by analysing the results from the statistics.

- How well do pre-service teachers perceive pre-internship training in enhancing their instructional planning skills?

- How actively does pre-internship training contribute to the development of process skills, such as classroom management and problem-solving?

- How effectively do pre-service teachers apply theoretical knowledge to practical teaching situations during the pre-internship phase?

Essential findings will be shown using tables, graphs and charts so they are easy to understand. It will help improve how we view instructional planning skills in pre-service teacher training and guide actions and recommendations for teacher education programs and policymakers.

3.10.4 Conclusion

In this chapter, an analysis of the effectiveness of the pre-internship phase in developing the skill of instructional planning among the pre-service teachers at RIE Bhopal is done. The study, using descriptive statistics, assesses the perceptions of the pre-service teachers on their readiness, how the pre-internship training affected the process skills, such as classroom management, and how the theoretical knowledge can be applied to the actual teaching situations. The results are described and represented in tables and charts and reveal the strong points and the possible improvements in the program which points are very valuable as they may be used to optimize the teacher training structures and be used in the policy making process so that in the future more teachers will be prepared to face the challenge of classrooms.