

CHAPTER III

RESEARCH

METHODOLOGY

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3.0 Introduction

This chapter discusses the methodological aspect of study. It explains about the approach of the study, research design, research methods, population and sample of the study. Sampling techniques and tools of data collection, procedure of data collection and statistical techniques adopted for data analysis are also discussed in this chapter.

3.1 Philosophical Paradigm of Research and its Rationale

In this study, the Pragmatic paradigm of research has been adopted to investigate the research problem. Pragmatic paradigm of research comes from pragmatic philosophy which is broadly propagated by the works of John Dewey, Charles Sanders Peirce, and William James. Recent writers include Rorty (1990), Murphy (1990), Patton (1990), and Cherry Holmes (1992) (Creswell, 2009). It is believed that individual researchers possess the freedom to exercise their discretion in making choices. Scholars are afforded the liberty to select the most suitable research methods, techniques, and procedures that align with their objectives and requirements (Creswell, 2009).

Pragmatism as a philosophical paradigm of research work arises out of actions, situations and consequences instead of precursory event (Creswell, 2014). As a research paradigm it promotes plurality; of philosophical approaches and methods (Creswell & Clark, 2011). Researchers uses methods that best works for investigating the particular research problem in the most appropriate way (Yvonne Feilzer, 2010). Research questions or matter investigated are given utmost importance in pragmatic paradigm of research; it supports that notion that generating results through qualitative and quantitative research is practical and required to address certain type of research questions (Bryman, 2006; Maarouf, 2019).

Pragmatic research paradigm is seemingly appropriate for this study. This study starts with analyzing the curriculum prepared for the Elementary Teacher Education Programme. It started by stating research questions both in the form of

qualitative and quantitative addressing the student teachers and teacher educators perception and self-efficacy towards Inclusive Education. This combination of collecting data has given strength to address the questions of this research. Silverman (2005) stated that “no method of research, quantitative or qualitative, is intrinsically better than any other” (p.6). It is completely based on the nature of study and type of research questions being developed. Researcher in this study has adopted both quantitative and qualitative tools for gathering data from the respondents. Pragmatic research paradigm supported the researcher to adopt appropriate research method for the study. Therefore, the researcher has adopted the pragmatic research paradigm for conducting the present research work.

3.2 Research Design

The research design is a comprehensive framework that outlines the methodology, structure, and approach employed to address research questions or problems. It encompasses a detailed plan of action that guides the researcher from formulating hypotheses and their operational implications to the ultimate analysis of data (Kerlinger, 1986; Kumar, 2011). An efficient and appropriate research design minimizes the errors and ambiguities of the research problem and provides a valid, accurate and objective result.

As per the nature of the study the researcher has used Descriptive Survey Research Design for the present study, wherein both quantitative and qualitative data will be collected. Descriptive Survey research intends to analyses and interprets the collected data in order to understand the phenomena in its prevailing condition. It studies the problems as it exists in its natural setting with a scientific approach without manipulating or making any changes in the natural settings. The present study demands of conducting a descriptive analysis of the elementary teacher education programme from the point of view of inclusive education. Therefore, the researcher has adopted Descriptive Survey Research Design for conducting the research work as it is best suited the objectives of the present study.

3.3 Research Methods

This study aims to understand the prevailing perception and self-efficacy of the elementary pre-service teacher of Assam. Therefore, Descriptive Survey Method has been used for the present study. The present methodology pertains to the

examination of present conditions and relationships; prevailing practices held beliefs, points of view or attitudes, ongoing processes, felt effects, and developing trends. In descriptive research method data can be collected qualitatively and quantitatively as well (Nassaji, 2015).

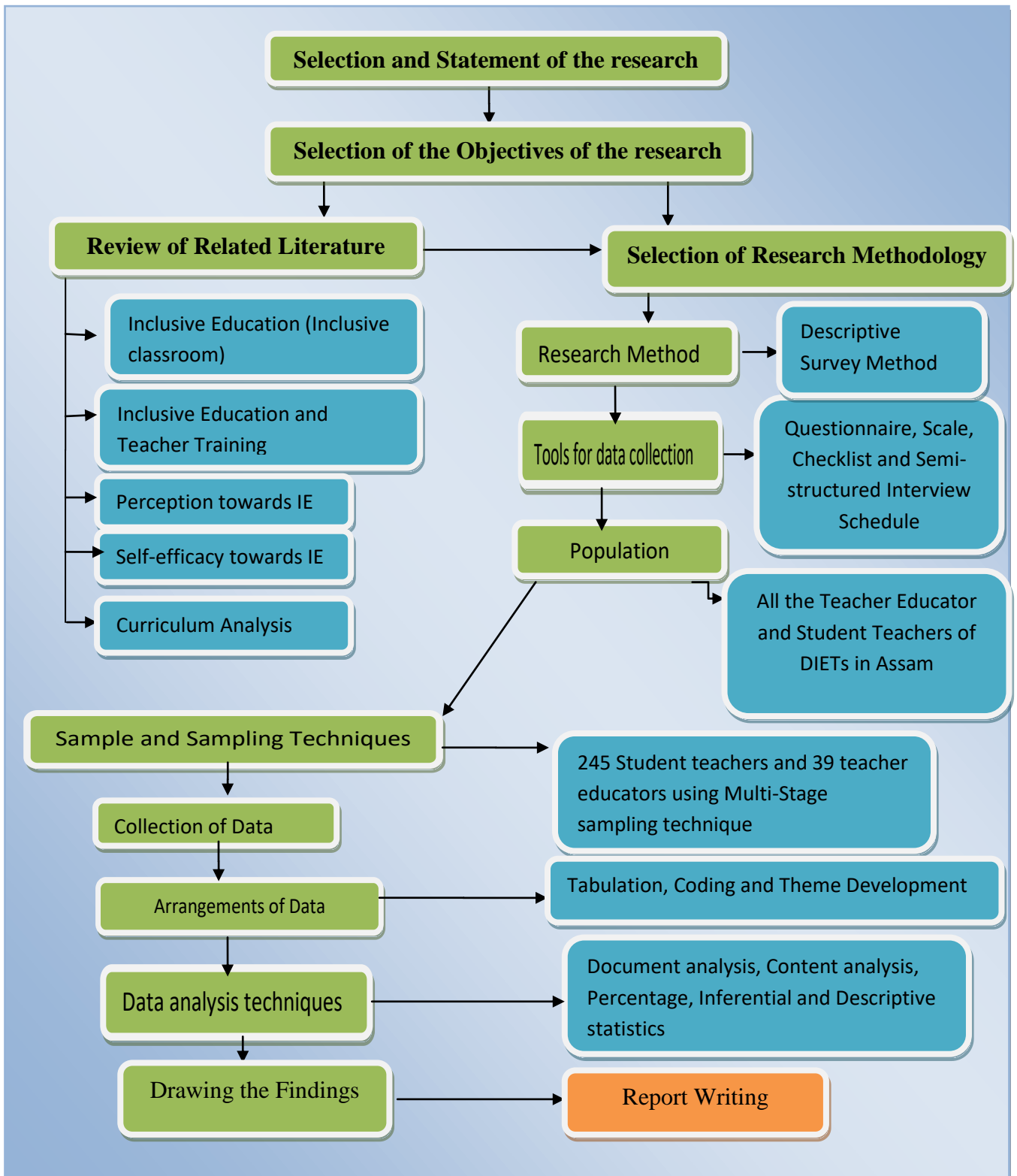


Figure No. 3.1: Research Design of the study

3.4 Population

Population is the group of people that has common characteristics which is being studied by the researcher. A population can be defined as a collection of individuals who share at least one distinguishing characteristic that sets them apart from other individuals (Best & Kahn, 2006). In the present study Teacher educator and student teacher of D.El.Ed programme of District Institute of Education and Training (DIETs) of Assam constitutes the population of this study. There are 23 DIETs functioning under SCERT in Assam spreading across 23 districts of the state. There are no ethical issues related with the population of the study.

Table No. 3.1: List of DIETs in Assam

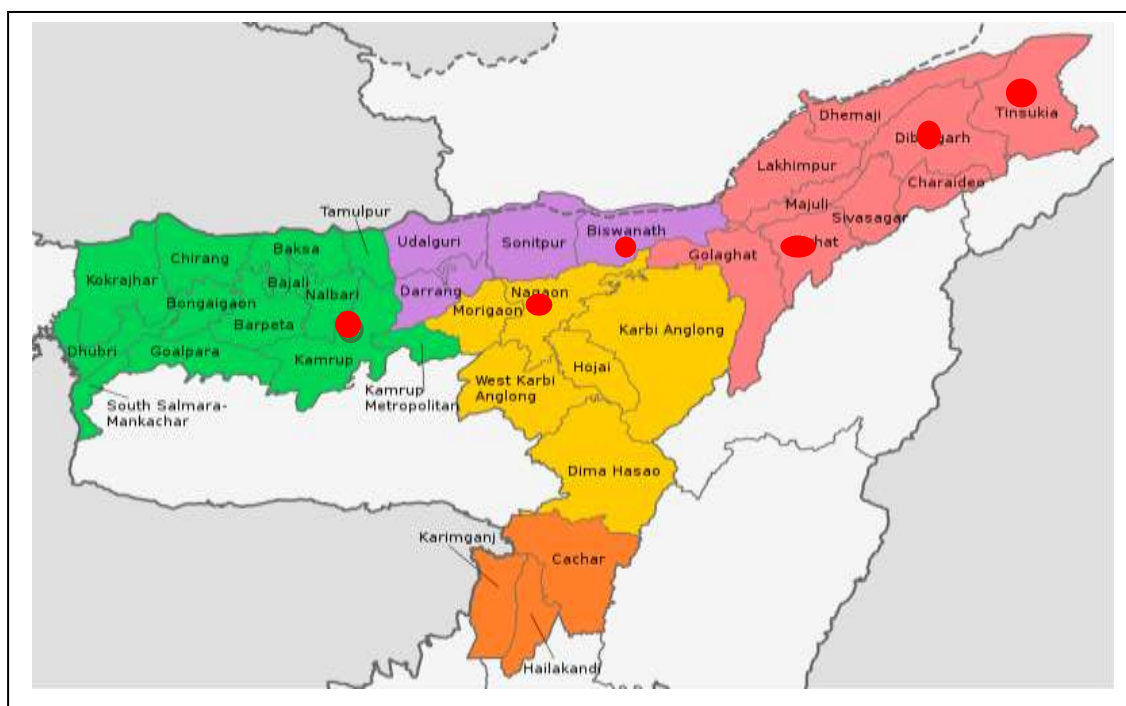
Name of DIETs	Districts	Name of DIETs	Districts
1. DIET, Kamrup, Mirza	Kamrup	2. DIET, Golaghat, Dergaon	Golaghat
3. DIET, Sonitpur, Biswanath Charali	Biswanath Charali	4. DIET, Jorhat, Titabor	Jorhat
5. DIET, Nagaon, Samuguri	Nagaon	6. DIET, Karimganj, Kaliaganj	Karimganj
7. DIET, Kokrajhar	Kokrajhar	8. DIET, Morigaon	Morigaon
9. DIET, Cachar, Udharbond	Cachar	10. DIET, Nalbari	Nalbari
11. DIET, Goalpara, Dudhnoi	Goalpara	12. DIET, Hailakandi	Hailakandi
13. DIET, Dibrugarh, Chabua	Dibrugarh	14. DIET, Dhemaji	Dhemaji
15. DIET, Lakhimpur, Azad	Lakhimpur	16. DIET, Bongaigaon	Bongaigaon
17. DIET, Darrang, Dalgaon	Darrang	18. DIET, Tinsukia	Tinsukia
19. DIET, Barpeta, Howly	Barpeta	20. DIET, Karbi Anglong	Karbi Anglong
21. DIET, Dima Hasao (N.C. Hills)	Dima Hasao	22. DIET, Sivasagar, Sonari	Sivasagar
23. DIET, Dhubri, Golakganj	Dhubri		
Total No. of DIETs in Assam = 23			

3.4 Locale of the Study

The present study is conducted over six districts in Assam selected through simple random sampling method. The six districts are located in four different divisions of Assam namely North Assam division, Upper Assam division, Lower,

Assam division and Central Assam division. From North Assam division Biswanath Charali District, from Lower Assam division Kamrup Metro District, from Upper Assam, Tinsukia, Dibrugarh, and from Central Assam division Nagaon district are selected. The following map will locate the locations of the selected districts in Assam.

Figure No.3.2: Geographical location of the selected districts



(Source of Map: https://commons.wikimedia.org/wiki/File:Assam_districts_map.svg Under CC license)

3.5 Sample and Sampling Techniques of the Study

Sample is the representative unit of the population systematically selected by following a scientific method. In this study the sample constitutes of six out of 23 DIETs, from which 245 student teachers and 39 teacher educators have been taken as a final sample. The sample of the study are selected through multi stage sampling technique, at the first stage by using simple random sampling technique in which six DIETs were selected which was spreading over four divisions of Assam namely, North Assam division, Lower Assam division, Central Assam division and Upper Assam division. In the second stage 245 student teachers (students-teachers enrolled

in the second year from the selected DIETs) and 39 teacher educators (from the Pre-service teacher Education Department, PSTE) of these six DIETs were taken as final sample of the study using simple random sampling technique.

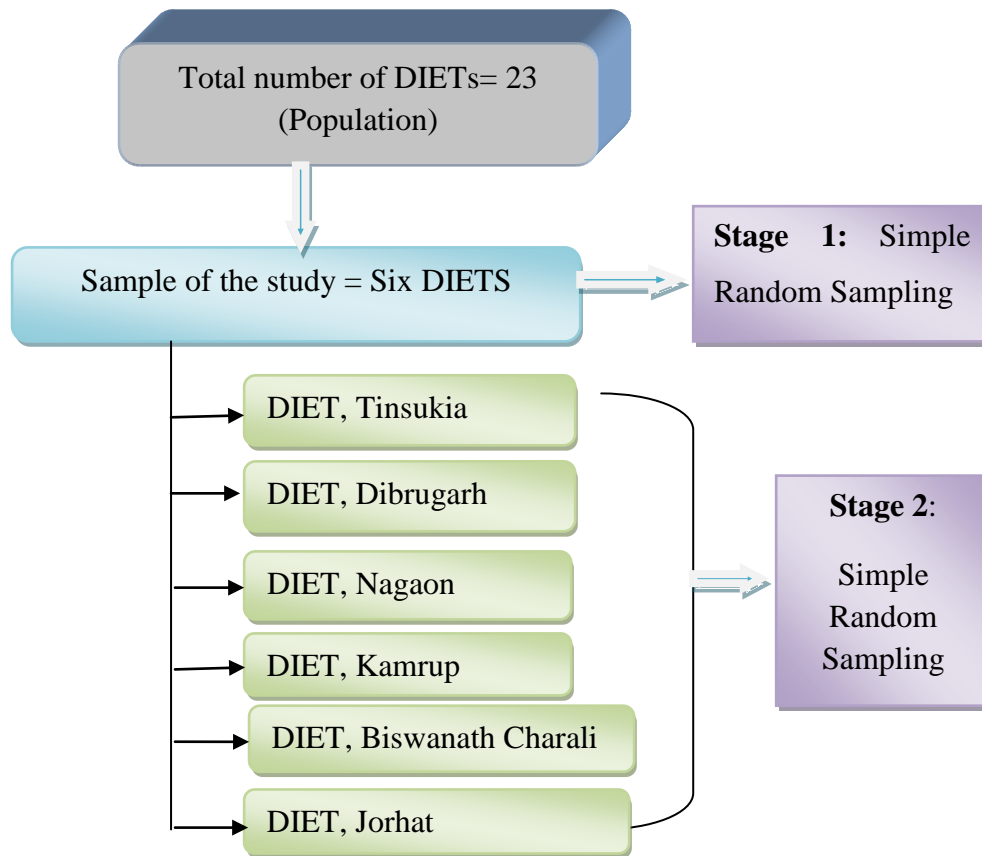


Figure No. 3.3: Sampling Techniques of the Study

3.7 Details of Distribution of the Collected Data

Table No. 3.2: Sample of the Study

Name of the DIETs	No. of Sample	
	Student teachers	Teacher Educators
1. DIET, Tinsukia	25	7
2. DIET, Nagaon, Samuguri	45	7
3. DIET, Dibrugarh, Chabua	50	6
4. DIET, Kamrup, Mirza	50	6
5. DIET, Sonitpur, Biswanath Charali	50	6
6. DIET, Jorhat, Titabor	25	7
Total	245	39
Total Sample Size	245+39 = 284	

Table No. 3.3: Gender wise distribution of sample of Teacher Educators

Sl. No.	Name of the Institute	Male Respondents	Female Respondents	Total Respondents
	DIET, Tinsukia (Sri puria)	2	5	7
	DIET, Dibrugarh (Chabua)	3	3	6
	DIET, Nagaon (Samaguri)	0	7	7
	DIET, Sonitpur (Biswanath Charali)	1	5	6
	DIET, Kamrup (Mirza)	2	4	6
	DIET, Jorhat (Titabor)	4	3	7
Total Sample size		12	27	39

Table No. 3.4: Gender wise distribution of sample of Student Teachers

Sl. No.	Name of the Institute	Male Respondents	Female Respondents	Total Respondents
1	DIET, Tinsukia (Sri puria)	6	19	25
2	DIET, Dibrugarh (Chabua)	9	41	50
3	DIET, Nagaon (Samaguri)	8	37	45
4	DIET, Sonitpur (Biswanath Charali)	27	23	50
5	DIET, Kamrup (Mirza)	8	40	48
6	DIET, Jorhat (Titabor)	8	19	27
Total Sample size		66	179	245

Table No. 3.5: Level of education wise distribution of sample of Teacher Educators

Sl. No.	Level of education	Teacher educators
1	Graduate	1
2	Post Graduate	24
3	Post Graduate + B. Ed	3
4	M. Ed	4
5	M Phil	2
6	Ph. D	5
Total Number of Teacher Educators		39

Table No. 3.6: Gender wise distribution of sample of Student Teachers

Sl. No.	Name of the Institute	HS		Graduate		Post-Graduate		Total
		Male	Female	Male	Female	Male	Female	
1	DIET, Tinsukia (Sri puria)	0	0	4	17	2	2	25
2	DIET, Dibrugarh (Chabua)	1	0	7	41	1	0	50
3	DIET, Nagaon (Samaguri)	0	0	7	28	1	9	45
4	DIET, Sonitpur (Biswanath Charali)	1	1	23	19	3	3	50
5	DIET, Kamrup (Mirza)	1	5	7	18	0	17	48
6	DIET, Jorhat (Titabor)	1	3	7	16	0	0	27
Total		(4+9= 13)		(55+ 139= 194)		(7+ 31= 38)		245

**HS – Higher Secondary level*

3.8 Tools used for Data Collection

In any research well-structured and systematically developed tools are the most important part. The stated objectives are addressed and information related to it is gathered through the tools developed by the researcher. In this study, the following tools were adopted for collecting data.

1. Document analysis was used to collect and analyse the data to study the first objective.
2. A checklist was developed by the researcher to study the second objective of the study.
3. A semi-structured questionnaire was developed by the researcher to study the third objective.

4. A standardized tool developed by Umesh Sharma, Tim Loreman and Chris Forlin “Teacher Efficacy for Inclusive Practice (TEIP) Scale” was used to study the fourth objective.
5. Semi- structured interview schedule was developed by the researcher for the teacher- educators.

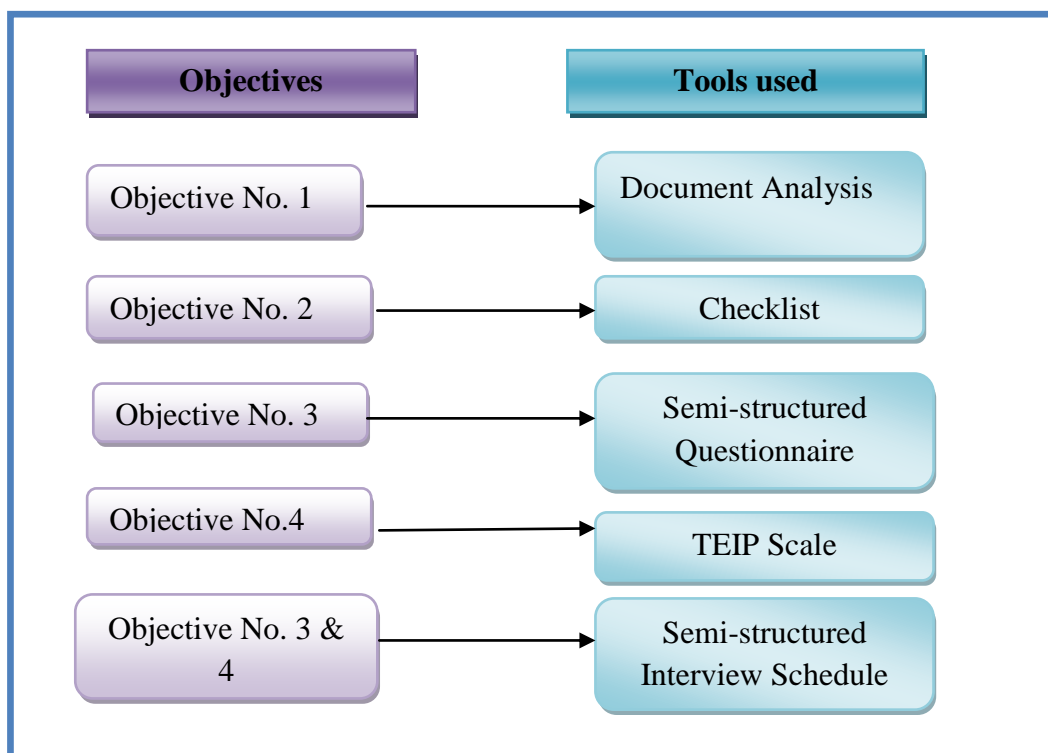


Figure No. 3.4: Tools used for Data Collection

3.8.1 Description of the Tools used for Study

3.8.1.1 Document Analysis

Document analysis is procedure of reviewing and evaluating written documents either electronics or printed. Document analysis is often used as a qualitative method of data analysis. Mixed method studies also uses data analysis as technique. Analyzing documents mainly includes coding content into themes similar to how focus group or interview transcripts are analyzed (Bowen, 2009). It is also helpful in corroborating data or triangulating the data for providing the researcher a better opportunity for detailed analysis.

To study the first objective of the document analysis method has been adopted for which D. El. Ed curriculum of DIETs have been obtained from the SCERT website. The researcher prepared a data sheet for analyzing the whole curriculum

including theory, practicum and internship. The researcher has also set four themes for analysing the curriculum. These were finalised keeping in view the guidelines given by NCFTE 2009, RPWD 2016 and NEP 2020. The four themes are-

- a. Helping students in identification of children with special needs and SEDGs.
- b. Preparing student teachers to adopt and modify the teaching practices as per the needs of an Inclusive classroom.
- c. Enabling student teachers to assess students in an Inclusive classroom.
- d. Working in Collaboration with the professionals, teachers' students and community for building an Inclusive set-up.

Keeping in view the above themes the researcher have finalised the following criteria for analyzing the curriculum.

- a. **Overtly related to Inclusive Education:** Contents which are directly related to Inclusive Education.
- b. **Covertly related to Inclusive Education:** Contents which are indirectly signifying to Inclusive Education.
- c. **Not related to Inclusive Education:** Contents which are not at all related to Inclusive Education.

According to the criteria final data sheet was prepared (table No. 4.1.1 to table No. 4.1.29) for analyzing the curriculum and results were discussed accordingly.

3.8.1.2 Checklist on Infrastructural and Human Resources for Inclusive Set-up

The checklist is a fundamental tool consisting of a predetermined list of actions or objects. Existence of behaviour can be determined by marking either affirmative or negative, while the quantity or category of items can be specified by inserting the corresponding number or term. Alternatively, a tick can be placed in the designated area for each instance of behaviour observation (Best & Kahn, 2006).

A checklist was developed by the researcher for studying the Infrastructural and Human Resources at various DIETs of Assam. The checklist constitute of two major dimensions such as Infrastructural facilities and Human Resource facilities. This checklist constitute of 37 items. The responses were categorized as YES/NO

type. The checklist was sent to five experts from the same field and after receiving the expert opinion content validity was established for this tool.

3.8.1.3 Questionnaire on Perception towards Inclusive Education

Questionnaire is extensively used in the field of research and it is a useful instrument for collecting survey information (Cohen, Morrison & Manion, 2011). Questionnaire can be administered even in the absence of the researcher and it can gather a large number of data. The person administering the instrument has an opportunity to establish rapport, explain the purpose of the study, and explain the meaning of items that may not be clear (Best & Kahn, 2006). It can also be administered on wide range respondents.

The present study also employed a questionnaire to study the perception of the student teachers and teacher educators towards IE.

- **Determining the dimensions of the tool**

A semi-structured questionnaire was developed by the researcher for studying the perception of the student teachers and teacher educators towards Inclusive Education. The questionnaire has eight dimensions namely (a) Concept of Inclusive Education and Inclusive Classroom (b) Infrastructural Related to IE (c) Classroom Management of IC, (d) Psychological and Behavioural Aspects of Students in IE, (e) Curriculum for IE, (f) Pedagogy for IE, (g) Co-curricular activities in IE, (h) Teachers and Teacher training for IE and (i) Role of Administration in Inclusive Teacher Education.

- **Framing the items of the tool**

After finalizing the dimensions of the perceptions tool towards Inclusive Education, the researcher have conducted a thorough review of literature statements or items of the questionnaire were formed related to the perception of pre-service student teachers and teacher educators. Under the above mentioned dimensions 82 items were prepared; both close ended and open ended. Every item of this tool was focused to gather true responses of the respondents.

- **Expert opinion on the tool and Content Validity**

After formulation of the items the questionnaire was sent to the experts from the field of education having expertise in research and in Inclusive Education. From the comments and the opinion provided by the experts items of this tool were modified accordingly. As suggested by the experts few overlapping items were removed, some of the items were a little vague in carrying its meaning therefore, those items were reframed. The experts had also pointed out a few items those were added in the tool. After this exercise, the final questionnaire has 53 items related to nine themes in the questionnaire.

- **Validity**

After getting the opinion from five experts from the field of Inclusive Education the tool was finalized as per the comments of the experts, items were reframed, omitted and added to the questionnaire. Content validity of the tool was established as per the review and suggestions from the experts.

- **Try out**

The researcher have conducted a preliminary try out on a sample of 50 student teachers and 10 teacher educators for the developed questionnaire to eliminate all the language related difficulty and to check the feasibility of the questionnaire. The responses of the questionnaire were to be marked as 'YES' and 'NO' and specify their responses in their own words. For the open ended questions respondents were given due time to fill up the questionnaire. Responses were recorded for analyzing and finalizing the tool.

- **Scoring and Analysis of the Questionnaire**

The items of the Questionnaire are both close-ended and open-ended. The close ended items are of YES/NO type. The Close ended items are analyzed by calculating frequency and percentage; the open-ended items were analysed by thematic content analysis.

3.8.1.4 Teacher Efficacy for Inclusive Practice (TEIP) Scale developed by Umesh Sharma, Tim Loreman and Chris Forlin

Teachers Efficacy for Inclusive Education Scale is developed by Umesh Sharma, Tim Loreman and Chris Forlin in the year 2011. The scale was developed to study the self-efficacy of the teachers in teaching in an Inclusive environment and it is more focused on teaching practices adopted by the teachers. Samples of 609 pre-service teachers were selected from four countries Canada, Australia, Hongkong and India for developing the scale. This is a six point Likert scale with responses as Strongly Disagree = 1, Disagree = 2, Disagree somewhat = 3, Agree somewhat = 4, Agree = 5 and Strongly Agree = 6. The value of score ranges from 18 to 108 high range of scores indicates high sense of perceived self-efficacy of pre-service teachers for teaching in an inclusive classroom. This scale covers three major dimensions i.e. Efficacy to use inclusive instructions, Efficacy in collaboration and Efficacy in managing behaviour. The TEIP scale is a valuable tool for assessing the perceived efficacy of participants in three key areas, making it a useful evaluation instrument for determining whether pre-service teachers have achieved a satisfactory level of perceived efficacy prior to completing their teacher training programmes (Sharma, etal, 2011). The scale has reliability coefficient of 0.89 and it is suitable for using in the Indian context. The present measuring instrument is constructed from a socio-cultural perspective of diversity, as opposed to a medical model of deviance, and is deemed appropriate for the purpose of measurement. The preliminary results suggest that the scale exhibits strong validity and reliability. Conducting additional research across diverse cultural and contextual settings would facilitate a more rigorous assessment of the efficacy of the scale and its appropriateness for gauging teacher effectiveness in promoting inclusive education (Sharma, Loreman, & Forlin, 2011).

Table No. 3.7: Dimension wise description of Items of the scale

Dimensions of TEIP scale	Efficacy in managing behavior	Efficacy in collaboration	Efficacy in Inclusive Instruction	Total Items
Items	1, 2, 7, 8, 11, 17	3, 4, 9, 12, 13, 16	5, 6, 10, 14, 15, 18	18
Total	6	6	6	

Table No. 3.8: Norms for Interpretation for TEIP scale

Sl. No.	Raw score range	Range of z-scores	Levels of self-efficacy
1	97 and above	+ 1. 26 and above	Extremely high level of self- efficacy
2	77 – 96	+0.51 to + 1.25	High level of self- efficacy
3	50- 76	-0.50 to + 0.50	Moderate level of self-efficacy
4	30- 49	-0.51 to -1.25	Low level of self-efficacy
5	29 and below	-1.26 and below	Extremely low level of self- efficacy

3.8.1.5 Interview Schedule for Teacher Educators

An interview schedule was developed by the researcher for the teacher educators to gather information related to their perception and self-efficacy towards Inclusive Education, opinion towards preparing teachers towards Inclusive Education and about the curriculum of the teacher education programme. The developed Interview schedule was sent to the experts and after seeking the expert opinion and establishing content validity the final interview schedule was prepared by eliminating and reframing certain questions.

3.9 Procedure of Data Collection

The curriculum of 2 years D.El.Ed programme for document analysis was obtained from SCERT Assam website.

A permission issued by the department head was given to all the principals of DIETs in order to seek permission for collection of data from their respective institutes. Consent of the head of the institutions of each sample DIETs were taken before the data collection. Permissions were taken from the teacher educators and the student teachers as well for collecting data. The researcher also took appointments from the teacher educators to get interview from them.

The researcher have collected data both offline and online mode as the data collection process started during the COVID-19 pandemic and institutions were working remotely. At the start of the data collection process the researcher had

developed Google forms of the TEIP scale and distributed them among the respondents (student teachers and teacher educators) through e-mails and collected responses. Later, researcher had visited the field personally and distributed the questionnaires among the respondents. Data had been collected from the student teachers after their regular classes were over. And from teacher educators questionnaires were given to them and appropriate time was given to the respondents to fill-up the questionnaires. By taking prior permission and appointment a time has been finalized and interview had been taken from the teacher educators. Interviews were taken from fifteen teacher educators randomly. Over multiple visits to the field data collection process had been completed within June 2021 to March 2022.

A rich dataset were available at the end of the data collection process both in quantitative and qualitative form. Collected data were tabulated systematically objective wise and group wise under each theme using an excel sheet for further analysis.

3.10 Techniques used for Data Analysis

In this study to analyse the collected data both quantitative and qualitative data analysis techniques have been adopted. Objective wise data analysis techniques have been presented in the following table.

Table No. 3.9: Objective wise Techniques of Data Analysis

Sl. No.	Objective of the study	Qualitative and Quantitative Techniques used for data analysis
1	Objective No. 1	Document analysis, frequency and percentage
2	Objective No. 2	Content analysis, frequency and percentage
3	Objective No.3	Content analysis, frequency and percentage
4	Objective No. 4	t-test

a. Document Analysis: To study the first objective of the study document analysis method has been adopted. The detailed procedure of document analysis is explained in the page no. 89 to 90.

b. Content Analysis: Content analysis is a systematic examination of text and visual collected from the field to analyse their prominent meaning (Saldana, 2011). In this study, the data collected from interview and open-ended questionnaire were

analysed using content analysis. Data were categorised on the basis of themes developed by the researcher. Themes for the content analysis were developed after rigorous reviews of existing literature in the present area of study and themes were also validated by the experts. Content analysis in this study mainly served the purpose of providing a detail description of the adaptation of inclusive educational practices in the Elementary Teacher Education Program in Assam.

In order to enhance the trustworthiness of the data the researcher has used field notes from the data collection process. Field notes fulfil a vital role in along with research diaries and interview transcripts to ensure credibility (Lincoln & Guba, 1985).

- c. Frequency and Percentage:** Frequency and percentage analysis has been used to analyse the infrastructural facilities and perception of student teachers and teacher educators towards inclusive education.
- d. T- test:** t- test have been employed to study the level of self-efficacy of student-teachers and teacher educators.