



Diet Effectiveness in Teacher Education: A Regional Assessment of the West Zone of Arunachal Pradesh

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Abstract- The emergence of Digital Humanities (DH) has fundamentally transformed the methods and objectives of literary studies. Integrating computational technologies with traditional humanistic inquiry, Digital Humanities enables scholars to analyse literary texts at unprecedented scales while preserving the interpretative richness of close reading. The rapid advancement of Artificial Intelligence (AI), particularly machine learning and Natural Language Processing (NLP), has further revolutionized textual analysis by facilitating automated interpretation, thematic mapping, sentiment analysis, authorship attribution, and stylistic evaluation. This paper examines the evolving relationship between Digital Humanities and literary studies, highlighting how AI-driven methodologies are reshaping literary criticism without replacing the critical insight of human scholars. It argues that AI should be viewed as an intellectual collaborator that enhances literary research by expanding analytical possibilities while preserving the centrality of human interpretation. The study also explores ethical concerns, methodological challenges, and future directions of AI-assisted literary scholarship.

Keywords- DIET effectiveness, teacher education, Arunachal Pradesh, West Zone, teacher attitude, elementary education

I. Introduction

The quality of school education is inseparable from the quality of its teachers, which in turn depends on the institutions that prepare and support them. The Education Commission (1964–66) singled out teacher competence and character as the most decisive factor in educational quality, a finding that subsequently shaped the National Policy on Education, 1986 (NPE 1986). Before NPE 1986, academic support for elementary and adult education rested primarily with national and state-level bodies, the National Council of Educational Research and Training (NCERT), the National Institute of Educational Planning and Administration (NIEPA), and the State Councils of Educational Research and Training (SCERTs), leaving a considerable gap at the sub-state level.

NPE 1986 sought to close this gap by creating a third, district-level tier of academic support: the District Institute of Education and Training (DIET), to be established in every district. Implementation began in 1988–89; in Arunachal Pradesh, DIETs were set up in successive phases starting in 1989–90, and the state now operates eleven DIETs in total, of which six, Dirang, Seppa, Naharlagun, Yachuli, Daporijo, and Kamki, serve the fifteen districts that constitute the West Zone, the focus of the present assessment.



II. Review of Related Literature

Empirical research on teacher education and the functioning of DIETs in India is extensive at the national level, yet considerably thinner for the North-Eastern states. Investigations into prospective and in-service teachers' attitudes toward the teaching profession, carried out in Punjab, Puducherry, and other regions, have generally indicated that structured training yields measurable improvements in attitude, although the influence of demographic factors such as gender and locality has been inconsistent across studies. Studies focusing on DIET-specific outcomes, including those conducted in Meghalaya and Assam, have documented enhanced teaching competency following pre-service training and generally adequate infrastructure, but these investigations remain limited in number and regional coverage.

With respect to Arunachal Pradesh, the existing literature is both sparse and outdated. Early scholarship traced the historical evolution of teacher education in the state and identified a shortage of institutions able to satisfy the demand for trained teachers, alongside the persistent absence of dedicated pre-primary teacher training. A more recent study assessed teaching effectiveness among secondary school teachers in Tawang district and reported significant gender-based differences, yet no significant divergence between trained and untrained educators. A subsequent comparative study in Namsai district, by contrast, found that trained teachers employed teaching aids and classroom management approaches more effectively than their untrained peers. Nevertheless, no identified research has conducted a regional assessment of DIET effectiveness within the West Zone, nor has any examined the relationship between institutional capacity, as indicated by staffing and enrolment, and teacher-reported effectiveness.

III. Need and Significance of the Study

- It offers an institutionally grounded, regionally specific assessment of DIET functioning that complements the predominantly national-level administrative reviews undertaken by NCERT and NUEPA.
- It consolidates institutional profile data for all six DIETs in the West Zone into a single systematic account, thereby facilitating cross-institutional comparisons.
- It identifies concrete structural and functional deficiencies that state and district authorities can address directly.
- It adds to the remarkably scant body of research on teacher education in Arunachal Pradesh.
- It advances a research framework that SCERT, DIET administrators, and doctoral researchers can subsequently extend into a full empirical study.

IV. Statement of the Problem

The present study addresses the assessment of District Institutes of Education and Training (DIETs) in the West Zone of Arunachal Pradesh. The problem under investigation is formally stated as: "DIET Effectiveness in Teacher Education: A Regional Assessment of the West Zone of Arunachal Pradesh."



V. Operational Definitions

DIET Effectiveness refers to the extent to which a District Institute of Education and Training fulfils its mandated functions, as reflected in its institutional infrastructure, staffing adequacy, programme reach, and the attitude of teachers and teacher educators towards its functioning.

West Zone denotes the fifteen districts of Arunachal Pradesh, namely Tawang, West Kameng, East Kameng, Kurung Kumey, Kra-Daadi, West Siang, Lower Siang, Upper Subansiri, Papum Pare, Kamle, Lower Subansiri, Pakke-Kessang, Lepa-Rada, Shi-Yomi, and the Itanagar Capital Region, served by six DIETs.

Teacher Attitude indicates the favourable or unfavourable disposition of teachers and teacher educators towards the functioning of their affiliated DIET, as measured by a structured attitude scale.

VI. Objectives of the Study

1. To assess the institutional capacity and infrastructural profile of DIETs functioning in the West Zone of Arunachal Pradesh.
2. To evaluate the effectiveness of pre-service and in-service programmes offered by these DIETs.
3. To examine the attitude of teachers and teacher educators towards DIET functioning as an indicator of institutional effectiveness.
4. To compare DIET effectiveness indicators across the six institutions of the West Zone in terms of staffing ratio, enrolment capacity, and feeder-district coverage.
5. To identify systemic and regional constraints affecting DIET performance in the West Zone.

VII. Hypotheses

The following null hypotheses are proposed for empirical testing in the subsequent phase of the research:

- There is no significant difference in the attitude of teachers and teacher educators towards DIET functioning across the six DIETs of the West Zone.
- There is no significant difference in attitude towards DIET functioning between male and female teacher educators.
- There is no significant difference in attitude towards DIET functioning between respondents from rural and urban locales.

VIII. Delimitations of the Study

The present study is delimited to the six District Institutes of Education and Training (DIETs) serving the West Zone of Arunachal Pradesh; DIETs in the East Zone are not covered. The assessment is confined to institutional profile data and the attitudes of teachers and teacher educators, and classroom-level observation lies outside its scope. The proposed sample is further restricted to pre-service trainees in the D.El.Ed.



programme and in-service teacher educators attached to the six West Zone DIETs during the 2023–25 and 2024–26 academic sessions.

IX. Research Methodology

Method of Study

The proposed study adopts a survey-cum-normative method, combining institutional documentation with primary data collected from teacher educators and teacher trainees. This approach is intended to generate both structural and perceptual measures of DIET effectiveness.

Population and Sample

The population comprises all pre-service D.El.Ed. trainees and in-service teacher educators attached to the six West Zone DIETs, along with the Principal of each institution. Table 1 presents the staffing profile of the six DIETs, and Table 2 specifies the proposed sample coverage in terms of pre-service enrolment and the in-service teacher educator complement at each institution. Sampling will be carried out through a stratified random procedure, with strata defined by DIET, gender, and locality.

Table 1: Staffing Profile of DIETs in the West Zone of Arunachal Pradesh

Sl. No.	DIET	Feeder District(s)	Principal	Lecturers/Sr. Lecturers	Total Staff
1	Dirang	West Kameng, Tawang	1	4	5
2	Seppa	East Kameng, Kurung Kumey, Pakke-Kessang, Kra Daadi	1	4	5
3	Naharlagun (ICR)	Itanagar Capital Region, Papum Pare	1	6	7
4	Yachuli	Lower Subansiri, Kamle	1	4	5
5	Daporijo	Upper Subansiri, Kamle	1	3	4
6	Kamki	West Siang, Lepa-Rada, Shi-Yomi, Lower Siang	1	4	5

Table 2: Pre-Service Enrolment and In-Service Teacher Educator Base by DIET (Proposed Sample Frame)

Sl. No.	DIET	Feeder District(s)	D.El.Ed. Enrolment (2023–25)	In-Service Teacher
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				Educators (M/F)
1	Dirang	West Kameng, Tawang	46	50 / 50
2	Seppa	East Kameng, Kurung Kumey	41	50 / 50
3	Naharlagun (ICR)	Itanagar Capital Region, Papum Pare	47	50 / 50
4	Yachuli	Lower Subansiri, Kamle	50	50 / 50
5	Daporijo	Upper Subansiri, Kamle	50	50 / 50
6	Kamki	West Siang, Lepa- Rada, Shi-Yomi	50	50 / 50

As indicated in Table 1, staffing levels across the six DIETs are modest, ranging from four staff members at Daporijo to seven at Naharlagun, with the latter serving the relatively populous Itanagar Capital Region and Papum Pare district. Table 2 presents the proposed sampling frame: pre-service enrolment is expected to range between 41 and 50 trainees per DIET, and each institution's in-service teacher-educator complement comprises 50 male and 50 female educators. This balanced composition is intended to support the gender-based comparison specified under Objective 3 and Hypothesis 2.

Tools to be Used

- **Teacher/Teacher-Educator Attitude Scale:** a researcher-constructed Likert-type instrument designed to measure attitude towards DIET functioning across dimensions such as organisational administration, pre-service teacher education, in-service training, resource and support services, and infrastructure.
- **Structured Questionnaires:** to collect data on physical infrastructure, programme effectiveness, and the problems encountered by teacher trainees and teacher educators.
- **Rating Scale:** to record in-service teachers' perceptions of the DIET's contribution to their professional knowledge and skills.
- **Interview Schedule:** to be administered to DIET Principals in order to document institutional functions and administrative challenges.

Validity and Reliability

Content validity of the attitude scale will be established through expert review by teacher educators and subject specialists, followed by item analysis to retain items with adequate discriminative power.



Reliability will be estimated using Cronbach's alpha and the split-half method prior to full administration, in accordance with standard practice for researcher-constructed attitude scales.

Procedure of Data Collection

Data will be collected only after obtaining formal permission from SCERT, Arunachal Pradesh, and the Principals of the six participating DIETs. The instruments will be administered to teacher educators and trainees in a group setting during regular institutional hours, with clear instructions provided and confidentiality of responses assured. This will be followed by individual interviews with the DIET Principals.

Statistical Techniques to be Used

- **Descriptive statistics:** mean and percentage, to describe the institutional and attitudinal profile of the sample.
- **Inferential statistics:** t-test and chi-square, to compare two independent groups such as gender or locality; one-way ANOVA, to compare across the six DIETs.

X. Discussion and Implications

Even prior to the completion of primary data collection, the institutional profile compiled here indicates that the DIETs of the West Zone operate with a modest staffing base relative to the geographical spread of their feeder districts, several of which include difficult and sparsely connected terrain. This constraint has direct implications for the frequency and quality of field interaction, academic monitoring, and in-service support that each DIET can realistically extend to the schools under its jurisdiction. The framework proposed in this paper would enable SCERT and DIET administrators to identify which specific institutions, and which specific functional dimensions, require the most urgent strengthening, rather than relying on state-level averages that may obscure meaningful variation across the six DIETs of the West Zone.

XI. Conclusion

DIETs remain the principal mechanism through which elementary teachers are trained and supported in Arunachal Pradesh, yet systematic research on the functioning of the West Zone DIETs has been strikingly limited. This paper has presented an institutional profile of the six DIETs serving the zone, examined the national and state policy provisions that shape their functioning, reviewed the existing literature on teacher education in the region, and proposed objectives, hypotheses, and a methodology for a comprehensive empirical study. Carried forward into full empirical research, this framework would contribute meaningfully to strengthening teacher education in one of India's most geographically and culturally distinctive states, with particular benefit to the West Zone and the DIETs that serve it.

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