UTTAR PRADESH SITUATIONAL ANALYSIS REPORT

DISTRICT INSTITUTE OF EDUCATION AND TRAINING (DIET)

JANUARY 2023

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Abbreviations

ARP	Academic Resource Person
BEO	Block Education Officer
BRC	Block Resource Center
BRP	Block Resource Person
BSA	Basic Shiksha Adhikari
BTC	Basic Training Certificate
CoE	Centre of Excellence
CRC	Cluster Resource Center
CSSTE	Centrally Sponsored Scheme on Teacher Education
CTE	Colleges of Teacher Education
D.Ed	Diploma in Education
D.El.Ed	Diploma in Elementary Education
DCT	District Coordinator Training
DEO	District Education Officer
DIET	District Institute of Education & Training
DIKSHA	Digital Infrastructure for Knowledge Sharing
HDI	Human Development Index
IASE	Institutions of Advanced Study in Education
ICT	Information and Communication Technology
ITE	Initial Teacher Education
JRM	Joint Review Mission
MHRD	Ministry of Human Resource Development
NCERT	National Council of Educational Research and Training
NCF	National Curriculum Framework

NCFTE	National Curriculum Framework for Teacher Education
NEP	National Education Policy
NPE	New Policy on Education
NGO	Non Governmental Organization
NIPUN BHARAT	National Initiative for Proficiency in Reading with Understanding and Numeracy
NISHTHA	National Initiative for School Heads' and Teachers' Holistic Advancement
PCK	Pedagogical Content Knowledge
PINDIC	Performance Indicators
PMMMNMTT	Pandit Madan Mohan Malaviya National Mission on teachers and Teaching
RTE	Right to Education
SC	Scheduled Caste
SCERT	State Council of Educational Research and Training
SDG	Sustainable Development Goal
SPIPD	State Planning Institute Planning Department
SRG	State Resource Group
SSA	Sarva Shiksha Abhiyan
ST	Scheduled Tribes
SUPW	Socially Useful Productive Work
TEI	Teacher Education Institution
TLM	Teaching Learning Material
TOR	Terms of Reference
UP	Uttar Pradesh

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Executive Summary

Teachers are essential to the education process and quality education, especially now that every child in India has the right to attend school. The cornerstone of educational reconstruction is the enhancement of teachers' professional standing and skill sets. Education institutions play a crucial role in educating teachers with a variety of skills and competencies for completing a wide range of jobs. These institutions' pre-service and in-service training contribute considerably to the empowerment of teachers. The SDG4 of the United Nations emphasises the necessity of having and investing in teachers with professional training in order to offer equal and inclusive education. The relationship between the quality of teaching, teachers, and teacher educators and the quality of education is direct. In addition, the National Education Policy [NEP] (GoI, 2020) emphasises the value of educators and the need to empower them. Teacher Education institutes play a key role in professional development and providing potential teachers with learning opportunities. However, implementing such robust programmes and providing local school-based academic support to teachers requires strong district and sub-district level institutions with requisite knowledge and skills, including ICT integration and experiential pedagogies for developing 21st-century skills in students. Since the RtE Act of 2009 went into effect, the inclusion of all students with various talents and special needs in the general education system has been a central policy objective. Developing inclusive pedagogies and favourable attitudes towards inclusion among teachers is crucial.

Following the recommendations of the National Policy on Education (NEP), 1986, and the Centrally Sponsored Scheme on Teacher Education (CSSTE), District Institutes of Education and Training (DIETs) were established at the state and district levels. By establishing teacher education institutes at the district level for pre-service and in-service teacher education, school assistance, and research, the CSSTE envisioned enhancing the quality of education at the elementary and secondary levels of schooling. The Department of School Education and Literacy, MHRD, Government of India, amended the CSSTE in 2012, and on the basis of a fund-sharing arrangement between the centre and the states, implemented it throughout the states and union territories. Access to high-quality education became a constitutional right in 2009 after the Right to Education (RtE) Act was approved. The State Council of Educational Research and Training (SCERT) has been designated as the state's academic authority under the RtE Act 2009 (TISS, 2017).

DIETs are essential district-level institutions that contribute considerably to the development of teachers. For teacher education reform initiatives, it is essential to comprehend the functioning of DIETs at the macro, meso, and micro levels, as well as their functions and academic significance in relation to the state education system. The current study, titled 'Situation analysis of the DIETs in Uttar Pradesh,' not only facilitated the understanding and execution of teacher education reforms in the state but also contributed to the realisation of the NEP 2020 (GoI, 2020) vision in other Indian states. The main objectives of the study were to examine the design, adoption, and implementation of the existing pre-service curriculum to inform future curricula;

the institutional features of infrastructure and staffing in terms of needs, availability, and use to facilitate the operation and activities of DIETs as major institutes for academic growth and support of district-level teachers. Specifically, this study aimed to answer the following questions, as listed in the TOR,

1. What are the highlights and gaps of the existing D.El.Ed curriculum vis-à-vis research-based teacher education models, NCFTE 2009 framework and the recommendations of the NEP 2020?
2. How efficient and effective are teacher development processes and implementation (pre-service and in-service), programmes, and other DIET activities undertaken in the DIETs?
3. What are the availability, utilisation and needs of physical resources and staffing (faculty and staff) of DIETs?
4. What gaps must be filled for DIETs to be developed and function as Centres of Excellence in Teacher Education?

Summary of Findings

The review found that while there are a few noteworthy aspects of the D.El.Ed curriculum, such as value orientation, field-based activities, and internships to connect theory and practice, as well as an attempt to incorporate inclusive education, ICT, and education theory and practice, the curriculum is largely obsolete. This was made clear through the reading and analysis of existing policy papers, the most recent research-based trends in pre-service teacher education, and the field interviews and observations. Specifically, the curriculum structure and programmes of study need to be strengthened:

- a strong thrust towards developing teachers as reflective, humane and autonomous practitioners who can address social justice concerns (GoI, 2020, NCTE, 2009)
- the development of teachers' Pedagogical Content Knowledge(PCK) and the introduction of teachers to research-based PCK in the various subject domains, especially for upper primary teaching (UNESCO, 2021)
- addressing the latest trends and research in theory and practice related to inclusive, ICT and gender education (GoI, 2020)
- opportunities for self and professional practice skills to address prospective teacher's deep-rooted beliefs and attitudes towards learners and learning to be effective professionals (NCTE, 2009, NCERT, 2013)
- a robust internship programme to enable linkages between theory and practice (NCTE, 2009)

The processes and actions conducted in DIETs are effective. The states have implemented and integrated digital tracking and monitoring technology, particularly for the supportive supervision and mentoring of schools and teachers. The NIPUN BHARAT programme is also being implemented well, with teachers, school principals, education stakeholders, and DIET faculty

collaborating to fulfil the program's objectives. The NIPUN BHARAT App appears to be utilised effectively. In general, the administration of education in DIETs is effective. Still, it might be made more so by improved use of digital technology, analysis of acquired data, and application of the analysis to enhance the implementation of processes and activities.

However, the effectiveness of the DIET programmes has numerous weaknesses. Insufficient academic skills and exposure to research-based innovation and new pedagogies are primarily responsible for the gaps. Many activities, such as the internship component of the pre-service curriculum and the academic support and mentorship provided to schools and teachers, are performed mechanically or routinely. DIETs operate in solitude and primarily execute centrally scheduled activities. We did not witness any advances that specifically addressed contextual and local district challenges. The in-service training does not offer holistic and need-based opportunities for teachers' professional growth, and the synergy between pre-service and in-service activities is minimal.

The supply of necessary infrastructure, teacher education resources, and personnel is drastically lacking. Inadequate infrastructure is a continuous problem that has not altered appreciably over the past decade. All of the DIETs we visited lacked basic facilities such as classrooms, staff rooms, access to clean and working bathrooms, potable water, and ICT equipment. In various DIETs, we noted proposals for new infrastructure construction, but none had been finished during our stay. In terms of ICT infrastructure and gadgets, library resources, and teaching learning materials like science and mathematics labs, digital resources, and other resources, DIETs are also under-resourced. The maintenance and utilisation of infrastructure and resources must also be rethought; where we did observe equipment, there was little evidence of upkeep and utilisation.

Additionally, DIETs are understaffed. With the exception of the junior lecturer position, which is filled up to 80%, all other posts are unfilled (less than 30% are filled). Due to insufficient human resources available to carry out DIET operations, the DIET faculty cannot perform to their fullest capacity. Those faculty members that are present are overworked; hence, their efficiency and effectiveness are not seen or appreciated. The absence of adequately staffed DIETs also prevents faculty from having the time to plan, strategise, and experiment with new ideas, preventing them from innovating or functioning as autonomous institutes.

In conclusion, the gaps and deficiencies observed from the situational analysis study, as described in the concluding section of chapter 4, are as follows: (1) an outdated D.El.Ed curriculum that needs to be updated to reflect the most recent policy and research; (2) the absence of a systemic in-service teacher training approach and poor linkages between pre-service, in-service, and school support activities; (3) Insufficient linkages between pre, primary, upper primary, and secondary schools; (4) weak mathematics and science teaching and learning; (5) lack of leadership development programme to enable DIETs to function as autonomous institutions at the district level; (6) DIETs work in isolation and do not leverage collaborations and partnerships; (7) a lack of professional development opportunities for DIET

faculty and district and block level officers to build academic and research rigour at the district level; (8) and finally, inadequate basic and digital infrastructure, support for its maintenance and staffing the DIETs and filling up the vacant posts.

Recommendations
In terms of infrastructure improvements, adequate staffing and capacity building of teacher educators, D.El.Ed curriculum, strengthening in-service teacher education, and continuous academic and mentoring support, there are significant shortcomings in the DIETs' ability to function as autonomous institutions at the district level. Uttar Pradesh (UP) is a vast state. Hence institutional development initiatives must be implemented in phases (GoI, 2015). The state has already formulated a strategy to transform certain DIETs into CoEs. We have presented six recommendations in four areas: infrastructure & staffing, pre-service education, in-service education, and school support. These recommendations are divided into three phases: short, medium, and long-term. Best Practices in each of the areas are provided for each recommendation in the concluding chapter.

(1) Renewal of D.El.Ed Curriculum: With the advent of the new NEP 2020, it is proposed that all stakeholders engage in a coordinated and comprehensive curriculum renewal exercise. The state could develop position papers and a full curriculum framework document making explicit their philosophy, strategy and viewpoint on teacher education. The programme should be led by an understanding of what good teaching is and how to attain it. Any future curriculum renewal process should incorporate all stakeholders and openly explain the programme's aims, goals, values, and positions, using the structure of the existing policy documents as a guide.

(2) Capacity building of teacher educators: There is a substantial gap in opportunities afforded to DIET faculty and other teacher educators (ARPs, SRGs) in the elementary school system. SCERT must facilitate long-term (master's and higher) and short-term (modular courses) opportunities for teacher educators to enhance their intellectual, professional, and practical abilities in primary education.

(3) Developing DIETs as active resource centres: DIETs must become active resource centres for elementary education, provide platforms for local material development and innovation, and establish communities of practice. Community mobilisation initiatives to incorporate community members and parents in the educational process must be undertaken for both pre-service and in-service students and instructors to use the labs and resources regularly.

(4) Develop databases, repositories and portals: This is the fourth recommendation. Essential to managing in-service teacher professional development, exchanging best practices and innovations, and establishing DIETs as district-level resources, research, and teacher education centres are robust databases and repositories.

(5) Create Institutional linkages, Collaborations and Partnerships: Through well-coordinated plans and discussions of mentoring, school improvement processes, pedagogical and academic challenges, and equity and inclusion concerns, the ties between DIETs, BRCs/CRCs, and schools must be enhanced. There is a need to build collaboration possibilities between DIETs in order to share best practices and innovations. It is necessary to build collaborations between NCERT and other universities and DIETs in order to keep up with the most recent trends in teacher education and to encourage robust local research in the DIETs. The NGO collaborations must be streamlined in order to provide teachers with access to and options for high-quality in-service professional development.

(6) Develop as decentralised autonomous institutions: Infrastructure and basic facilities must be improved. Appropriately constructed computer laboratories must be established. Vacancies in the academic, para-academic, and support staff must be filled. There is a need for increased involvement at the local or district level in the planning and production of annual budgets and allocation of funds. To stimulate more innovation, DIET principals require control over at least a portion of their budget. To develop principals and vice-principals as academic leaders, it is necessary to strengthen their capacity. The positions of principal, vice-principals, and all levels of faculty must be reinvented as academic rather than administrative, and a performance-based path from junior lecturer to DIET principal must be mapped out.

The need to focus on implementing policies and recommendations provided by several reports around the functioning of DIETs is urgent. UP has a large number of DIETs with active and ongoing pre-service, in-service and school supervision activities taking place. The scale of reform is large; hence, this study has recommended a phased approach towards developing DIETs so that the SCERT can prioritise actions and plans for implementing the recommendations. The state has already moved in a direction that enables a phased implementation towards developing all DIETs as Centres of Excellence in stages. This study will provide a framework for developing all DIETs as autonomous quality teacher education institutions at the district level in UP and potentially enable other states to follow and learn from its experiences.

Chapter 1: Introduction

1.1 Introduction

District Institute of Education and Training (DIETs), Colleges of Teacher Education (CTEs) and Institutions of Advanced Study in Education (IASEs) at the state and district levels were set up following the recommendations of the National Policy on Education, 1986 and the Centrally Sponsored Scheme on Teacher Education (CSSTE). The CSSTE envisaged improving education quality at the elementary and secondary levels of schooling by setting up teacher education institutes at the district level for pre-service and in-service teacher education, school support and research. The CSSTE was revised in 2012 and implemented by the Department of School Education and Literacy, MHRD, Government of India in states and union territories on a fund-sharing pattern between the centre and the states. In 2009 with the ratification of the Right to Education (RtE) Act, access to quality education became a constitutional right. Under the RtE Act 2009, the State Council of Educational Research and Training (SCERTs) have been declared the academic authority of the state (TISS, 2017[1]).

Teachers are central to the education process and quality education, especially since school education has become the right of every child in India. Improvement in teachers' status and professional competence is the cornerstone of educational reconstruction. Education institutions play a vital role in equipping teachers with various skills and competencies for handling multifarious tasks. Pre-service and in-service training imparted through these institutions contribute significantly to empowering teachers. The United Nations Sustainable Development Goal SDG4 emphasises the importance of having and investing in professionally trained teachers to provide equitable and inclusive education. The quality of education is directly related to the quality of teaching, teachers and teacher educators. The National Education Policy [NEP] (GoI, 2020) also underlines the importance of teachers and the need to empower them. Teacher Education institutions perform a significant function of professional development and providing learning experiences to prospective teachers. However, implementing such robust programs and providing local school-based academic support to

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[1] In 2017, Tata Institute of Social Sciences (TISS) evaluated the CSSTE. The study was carried out between August and September 2017 across 11 states, including Uttar Pradesh and 2 Union Territories. The study included field visits made to 12 SCERTs and 50 DIETs and interviews with key stakeholders.

teachers requires strong district and sub-district level institutions with requisite knowledge and skills, including ICT integration and experiential pedagogies for developing students' 21st-century skills. The importance of including all children of different abilities and special needs in the mainstream school system has been a critical policy thrust since the RtE Act 2009 came into force. Developing teachers' inclusive pedagogies and positive attitudes toward inclusion are vital.

1.2 Policy Context

In recent years, there has been a paradigm shift in developing school education from input-based to outcome-based, with a renewed focus on the quality of education. Teachers undoubtedly play a crucial role in imparting education of good quality. Teaching is a complex and multifaceted activity where teachers as professionals have multiple roles- instructor, guide, facilitator, manager, counsellor and other roles. It requires the teachers to be equipped with various skills and competencies. Teacher Education institutions significantly train in such skills and provide learning experiences to prospective teachers. There is ample research evidence to support that the quality of education imparted in TEIs is directly related to the quality of teaching. The United Nations Sustainable Development Goal SDG4 emphasises the importance of having and investing in professionally trained teachers to provide equitable and inclusive education. Our National Education Policy 2020 also underlines the importance of teachers and the need to empower them.

Over the decades, the Indian government has implemented many reforms encompassing critical areas in education, such as NPE (1986), SSA (2001), NCF (2005), RTE Act (2009), NCFTE (2009), Samagra Shiksha (2018) and NEP(2020). These reforms have predominantly involved introducing new policies, institutional structures, systems and processes with the overarching objective of imparting quality education. The primary trigger point for these reforms was an alarming situation concerning the learning level exhibited by children. Also, the present day demands that teaching and the system must engage with the contextual characteristics of schools and learners to realise the vision and promise of the RTE Act. It is important to understand some of the policy considerations to understand the functioning of DIETs.

1.2.1 National Education Policy (NEP) 2020

Launched after 34 years of the National Policy of Education, 1986, this policy addresses our country's many growing developmental imperatives. This policy proposes revising and revamping all aspects of the education structure, including its regulation and governance, to create a new system aligned with the aspirational goals of 21st-century education, including SDG-4, while building upon India's traditions and value systems. The vision of NEP 2020 is an education system that

- contributes to an equitable and vibrant knowledge society by providing high-quality education to all
- develops a deep sense of respect towards fundamental rights, duties and constitutional values
- instils skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen

Laying great emphasis on the role of teachers, NEP 2020 recommends that the teacher should be at the centre of reforms in the education system. The new education policy envisages re-establishing teachers, at all levels, as the most respected and essential members of our society because they truly shape our next generation of citizens. In the same vein, NEP 2020 further recommends that all programmes should include training in time-tested techniques in pedagogy, multi-level teaching and evaluation, teaching children with disabilities, teaching children with special interests or talents, use of educational technology, and learner-centred and collaborative learning processes.

1.2.2 Samagra Shiksha Programme

The Integrated Scheme Samagra Shiksha launched in 2018 after subsuming the erstwhile schemes of SSA, RMSA, and TE has been conceived for school education that would support States and Union Territories in implementing the RTE Act, 2009 and provide quality education to all. The scheme tries to address quality issues and determinants thereof, such as ensuring the availability of qualified teachers, a good curriculum and innovative pedagogy that impact upon learning outcomes of the children. It envisages treating school education holistically without segmentation from pre-nursery to Class 12. The programme's overarching objective is to

improve school effectiveness measured in terms of equal opportunities for schooling and equitable learning outcomes. The shift in the focus is from project objectives to improving systems-level performance and schooling outcomes with an emphasis on improving the quality of education.

1.2.3 Right to Education Act, 2009

The RTE Act is a landmark legislation marking a defining moment in the Indian education system. This Act makes it obligatory for the government to ensure admission, attendance and completion of elementary education by all children in the age bracket six to fourteen years. India has witnessed enormous changes in elementary education with the enactment of the RTE Act. It has changed the policy landscape by adopting a rights-based approach to school education. The Act has also brought a systemic focus on teachers and teaching. The Act provides that the teachers appointed should be appropriately trained and qualified. Since the 1990s, with India becoming a signatory to UNESCO's Education for All framework for action, there have been significant gains in access to schools with a huge increase in enrollment and retention rate at the primary level. The RtE Act has intensely focused on providing quality education to all children.

1.2.4 National Curriculum Framework for Teacher Education (NCFTE) 2009

As the sub-title '*Towards Preparing Professional and Humane teacher*s indicates, the core foundational aim on which this framework is based is on building professional teachers. The framework envisages preparing teachers who can impart quality and socially just education, including diverse children in the learning process, thereby transforming the very dynamics of teacher education. The framework elaborates on the context, concerns and vision, underscoring the symbiotic relationship between teacher education and school education and how it will be strengthened for qualitative improvements of the entire education spectrum.

1.2.5 National Curriculum Framework (NCF) 2005

The aims of education stated in the National Curriculum Framework, 2005 (NCF, 2005) are that education should enable every child to actively participate in the democratic process contributing to society by nurturing a democratic identity and committing to democracy and the

values of equality, justices and freedom; to independently think and act as an individual and as a collective based on the democratic values imbibed. The key pedagogical principle that the NCF 2005 (NCERT, 2005) stresses are: Reducing the "burden of learning" on children by avoiding overloading the syllabus and textbooks with excess topics. It emphasises the process of making learning a joyful experience for children by suggesting learning through meaning-making rather than rote. The teaching methods and instruction must give scope for the child to reason, question, think creatively and develop a sense of critical thinking. The methods should encourage gaining knowledge through life experiences and skills related to work, which would be especially helpful for children from marginalised societies. In the social context, the pedagogical practices must be sensitive to our multicultural society and not indoctrinate specific cultural practices. The textbooks must be plural /pluralistic, and cultural differences must be appreciated and enable the child to choose peace as a way of life and foster a democratic identity.

1.3 About the Study

DIETs are important district-level institutions contributing significantly to teacher development. Understanding the situation of the functioning of DIETs at the macro, meso and micro level and their functions and academic role vis-a-vis the state education system becomes critical for teacher education reform programs. The present study, 'Situation analysis of the DIETs in Uttar Pradesh,' will not only enable an understanding and implementation of teacher education reforms in the state but also help realise the vision of the NEP 2020 (GoI, 2020) in other states in India.

1.3.1 Objectives

Following the development of the national curriculum framework for teacher education in 2009-10 (NCTE,2009), the thrust and importance of teachers and teacher education expressed in the NEP 2020 and several restructuring suggestions for pre-service education in the new education policy, the main objectives of the study as we understand, are to analyse

- the design, adoption and implementation of the existing (revised) pre-service curriculum to inform further curricular and pedagogical reform

- the design and implementation of teacher professional development programmes to understand the successes, gaps and opportunities for implementing blended and online professional development of teachers
- teaching and learning and adoption of active and experiential pedagogical practices and development of student's 21st-century skills
- the functioning of DIETS as key institutes for academic development and support of teachers at the district level
- the institutional aspects of infrastructure and staffing in terms of needs, availability and utilisation to enable
- the status and needs to develop teachers' capacity to use ICT for professional development.

1.3.2 Structure of the Report

This report consists of five chapters. The first chapter provides the study's background, context, and objectives. The methodology, study implementation, data collection, and fieldwork are described in Chapter 2. The third chapter examines the state's current D.El.Ed (BTC 2014) curriculum and identifies its features and gaps. The fourth chapter details the situational analysis of DIETs in the state, including the desk review and analysis of collecting primary data. The fifth chapter summarises the findings and recommendations and the next steps to strengthen all DIETs in the state and establish them as centres of excellence.

Chapter 2: Methodology

2.1 Introduction

Through the SCERTs and DIETs, several programmes have been initiated to build local and contextualised curricula and teacher capacity towards universalising and strengthening the quality of schooling—the two-year pre-service D.El.Ed course for preparing elementary school teachers has since been offered in DIETs and has played a vital role in teacher development serving rural and marginalised communities (UNESCO, 2021).

Two national-level schemes, such as the Centrally Sponsored Scheme for Teacher Education (CSSTE) and the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT), have supported states and DIETs for teacher development. Platforms and programmes such as DIKSHA and NISHTHA initiated at the centre have also provided in-service teacher education support for states. Some of the key recommendations of the UNESCO State of the Education Report 2021 include valuing the professional autonomy of the teachers, building teacher's career pathways, increasing physical education, music, art vocational education early childhood and special education teachers, strengthening pedagogical reform in pre-service and in-service education and supporting teachers' community of practice (UNESCO, 2021). The NEP 2020 has devoted an entire section to revitalising teacher education with clear recommendations for improving the quality of teachers (GoI, 2020). The DIETs must be strengthened and play a vital role in operationalising all these recommendations.

Some of the key gaps and issues of DIETs functioning have been listed as lack of clear focus and objectives, lack of strong leadership, non-availability of adequate faculty and staff, function in isolation with lack of availability of specialists and experts and systemically weak in terms of planning, academic identity and administration (GoI,2007; TISS, 2017).

2.2 Framework for Data Collection and Analysis

In 2007, the District Quality Education Project, in collaboration with MHRD, through a two-day consultation, discussed the role, issues, potential and possibilities of DIETs to improve the quality of education. This consultation resulted in the publishing of a report titled "DIETs:

Potential and Possibilities" (GoI, 2007). Many suggestions for policy and practice emerged from the discussions. These suggestions will be used as a framework to undertake a situation analysis of the DIETs in Uttar Pradesh (UP), along with the reports of the Joint Review Mission on Teacher education of states (GoI, 2015).

Two important aspects of improving the quality of education are teacher development and school improvement. The DIETs are well positioned to focus on the two areas, especially in developing teachers through robust pre-service programmes offered in the DIETs in local languages engaging with the local contexts of learners. The DIETs, along with the BRCs and CRCs, would connect the DIETs to schools for school improvement programmes, including in-service professional development, local resource development and ongoing teacher support to enable the effective pedagogical transformation of teachers (GoI, 2007). Additionally, DIETs will be more efficient when there is synergy and integration across the teacher development and school improvement programmes.

For DIETs to function efficiently and meet these goals and objectives of education quality improvement, the report recommends considering six aspects,

1. **Institutional Identity and Focus:** Understand the DIET's identity through the focus areas of work, goals, objectives and its ability and capacity to function as an independent and autonomous institute leveraging state and national schemes.
2. **Systemic location and relation to other institutions:** Understand the DIETs positioning vis-à-vis the state education system, including SCERT and BRCs-CRCs.
3. **Financial Aspects:** Understanding the financial aspects such as provisioning infrastructure, resources, staff and faculty positions and other facilities.
4. **Development of Faculty and Staff:** Understand the current roles and responsibilities, staffing needs of DIETs, the recruitment processes, leadership roles, vacancies, capacity building of DIET heads, faculty and staff and nurturing a professional culture/community.
5. **DIET Functions and Activities:** Understand the different functions and activities implemented by the DIETs through inputs, processes, outputs, and outcomes, including teacher development, pre-service and in-service and as a resource and teaching-learning centres and institutes for local curriculum and material development.

6. **Collaborations and Partnerships:** To understand DIETs working with partners such as universities, DIETs within and across states, NGOs, and multilateral funding agencies towards gaining access to expertise, capacity building, networking and institution building.

2.3 Methodology

Bascia & Hargreaves (2000) chart out a new terrain for educational research by calling for "multiple forms and sites of data collection" to explore how different factors and influences "interconnect in specific sites" (p.17). Complexity theory offers a framework for such a study involving complex systems in "the sense that very large numbers of constituent elements or agents are connected to and interacting with each other in many different ways" (Mason, 2008; p. 33). The core issues raised by Lemke & Sabelli (2008) towards developing a conceptual framework for the analysis of education as a complex system have been considered while formulating the research questions and considering methods – defining the system, structural analysis, relationships among subsystems and levels, drivers for change and modelling methods. The framework specified in section 2.2 allows for analysis across three dimensions in terms of the scope (micro, meso and macro levels); forms (structures which facilitate sharing, collective action and decision-making supported by rules and procedures; and curricular practices which refer to shared norms, values and identities); and networks through which reforms can influence practice within the system (Wilson, 2013).

The methodology included a desk review of secondary data and literature to understand the current status of DIET functioning in the state, issues and gaps. The study used mixed primary data collection methods and analysis through surveys, interviews and observations to cover 11 DIETs and stakeholders.

2.3.1 Research Questions

This study aimed to answer the following questions, as listed in the TOR ,
1. What are the highlights and gaps of the existing D.El.Ed curriculum vis-à-vis research-based teacher education models, NCFTE 2009 framework and the recommendations of the NEP 2020?

2. How efficient and effective are teacher development processes and implementation (pre-service and in-service), programmes, and other DIET activities undertaken in the DIETs?

3. What are the availability, utilisation and needs of physical resources and staffing (faculty and staff) of DIETs?

4. What gaps must be filled for DIETs to be developed and function as centres of excellence in teacher education?

2.4 Implementation Plan

The implementation was carried out in three phases sequentially, one leading into the next and included

1. Phase 1 - Curriculum & desk review of DIET studies
2. Phase 2 - Primary Data Collection
3. Phase 3 - Analysis & reporting

Figure 2.1 Three Phases of Implementation

2.5 Data Collection Tools

For DIETs to function efficiently and meet these goals and objectives of education quality improvement, the study considered the six aspects outlined as the framework in section 2.2 and included two additional aspects,

- **Infrastructure:** Observing the infrastructure availability, access and usage in the DIETs;
- **Impact of COVID-19:** To comprehend the actions taken and the impact on teacher education at DIETs as a result of the COVID-19 pandemic and subsequent lockdown.

The eight aspects together were considered while developing the DIET principals and Faculty interview tool. Another tool was created for the various district, block, cluster and school stakeholders to understand the interactions between DIET and the education officers, head teachers and teachers and their role in improving education quality. The tools are provided as attachments.

TISS requires that we provide information sheets and take consent from all participants during primary data collection. All tools and forms were available in Hindi and English.

The observations were made in free/open format, and researchers were asked to note the following during observations:

1. Infrastructure and access
2. Teaching and learning resources
3. Activities & events

Researchers also interacted informally with student-teachers (D.El.Ed) about their aspirations and career goals.

2.6 Data Collection Process

2.6.1 Selection of DIETs for Primary Data Collection
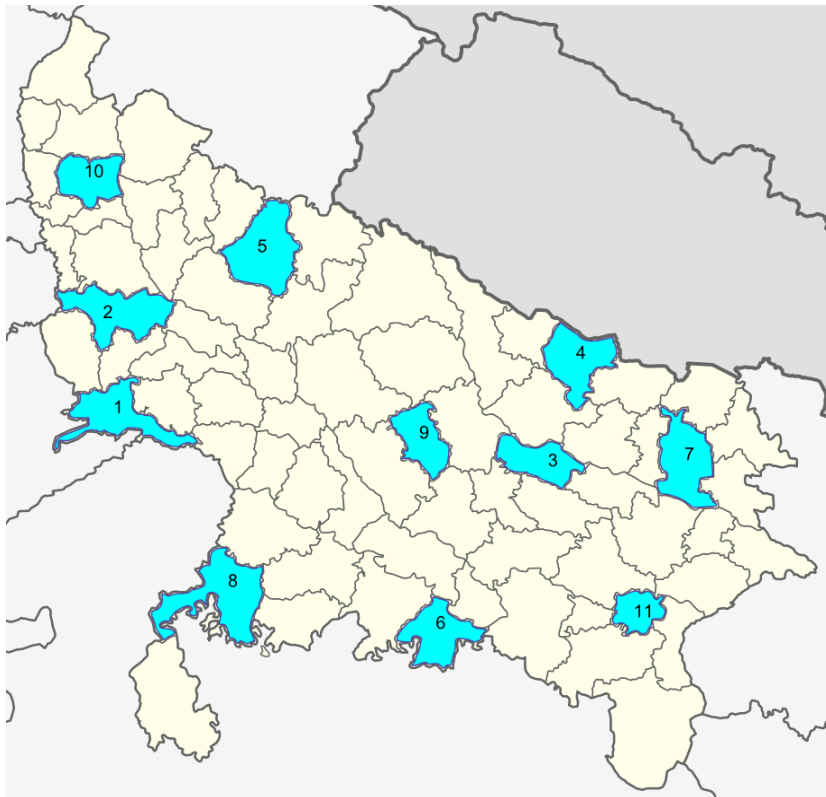
There are 18 geographical divisions in Uttar Pradesh and 70 DIETs. The following process was followed for the selection of DIETs

1. DIETs were sent a spreadsheet template to provide factual information regarding
   a. Pre-service (D.El.Ed) enrollments in DIETs and the district from 2018 to 2022
   b. Special activities that were undertaken for pre-service student-teachers
   c. In-service training programmes conducted by DIETs and the number of participants in each programme from 2018 - 2022
   d. Innovative programmes conducted by the DIETs
   e. Infrastructure available in the DIETs

2. 54 out of 70 DIETs provided the data initially, of which 18 DIETs, one from each division was selected. Subsequently, all 70 DIETs provided the data. The initial list of DIETs selected was:

SI No	DIET	Division	Selection Criteria
	TABLE 2.1: Initial Selection of DIETs for Primary Data Collection		
1	Agra	Agra	ICT, Library and innovative activities
2	Moradabad	Moradabad	Headquarters
3	Auraiya	Kanpur	ICT Lab
4	Ayodhya	Ayodhya	Complete data
5	Ballia	Azamgadh	Only district in the division
6	Shravasti	Devipatan	Only district in the division / Aspirational District
7	Basti	Basti	Headquarters
8	Bareilly	Bareilly	Library
9	Gautam Buddha Nagar	Meerut	Maximum faculty
10	Gorakhpur	Gorakhpur	Headquarters + ICT
11	Hathras	Aligarh	High pre-service
12	Varanasi	Varanasi	More innovative activities
13	Jhansi	Jhansi	Headquarters+ ICT
14	Kaushambi	Prayagraj	High no of faculty
15	Lucknow	Lucknow	Capital of UP
16	Chitrakoot	Chitrakoot	Complete data
17	Muzaffarnagar	Saharanpur	High pre-service enrollments (district)
18	Sonbhadra	Mirzapur	Aspirational District

3. The TISS data collection team consisted of 18 members, including faculty and researchers, and we had decided that each member would visit one DIET.

4. This list (Table 2.1) was provided to SCERT for input, and after discussions, it was decided that it would be better to visit the DIETs in pairs/groups to enable in depth field observations ; hence a decision was made to visit 11 DIETs in two weeks, spending the first week in 5 DIETs and the second week in 6 DIETs. The SCERT recommended the following DIETs as the final list based on practical criteria of accessibility and SCERT's plan of developing some DIETs as centres of excellence. The following is the final list of DIETs selected.

TABLE 2.2 - Final Selection of DIETs for Primary Data Collection		
Sl No	DIET	
1	Agra	
2	Aligarh	
3	Ayodhya	
4	Balrampur	
5	Bareilly	
6	Chitrakoot	
7	Gorakhpur	
8	Jhansi	
9	Lucknow	
10	Meerut	
11	Varanasi	

2.6.2 Interviews with DIET Principal, DIET Faculty and Stakeholders

The effectiveness of the DIETs hinges greatly on the quality of its personnel, especially the Principal/Vice Principal, faculty and other stakeholders. It is also important to understand their vision, roles and responsibilities, nature of work, challenges faced, and suggestions. Hence separate questionnaires were prepared for each category. The researchers were given orientation on getting consent from the interviewees, establishing rapport, conducting interviews, documenting the information collected and sharing the data, observations and reflections with the research team.

Interviews with the Principal: The role of the principal/ vice principal is crucial in planning academic activities, providing academic and administrative leadership, Institution planning and facilitating research. The principal/ vice Principal questionnaire comprised items related to the role and responsibilities, institutional identity and focus, systemic location and relation with other institutions, financial management, development of faculty and staff, DIET functions and activities and collaborations and partnerships.

Interview with DIET Faculty: The quality of primary school education and teacher education is greatly shaped by the DIET faculty. Hence, the researchers interviewed one senior faculty and one or two junior faculty of each DIET. In some DIETs, Focus Group Discussions were also conducted to elicit responses from the lecturers, giving a clear perspective about all the pedagogical and academic activities of the DIET.

Interview with Stakeholders (Basic Shiksha Adhikari (BSA), District Education Officer (DEO), Block Resource Person (BRP), State Resource Group (SRG), Academic Resource Persons(ARP): DIETs must form functional relationships with other district-level institutions contributing to and shaping elementary education and children's overall development. Hence separate interviews were conducted with all the stakeholders. The questions were mostly about the support and collaboration with DIET to improve the quality of education in schools.

2.6.3 Interactions with D.El.Ed Students

Interactions with the student-teachers in the DIETs are vital for understanding the state's core activity of pre-service education. Through informal interactions with students regarding their

career aspirations and goals and opinions about the programme they were enrolled in, we wanted to understand pre-service status in the DIETs. The students' voices would give a true picture of how the DIET functions, the academic support they receive and how it would help realise each individual's goal.

2.6.4 School Visits

One of the major functions of DIET is to offer all the support required to improve the standard of primary education. It was felt that school visits would be very beneficial to understand the quality of education imparted in schools. The researchers got the opportunity to visit some government schools in the districts. With the guidance received from the respective principals, each team visited one primary, one Upper primary, or composite school located in urban, rural locations and also Kasturba Gandhi Balika Vidyalaya. During the visits, the field team could interact with the head teacher, teachers and students. Also, they were taken on a tour of the school premises, laboratories, library, art room, sports room, and playground, which provided a clear picture of the infrastructure and other facilities given to students.

2.7 Fieldwork

The final timetable was drawn up to visit the 11 DIETs for primary data collection. There were five teams spread out covering these districts within UP. Each team was given two districts. The tables below show the plan and the duration of fieldwork.

TABLE 2.3 - DIET Visit Timetable		
Group	**District**	**Dates**
Group 1 Dr Letha Rammohan (Research Associate) Achla, Karan	Agra	Dec 5, 2022 - Dec 10, 2022
	Aligarh	Dec 12, 2022 - Dec 16, 2022
Group 2 Tejal Ahuja (Research Assistant) Anjali, Shreya	Bareilly	Dec 5, 2022 - Dec 10, 2022
	Meerut	Dec 12, 2022 - Dec 16, 2022

Group 3 Dr Bindu Thirumalai (Assistant Professor) Preet, Palak & Ramnivas	Lucknow	Dec 5, 2022 - Dec 10, 2022
Preet & Palak	Ayodhya	Dec 12, 2022 - Dec 16, 2022
Abhijeet & Ramnivas	Balrampur	Dec 12, 2022 - Dec 16, 2022
Group 4 Paavana Barman (Research Assistant) Vaishnavi & Kushal	Jhansi	Dec 5, 2022 - Dec 10, 2022
	Chitrakoot	Dec 12, 2022 - Dec 16, 2022
Group 5 Dr Arindam Bose (Associate Professor) Rajnish, Abhijeet & Anand	Varanasi	Dec 5, 2022 - Dec 10, 2022
Rajnish & Anand	Gorakhpur	Dec 12, 2022 - Dec 16, 2022

Interactions with various DIET principals, vice-principals, faculty and other persons and observations were conducted in the DIET. Most of the interviews were audio-recorded after taking consent from the participants. In a few DIETs, participants did not give consent for recording. In such instances, detailed interview notes have been compiled.

TABLE 2.4 - Number of interviews conducted in DIETs							
DIET/ District	Principal	Vice Principal	Senior Lecturer	Lecturer	Support Staff	DElEd Classes Observed	Other (NGO)
Agra	1	NA	1	3	0	1	
Aligarh	1	0	1	2	0	0	
Ayodhya	1	0	1	7	0	2	
Balrampur	1	NA	NA	5	1	NA	Pratham District head
Bareilly	0	NA	2	3	1	4	
Chitrakoot	1 (In charge	0	0	6	0	2	Sampark Foundation

	BSA)						
Gorakhpur	1	0	2	2	0	0	Humana
Jhansi	1	0	0	6	1	1	Humana
Lucknow	0	0	1	2	2	1	
Meerut	1	1	3	2	0	2	Humana - Team Leader
Varanasi	1	NA	1	2	0	0	
TOTAL	**9**	**1**	**11**	**40**	**5**	**13**	**5**

District and block level educators were interviewed to understand interactions with DIETs. These interviews were conducted in groups or individually.

TABLE 2.5: Interactions with District and Block level Officers and Educators					
DIET /District	**SRG**	**ARP**	**DCT**	**BSA**	**BEO**
Agra	2	2	0	1	1
Aligarh	1	0	2	1	1
Ayodhya	0	4	1	1	2
Balrampur	2	1	1	0	0
Bareilly	0	1	0	0	0
Chitrakoot	0	4	1	1	1
Gorakhpur	3	3	0	0	1
Jhansi	0	0	0	0	0
Lucknow	1	2	1	1	1
Meerut	0	3	0	0	2
Varanasi	1	0	0	0	0
TOTAL	**10**	**20**	**6**	**5**	**9**

Different types of school visits included observation and interaction with school head teachers and teachers. Many interactions took place in a group, with the headteacher and teachers participating. In some cases, the head teacher and teachers were interviewed separately.

TABLE 2.6 - School Visits and Interaction with Head Teachers & Teachers			
DIET/District	Head Teacher	Teacher	Schools Visited
Agra	1	3	3
Aligarh	1	4	5
Ayodhya	4	0	4
Balrampur	1	2	4
Bareilly	2	0	5
Chitrakoot	3	5	3
Gorakhpur	2	3	4
Jhansi	2	3	2
Lucknow	3	4	3
Meerut	0	0	3
Varanasi	0	0	5
TOTAL	19	18	39

2.8 Field Experience

The researchers' experience during the data collection process was very educational. The researchers gained a deeper understanding of the practical applications and the everyday realities of what occurs at the most basic levels. Through these experiences, a thorough comprehension of how policies are implemented in practice and the challenges involved in doing so was gained. Reflected are some of the key features and restrictions.

- **Curriculum review** - Before going to the field, the curriculum review aided in understanding the D.El.Ed programme better. Our initial curriculum observations aligned

significantly with lecturers' perceptions and opinions and the classroom observations in the DIETs

- **Data factsheet** - Collecting data before going into the field also gave the team an idea of the activities and situation of the DIETs and a baseline for further observations.

- **Interaction with SCERT** - In the first week of data collection, sharing initial insights with the joint director of SCERT and other team members at SCERT and discussions enabled fine-tuning of the data collection process for the second week, and the guidance received from SCERT helped consolidate observations.

- **Daily team debrief** - The TISS team met daily at 7:30 pm to discuss the ongoing data collection. This sharing of observations and reflections further strengthened the team's data collection processes.

- **Permission** - This was the first step undertaken in the field study. The permission to conduct the research within most DIETs was obtained without much hassle, as the SCERT had issued letters to all DIETs informing them of the research and ensuring coordination with the TISS team members. UNICEF team members aided this process immensely while the TISS team was on the ground.

- **Cooperation** - Most of the DIETs extended good cooperation during the study. The Principal and the faculty facilitated access to the information regarding the DIET's different functioning and other details related to infrastructure, pedagogy, resources, activities and so on.

- **School visits** - The travels to the various schools within and outside blocks were well coordinated by the DIETs, the BRCs or the District officer and helped in the very smooth transaction of the process considering the time and distance. The DIETs' ARPs and BSA also helped select schools for the visit.

- **Observation within DIETs**- The observation within these DIETs was another major aspect of the research. The DIET Principal, Vice-principal, and faculty co-operated with the team

members for recording, taking pictures, making videos and interacting with students, faculty and other staff members in a more natural setting.

- **Facilitation from stakeholders** - The stakeholders like the ARPs, BEOs, District Coordinator Training, Basic Shiksha Adhikari, and BEO (Block Education Officer) helped facilitate our research. They gave valuable insights into the functioning of the schools, recruitment policy, transfer policy, financial aspects, school mentoring, and implementation of Samagra Shiksha programmes.

2.8.2 Limitations
A few limitations which posed restraints in conducting the research are mentioned below.

- **Validity of the factsheets:** We received 70 submissions of the DIET fact sheet templates we sent each DIET at the programme's start. However, we found that very few DIETs reported all the requested data. There were formatting issues, errors, and some of the data was unreadable in many submissions. The only clean data from all DIETs was the infrastructure availability.

- **Non-availability of respondents:** In some districts, the interviews could not be conducted with the Principal, Vice-Principal, BEO and BSA due to their transfer. In some DIETs, the faculty and the ARPs had gone for training at the SCERT. These would create some gaps in getting a comprehensive picture of the situation.

- **Permission to record and access**: In some DIETs, it was not easy to establish trust and get consent for recording interviews and accessing information. Also, in some schools, the authorities were not keen to share information or give permission to record their perceptions.

Chapter 3: BTC 2014 (D.El.Ed), UP Curriculum Review

3.1 Introduction

To improve the quality of education in the state, strengthening Initial Teacher Education (ITE) is vital so that new teachers who enter the workforce build their professional knowledge and skills based on the latest trends and best practices in teacher education. Teacher education requires deep engagement with the local contexts. It is a continuous process beginning with ITE and providing continuous professional development opportunities throughout a teacher's career (Ramchand, 2020). DIETs are the best-positioned institutes to provide an environment for contextual and continuous professional learning opportunities for elementary school teachers in the state.

Hence, this chapter reviews the existing state curriculum document vis-a-vis the latest research on teacher education and the policy discourse of teacher education in India to recommend the best possible way forward for the education of elementary school teachers in the state of Uttar Pradesh.

3.2 Framework for Review

The intended curriculum, BTC 2014 of UP, has been evaluated in light of recent research and best practices (Darling-Hammond, 2006; UNESCO, 2021) available worldwide regarding pre-service teacher education as well as the most important policy documents and recommendations regarding teachers and teacher education in India. In 2009, the National Council for Teacher Education produced a framework, NCFTE 2009, which proposed a paradigm shift in teacher education towards developing reflective, humane, and independent professionals. Previously, the national curriculum framework, NCF 2005, recommended a shift in pedagogical approaches towards developing a student-centred and experiential learning environment. The recent National Education Policy (NEP) 2020 asks for a multidisciplinary and holistic approach to education and experiential and active learning pedagogies. It emphasises the significance of developing teachers as independent professionals. The pioneering work of Lee Shulman (1986) and the development of Pedagogical Content Knowledge(PCK) as essential knowledge required for teachers to effectively teach subject matter to students have had a

global impact on the study of teacher professional knowledge. In addition, the NCERT's PINDICs (NCERT, 2013) is a strong teacher self-assessment rubric that offers robust standards for teacher professional practice.

This report is a desk review of the existing D.El.Ed curriculum document for the state of Uttar Pradesh concerning current policy papers and important recommendations about teacher education. The multifaceted review uses NCFTE 2009 and Shulman's (1986) knowledge base to analyse the curriculum's structure and content. The NCERT teacher self-evaluation rubric (PINDICS) (NCERT, 2013) is based on teachers' professional practice and the current National Education Policy NEP 2020 (GoI, 2020) in order to comprehend how the curriculum fits into the greater educational thrust. The findings are synthesised using Darling-Hammond (2006) and UNESCO (UNESCO, 2021) standards of widely recognised good design principles.

Figure 3.1 Curriculum Document Review - Framework

NCFTE 2009	Teacher Professional Knowledge (Shulman,1986)	NCERT Teacher Self Evaluation Rubric	NEP 2020
A holistic approach to curriculum development and coherence across the courses in the program

Develop student-teachers to be reflective and humane professionals
. | Subject Knowledge

General Pedagogical Knowledge

Pedagogical Content Knowledge

Curricular Knowledge | Designing learning experiences

Strategies for facilitating learning

Interpersonal relationships

Professional development School development | A multidisciplinary and holistic approach to education

Active and experiential learning

Inclusive education

Integration of digital technologies |

1. NCFTE (NCTE, 2009)
   a. An approach to curriculum development and coherence across the courses in the program (NCTE, 2009)
   b. Develop student-teachers to be reflective and humane professionals
   c. Engagement with theory and foundational educational perspectives
   d. Programme structure and curricular areas recommended by the NCFTE 2009

e. 12-20 Weeks Internship, visit Innovative sites of pedagogy & learning and classroom-based research project

f. Partnership model between teacher education institutions and schools

2. Shulman's (1986) work on teacher knowledge, specifically pedagogical content knowledge and

   a. Knowledge of school subject content, including understanding the structures of the subject matter and identifying key ideas related to the subject and hierarchical organisation of topics in the subject domain

   b. General pedagogical knowledge - knowledge of how to teach, useful strategies, methods, classroom management techniques and ways of engaging students in group work and projects.

   c. Pedagogical Content Knowledge (PCK) is knowledge of teaching the subject, using multiple representations, connecting content with examples and metaphors, identifying students' preconceptions and misconceptions, and assessing students' learning and understanding.

   d. Curricular knowledge including interconnections between topics, across subjects and familiarity with curricular materials and resources

3. NCERT Teacher Self Evaluation Rubric - Performance Indicators (PINDICS) - for Elementary Schools Teachers. (NCERT, 2013), specifically the standards of professional practice

   a. Designing learning experiences

   b. Knowledge and understanding of the subject matter (refer to Shulman's (1986) teacher knowledge base)

   c. Strategies for facilitating learning

   d. Interpersonal relationships,

   e. Professional development

   f. School development

4. NEP 2020 policy document recommendations
    a. A multidisciplinary and holistic approach to education
    b. An active, student-centred, experiential learning environment that develops students' analytical and critical thinking (National Curriculum Framework [NCF], 2005 (NCERT, 2005))
    c. Competency-Based Approach with a focus on learning outcomes
    d. New pedagogical structure - Foundational Stage, Preparatory Stage and Middle Stage
    e. Pedagogy: play-based, activity-based, inquiry-based & development of critical & analytical thinking
    f. Emphasis on local language and language across the curriculum
    g. Integration of technology in all courses.
    h. Inclusive education - addressing diversity across the curriculum
    i. Involving parents, community, spreading awareness, home-based education
    j. Identifying and promoting gifted children
    k. Assessment - continuous & and comprehensive 360-degree report card

Figure 3.2 Curricular Areas Recommended By The NCFTE 2009 (NCTE, 2009), pg 27
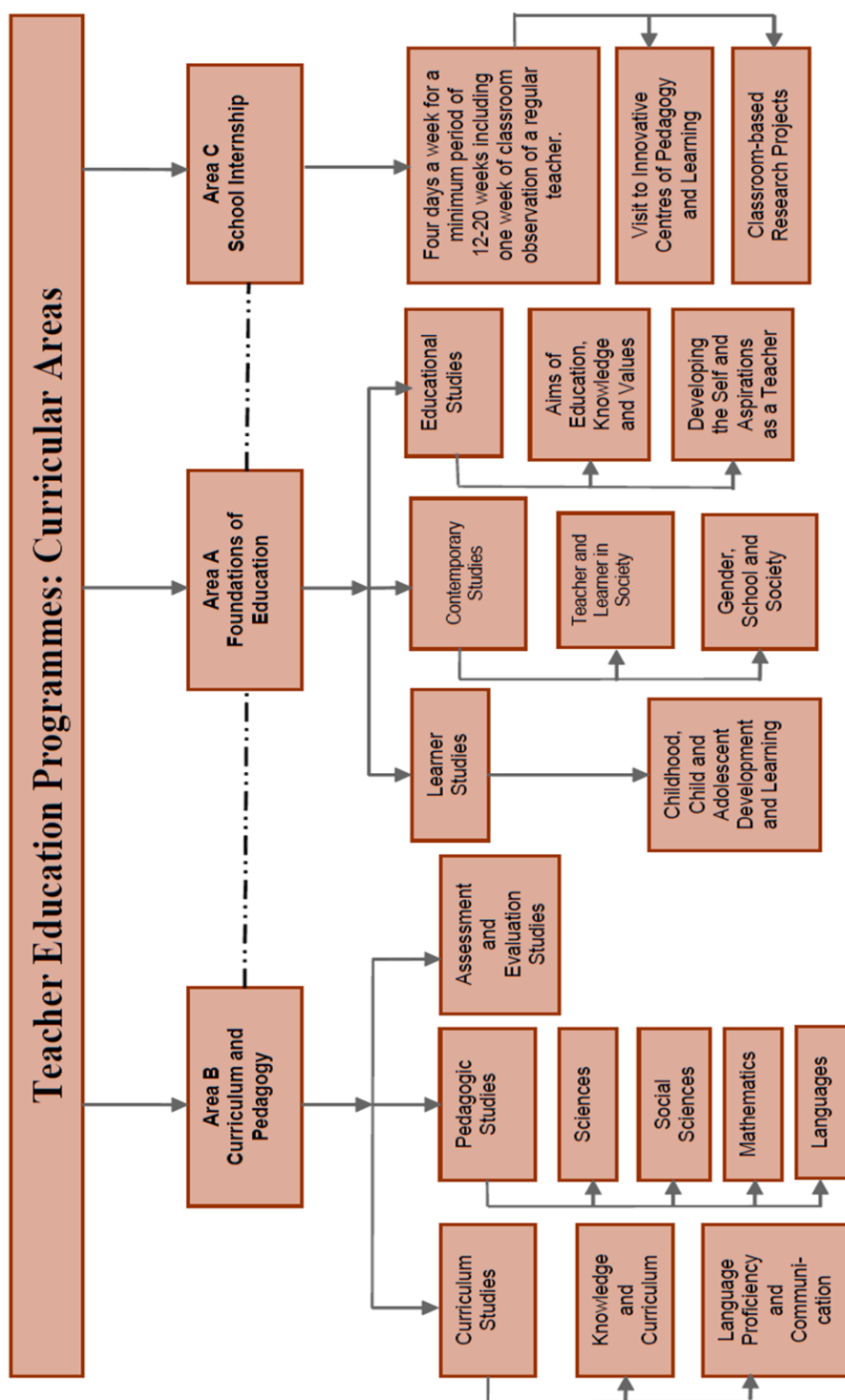
3.3 Curriculum Review

Figure 3.3 maps the curricular areas recommended by the NCFTE (NCTE, 2009).
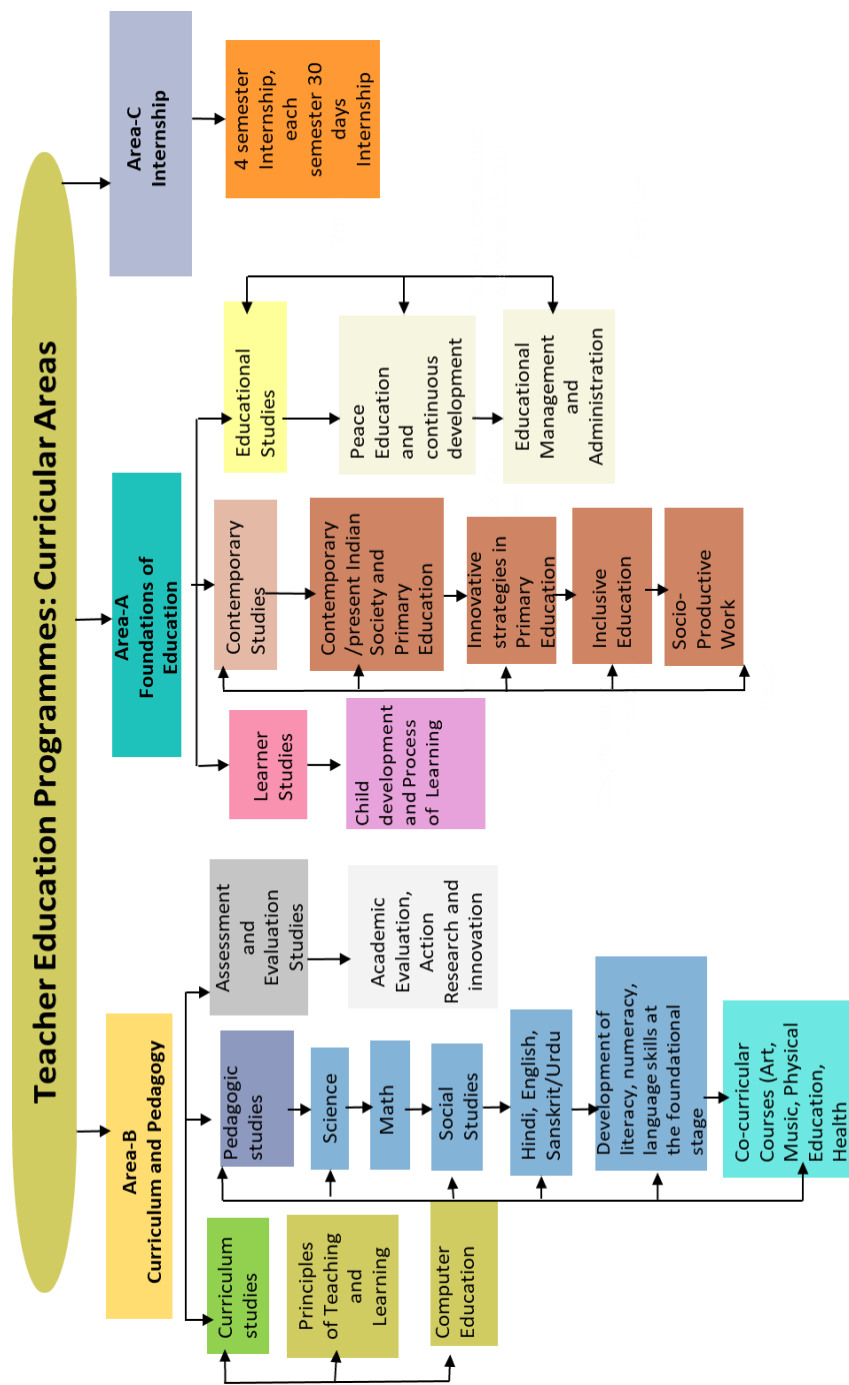
Figure 3.3 Curricular Areas BTC 2014 Uttar Pradesh Curriculum

3.3.1 Mapping with NCFTE, 2009 Programme Structure

Table 3.1 illustrates the highlights of the courses and their compatibility with the NCFTE-recommended programme structure for 2009, as well as identifying the gaps.

Table 3.1 Mapping BTC, UP Curriculum with NCFTE 2009 Recommended Programme Structure			
NCFTE Recommended Framework Courses	**UP BTC 2014 Courses that align with the NCFTE courses**	**Aspects of alignment between NCFTE and UP BTC Curriculum & Highlights of the BTC Curriculum**	**Gaps or missing aspects in the UP BTC 2014 Curriculum**
FOUNDATIONS OF EDUCATION (AREA-A)			
<u>Learner Studies</u>			
Childhood, Child and Adolescent Development & Learning	Child Development & Process of Learning	Constructs of the child development, theories of learning, with details of why it is worth knowing, and how it relates to other propositions, both in theory and in practice corresponding to the Learner Studies course of NCFTE.	The focus is more on psychological constructs than on social and contextual aspects related to learning. Emphasis on psychometric tests for identification of issues/problems which are critiqued for not considering cultural aspects of learning.
<u>Contemporary Studies</u>			
Teacher & Learner in Society	Present Indian Society and Primary Education	An engagement with issues and concerns of contemporary Indian society Information about the structures of ancient, medieval and present education Knowledge of India, its diverse culture, pluralism its rich traditions and the	The role of parents, community and society towards overall development is not proposed except in the development of life skills among children.

		concept of Ek Bharat Shreshtha Bharat	
		The curriculum identifies the issues in the new academic realm and the challenges and tries to solve them in a planned way.	
		Topics like population education, pollution environment education, irrigation, climate change, and sex education energy are integrated into this course.	
		Value education, peace education, information technology, and teaching constitutional values through poems, stories, songs, etc., are included.	
Gender, School & Society	Inclusive Education	Listing issues of disadvantaged children, kinds of inclusion, children with special needs, identifying and addressing their problems, tools for assessment, and list of equipment and aids used by such children. Introduces trainees to the basic understanding and concepts of inclusive education. Connects special children with education through ICT-based materials/game-based, the importance of both guidance and counselling highlighted along with the different agencies working in this area.	The concern regarding the exclusion of children who come from socially and economically deprived backgrounds, Scheduled Castes (SCs), Scheduled Tribes (STs), minority and other communities, girls and children with diverse learning needs not adequately addressed. The inclusion of children with special needs is dealt with technically, whereas teachers need to be equipped to deal sensitively with such issues.

	Innovative strategies in Primary Education	Introduction to different constitutional provisions concerning primary education like- RTE(2009), Mid-day Meal, Hunter Commission, Articles 21(A) and 29(2). It also includes landmark policies like NEP- 1986, NCFTE-2009, and NCF-2005.	
	Socio-Productive Work	This paper includes aspects like the capability to make children efficient in SUPW, to develop qualities such as artistic aptitude, the importance of labour, self-reliance, handicraft, discipline, time management, creativity in children It is also envisaged to instil employment-related skills and the skills to prepare socially useful products from regional resources and waste material.	
Educational Studies			
Aims of Education, Knowledge and Values	Peace Education & Continuous Development	The objective of this course is to create interest towards peaceful existence amongst individuals develop those ideal social qualities and skills for peaceful co-existence with members of their community. etc. Topics covered include personality and social development, social cognition, aggression, technology and peer relationship, stress	

		management, media and violence, environmental and sustainable development, peaceful resolution of conflicts and positive behaviour intervention support.	
Developing the Self and Aspirations as a Teacher	*No separate course*		
	Educational Management & Administration	Includes the basic facets of educational administration in schools. The primary indicators, resources, and principles within the school management system.	

CURRICULUM & PEDAGOGY (AREA B)			
Curriculum Studies			
Knowledge and Curriculum	Principles of Teaching and Learning	Engagement with subject content and school curriculum, textbooks, the philosophical and ideological basis of the curriculum. Introduction of the student teachers to the new genres in teaching, rules of teaching- principle of Known to Unknown, Broad to Narrow, objective to subjective, specific to general etc. Methods within teaching include- questioning, description, lecture, explanation, story-telling, debate, experimental, play-way etc. Some new principles in teaching like- remedial, multilevel, collaborative	No directions for curriculum and text analysis from the gender lens, critically analysing disciplinary studies, analysing school cultures, and engaging in debates associated with professional education and the feminisation of teaching.

		learning, child-centric etc.	
Language Proficiency and Communication	*No separate course*		
	Computer Education	Introduces student-teachers to the basics like- the history, development and types of computers, acquaints in the uses and application of the areas of computers, and scope (advantages and disadvantages) of computers. Conceptual understanding of the components of computer systems, Hardware, Software, memory, and workings of computer systems(Input Processing Output cycle). Making student-teachers aware of the uses of computers in research and innovation , using the Internet and make the teachers aware of the rules in Microsoft Office, open source resources, cyber safety, and ICT Cyber rules.	
Pedagogic Studies			
Science	Science	Understanding school curriculum; critical engagement with principles of teaching; epistemological issues place of assessment for learning; qualitative and quantitative measures; hands-on experience clinical interviews,	Lack of an integrated curriculum seen in the core courses. Although subject-specific pedagogy has been addressed for Languages like in English- The bilingual approach, Dr West's method, or in Hindi use of poetry or storytelling method, again,
Social Science	Social Studies		
Mathematics	Mathematics		
Languages	Hindi, English, Sanskrit & Urdu		

		observation formats and interpretation of data	it gets limited within the theoretical frames, it does not find its place within the application/ practicum session. In the courses like Social Studies, Math, and Science, there have yet to be any reflections of a specific pedagogy. For instance-constructivist approach for teaching social studies or problem-based inquiry model etc. More focus on generic methods discussion, use of visual aids etc.
	Development of literacy, language and numeracy skills at the foundational stage,	Language proficiency and communication skills; metalinguistic awareness; skills of speaking, listening, reading and writing in varying contexts; content area literacy The primary aspect here is to prepare the trainees on their language, listening, speaking and writing skills, understand differences in sounds and develop correct pronunciation and to train teachers in continuous and wide evaluation of math and language. Topics covered-Proper pronunciation of words in both Hindi and English, efficient learning and hearing of vowels, consonants, and consonant clusters. Proper learning of addition and subtraction	Immersion in a language-rich environment is not emphasised along with exposure to print-rich environments.
	Art, Music &	Developing core values	

	Physical Education & Health	through ART, awareness about the importance of health and fitness through physical education & Sports.	
Assessment & Evaluation Studies			
	Academic evaluation, Action Research and innovation	History of evaluation and current practices; the role of evaluation in learning and development of the learner, and broadening the scope of assessment beyond achievement testing to cover child's overall development formative and summative assessment This paper includes such ideals like- to make the trainees aware of the uses, objectives, types of assessment. Proper acquaintance with important assessment techniques like Summative and Formative assessments within the curriculum.	Though types of assessment are detailed, like formative, summative, etc., and holistic assessment the detailed coverage of all aspects of an assessment is minimal. Examining textbooks to contextualise school knowledge Engagement with research relating to different aspects of young children's learning Traditional terms such as 'slow learners' are still used in the courses and need to be reimagined
INTERNSHIP (C)			
12-20 Weeks Internship Visit to Innovative sites of pedagogy & Learning Classroom-based research project	4 semesters internship, each semester 30 days internship Semester-wise practicum	Sustained engagement with schools, teaching and participating in school activities.	Language across curriculum Linking school knowledge community life Systematic recording of learners' errors, examining them in the light of empirical research The internship needs to be worked more as a partnership

			model rather than using the school for fulfilling formal degree requirements; a partnership the model may be considered (refer to pg52 NCFTE (2009)).

3.3.2 Pedagogy Courses & Teacher Professional Knowledge Base

Table 3.2 reviews pedagogy courses based on Shulman's theory of teacher professional knowledge.

Table 3 2: Review of pedagogy courses based on Shulman's theory of teacher professional knowledge		
Pedagogy Courses	**Types of Knowledge based on Shulman (1986)**	**Evidence in the BTC UP 2014 Curriculum**
Science	Content / Subject Knowledge	No evidence of engaging with the structure of the discipline, key ideas and topics.
	Pedagogical Knowledge	Use of TLMs and ICT resources
	Pedagogical Content Knowledge	No evidence of research-based specific pedagogical approaches on science teaching and learning
	Curricular Knowledge	No evidence of an integrated learning approach.
Social Studies	Content / Subject Knowledge	Developing a contextual understanding of concepts in social studies
	Pedagogical Knowledge	Broad principles and strategies of classroom management and organization that appear to transcend the subject matter and various methods like group discussion, panel discussion, debates, travel projects, field visits,

		use of anecdotes, games, ICT are suggested for teaching content in Social Studies.
	Pedagogical Content Knowledge	No evidence of research-based specific pedagogical approaches on social science teaching and learning
	Curricular Knowledge	No evidence of an integrated learning approach.
Mathematics	Content / Subject Knowledge	No evidence of engaging with the structure of the discipline, key ideas and topics.
	Pedagogical Knowledge	Preparing TLM /activities/computer games/puzzles and education technology related to various themes.
	Pedagogical Content Knowledge	No evidence of research-based specific pedagogical approaches related to teaching and learning specific mathematics topics like geometry, mensuration, fractions etc.
	Curricular Knowledge	Use of experience, language, pictures and symbols as an approach for teaching mathematics
Hindi, English, Sanskrit & Urdu	Content / Subject Knowledge	Hindi-The broad objectives of this course also seem to cover the role of educators in going beyond just making students acquainted with the theory but to take a step forward and make them understand the depth that language plays in human learning which coincides within the framework of explaining why a subject/course is deemed warranted, why it is worth knowing.

English-the broad objective of this course which is to make teacher trainees understand well the context of the English language and also its different units, like basics of |

		grammar(nouns, pronouns, adjectives, tenses, 750 vocabulary, verbs, affirmatives)seems to reflect the aspect of understanding the structures of the subject matter.
	Pedagogical Knowledge	For English & Hindi-Making the teaching process more effective and engaging by training teachers in methods like story-telling, preparing TLM, use of ICT and poetry are reflected within its broader objectives and correspond in line with certain aspects of the framework like useful strategies, methods, and ways of engaging the students.
	Pedagogical Content Knowledge	No evidence of research-based language-specific pedagogical approaches to language learning. or the use of analogies for teaching languages.
	Curricular Knowledge	No evidence of an integrated learning approach(Hindi & English)

3.3.3 Coverage Of Dimensions Of PINDICS Professional Practice

Table 3.3 reviews the coverage of various dimensions of professional practice as defined by NCERT's teacher self-assessment rubric.

Table 3.3: Coverage of the dimensions of teacher professional practice in the BTC curriculum		
PINDICS Indicator	**Coverage in the BTC Curriculum**	**Gaps that need to be addressed**
Designing Learning Experiences for Children	The paper child development and learning process includes projects for a student teacher to come up with certain activities for increasing the focus, interest of children for their effective engagement in	The existing knowledge and experiences of learners could be considered while planning the activities.

	the process of learning. Use of stories, poems, pictures, riddles, etc. (Covers the sub-indicator and plans for engaging children in learning activities).	
Strategies for Facilitating Learning	Continuous and comprehensive evaluation Uses different resource materials like teacher guide, sourcebook, ICT, etc., other than a textbook for effective transaction Inclusion of practicum in papers like Child development and learning process	More subject-specific pedagogical strategies are missing from the courses Deeper engagement with materials and resources for higher order thinking is missing
Self, and Professional Development	Contributes in developing of teaching-learning materials Engages himself/herself in innovative and research activities	An engagement with student-teachers beliefs, assumptions and attitudes about learners and learning is not addressed Developing relationships with colleagues and different stakeholders within the school and educational community/system is not explicit
School Development	Takes responsibility for organising school functions like morning assemblies, cultural programs, sports and games, a celebration of national days etc. Cooperates in organising school activities such as gardening, health and hygiene, mid-day meals, etc.	Opportunities for engagement with parents and the community could be enhanced.

3.3.4 Reviewing BTC Curriculum Vis-A-Vis NEP, 2020

Table 3.4 reviews the BTC curriculum in light of the recommendations of NEP 2020 for teacher education.

Table 3.4: Review of BTC Curriculum vis-a-vis NEP, 2020 Policy		
NEP (2020) recommendations	**BTC, UP, D.El.Ed Curriculum**	**Gaps to be addressed**
Multidisciplinary & holistic Education	Offering holistic education by including Art, Music, SUPW, Physical and health education.	There is not much scope for an integrated approach to pedagogy
Competency Based Approach with a focus on learning outcomes	is More towards Input based approach though one of the objectives is to train and inform learners about realising expected class-wise learning levels.	The need to shift the pedagogical approach to outcome-based and to equip students with 21st-century skills like critical thinking and problem-solving.
New pedagogical structure - Foundational Stage, Preparatory Stage and Middle Stage	Curriculum was designed in 2014, so the system is primary and upper primary One course based on the development of literacy and numeracy skills at the foundational stage is offered.	The pedagogical structure needs to be aligned as per the NEP recommendation. Also, School education is to be treated as a continuum from preschool to higher secondary No mention of Anganwadis and its co-location or of preschool years which are vital for school readiness.
Pedagogy: play-based, activity-based, inquiry-based & development of critical & analytical thinking	Curriculum promoting experiential and activity-based pedagogy	High order thinking, problem-solving skills not particularly mentioned Also encouraging the use of indigenous materials, toy-based pedagogy may be promoted.

Emphasis on local language and language across the curriculum	Language as a different pedagogical subject	Language across the curriculum, promoting home language, promoting teachers who can communicate in local language involving local community are not emphasised.
Integration of technology in all courses. Inclusive education - Addressing diversity across the curriculum	Separate course on Technology and ICT in education Inclusive education as a separate paper	No directions in integrating technology in teaching-learning at the primary stage or for individual subjects
Involving parents, community, spreading awareness, home-based education Identifying and promoting gifted children		There is more focus on technical aspects rather than developing sensitivity towards inclusion. Curriculum, textbooks analysis through a gender lens, dealing with individual differences, and involvement of parents & community are not suggested. No mention of giftedness in children
Assessment - continuous & comprehensive. 360-degree report card	Continuous, formative, comprehensive assessment, making of blueprint, design question paper, different types of evaluation	No training for 360-degree report card covering all aspects of development

3.4 Summary

The summary of what the BTC curriculum offers and the recommendations for strengthening the curriculum are described below for re-designing the curriculum for teacher education in light of the latest policy recommendations.

3.4.1 What the BTC Curriculum Offers

The following aspects of the BTC curriculum are worth noting

- There is ample scope for student teachers' engagement with theoretical concepts and frameworks in the prescribed curriculum.
- The objectives of the overall curriculum emphasise the learner's curricular and co-curricular aspects.
- Value orientation is integrated within the curriculum aligned to the 21st century needs like peace, harmony, constitutional values, environment education, health, protection of child rights, National Integrity, and universal friendship, which is very important for equipping students for Global citizenship.
- Ideas of educational thinkers such as Gandhi, Tagore, Dewey, Krishnamurti, Montessori and others examined in their socio-historical contexts would give a strong foundation.
- The prescribed curriculum would acquaint students with the changes and impact brought about in the present Indian education system. It would also identify the issues in the new academic realm and try to solve them in a planned way.
- The content for each course is structured from easy to complex, broad to narrow, unknown to known, visible to invisible, and specific to general, which aligns with successful teaching models.
- Under inclusive education, there are directions for connecting students with special needs with education through ICT-based materials/game-based learning and familiarising them with agencies and organisations that provide guidance and counselling.
- Various methods are suggested, such as lecture, descriptive, and explanation which are teacher-centred and questioning; experiential storytelling learning, activity method, play method; fieldwork use of folklore, poetry and debates, which are child-centred.
- Each theory course has in-built field-based units of study leading to projects and assignments
- A good emphasis on practicum through one month-long internship is a highlight in the curriculum that would enable a strong theory-practice connection.

3.4.2 Gap Analysis - Strengthening the BTC Curriculum

The current curriculum document functions more like a syllabus listing all courses, course outlines, and readings. The document does not adequately explain the approach, philosophy, and rationale underlying the program's design; therefore, they have been derived from the course outlines. With the emergence of the new NEP 2020 (GoI, 2020), a collaborative and holistic exercise of curriculum renewal involving all stakeholders is recommended. The state could develop position papers and a detailed curriculum framework document making explicit their philosophy, approach and position on pre-service teacher education.

The main gaps are synthesised below:
- A major emphasis on educating teachers as analytical, humane, and independent practitioners who can address social justice issues is not evident (NCTE, 2009; GoI, 2020).
- Opportunities to strengthen reflection processes through collaborative learning in communities of practice are not expressly mentioned (GoI, 2020).
- Gender perspectives would be required in all classes, whether to comprehend children's development or concerns of society, culture, equity, and diversity. There may be more discussions on gender identity, social and personal conflict, childhood, and relationships (NCTE, 2009, GoI, 2020).
- Developing teachers' Pedagogical Content Knowledge (PCK) and introducing teachers to research-based PCK in the different topic domains are generally absent (NCTE, 2009, UNESCO, 2021).
- Despite the existence of a separate paper on inclusive education, the concepts of inclusive education must permeate all elements of the curriculum in order to meet the needs of all students, including those with special needs and disabilities and those from socially marginalised backgrounds (NCTE, 2009, GoI, 2020, UNESCO, 2021).
- Similarly, although a course covers the topic of ICT and education, the course is obsolete and extremely academic. More skill development must be incorporated into the course (NCTE, 2009, GoI, 2020, UNESCO, 2021).
- The specified curriculum provides limited opportunities for student-teacher reflection and does not emphasise the student-teacher's role as a reflective practitioner. Similarly,

insufficient information is provided regarding the Internship process (NCTE, 2009, NCERT, 2013, UNESCO, 2021).

- Professional development and self-improvement are underrepresented in the curriculum. There are no courses that specifically address these issues within the curriculum. According to research, in addition to technical knowledge, teachers must address their deeply ingrained ideas and attitudes regarding students and learning to be effective professionals. These areas must be addressed through specific self and professional development courses (NCTE, 2009, NCERT, 2013).

- Although the importance of language is described in depth under language courses, language must be incorporated throughout the curriculum. There is minimal room for strengthening student teachers' language proficiency and communication skills. Observing and recognising incompatibilities between school language and home language and analysing textbooks and other subject-specific resources for presentation are not covered. Emergent literacy, for example, is absent from the foundational stage and must be included (NCTE, 2009; GoI, 2020).

- Parental and community involvement, which is essential to the learning process, is not highlighted. Teachers must be trained to organise specific events with people in the community and then to participate, make students aware of, and engage them in certain pervasive social issues (GoI, 2020).

Chapter 4: Situational Analysis

4.1 Introduction

This chapter is an analysis of the DIETs in UP covering a review of studies of DIETs in India, an understanding of field perceptions of the current UP D.El.Ed curriculum (BTC 2014) and the analysis of primary data collected through interviews, focus group discussions, observations and school visits of DIET faculty and stakeholders, including block-level educators, resource persons, school heads and teachers.

4.2 Review of DIET Studies

A review of studies undertaken concerning DIETs was conducted prior to the fieldwork, and findings from three studies (TISS, 2017; Akai & Sarangapani, 2017; Dyer et al., 2004) and the Joint Review Mission for Teacher Education, Uttar Pradesh (GoI, 2013) report are summarised below.

In 2017, the Ministry of Human Resource Development of India sought to evaluate the effectiveness of the government's teacher education institutions (TEIs). The Tata Institute of Social Sciences (TISS), Mumbai, conducted the third-party evaluation across 11 States and 2 Union Territories (TISS, 2017); this is the first study of the desk review. The second study is based on a four-year investigation of PSTE in a rural and underdeveloped region of Maharashtra. The paper compiles findings regarding student-teachers and their teacher education programme (Akai & Sarangapani, 2017). The third study is a comparative analysis of DIETs in Gujarat, Madhya Pradesh, and Rajasthan, three Indian states. One DIET was located in a district with an external intervention in each state (Lok Jumbish in Rajasthan and the District Primary Education Programme in the other two states).

Shortages of academic staff and vacancies were reported in all the studies (TISS, 2017; Akai & Sarangapani, 2017; Dyer et al., 2004) and the JRM report (GoI, 2013). Developing an institutional vision, purpose and goals and a holistic approach to teacher professional development for elementary education, including upgrading the curriculum, was a recommendation proposed (TISS, 2017, Akai & Sarangapani, 2017, GoI, 2013, Dyer et al., 2004).

The need to provide opportunities for teacher educators' professional development and growth was recommended in the studies (TISS, 2017; GoI, 2013; Dyer et al., 2004). Upgrading infrastructure and updating resources was a recommendation by all studies (TISS, 2017; Akai & Sarangapani, 2017; Dyer et al., 2004) and the JRM report (GoI, 2013). Decentralisation visualised by the CSSTE scheme was not found operational to any significant degree, with planning being centralised. In-service teacher professional development was largely centrally driven. Linkages with BRCs and CRCs were weak, and school-based follow-up after training was irregular and poorly documented (TISS, 2017, Dyer et al., 2004). Networking and collaboration across DIETs were weak with block-level and other institutes (TISS, 2017, GoI, 2013). The Maharashtra DIET study (Akai & Sarangapani, 2017)) concluded that pre-service teacher education should not be removed from DIETs as there is strong evidence from the DIET that it was a preferred option for local students in the backward district of Maharashtra. Few DIETs conducted small-scale research; however, the rigour of research and the usage of findings to inform the improvement of practice were found to be missing or weak (TISS,2017). Overall, the desk review indicated poor resourcing of faculty, staff and infrastructure, outdated curricula, traditional pedagogical approaches for professional development, lack of exposure and professional development for teacher educators, use of ICT limited to administrative purposes, due attention not given to nurturing academic faculty to carry out educational research and poor inter-institutional collaboration and networking and centralised planning.

4.3 District-wise Analysis of DIETs

4.3.1 Development Indicators

Tables 4.1 and 4.2 are based on data drawn from the 2011 census. Table 4.1 indices have been drawn from Maurya, Singh, & Khare's (2016) work. Table 4.2 is taken from the State Planning Institute Planning Department (SPIPD) reports, Uttar Pradesh.

SI No	DIET Name	HDI		Education		Health		Standard of Living	
	District	I	R	I	R	I	R	I	R
	Maximum	**0.757**		**0.822**		**0.753**		**0.696**	
	Minimum	**0.443**		**0.491**		**0.526**		**0.311**	
1	Lucknow	0.717	3	0.793	6	0.821	3	0.537	2
2	Jhansi	0.702	5	0.764	10	0.832	2	0.511	7
3	Meerut	0.681	6	0.748	13	0.779	10	0.517	5
4	Agra	0.6524	14	0.694	43	0.774	11	0.489	14
5	Gorakhpur	0.621	25	0.733	25	0.726	25	0.405	48
6	Varanasi	0.617	27	0.771	9	0.653	47	0.427	35
7	Chitrakoot	0.616	29	0.665	52	0.69	35	0.493	13
8	Aligarh	0.6113	35	0.696	42	0.674	41	0.464	19
9	Bareilly	0.5727	53	0.605	66	0.642	50	0.471	18
10	*Ayodhya	0.558	62	0.706	34	0.642	60	0.410	45
11	Balrampur	0.4982	71	0.518	70	0.584	70	0.393	51

Table 4.1 District-wise Human Development Index

Data Source: Human development in Uttar Pradesh: A district level analysis (Maurya, Singh, & Khare, 2016),Table 5, Page 276. *Faizabad data

I = Index   R = Rank

Among the DIETs visited, Balrampur, an aspirational district with the poorest development indicators and the field experiences also showed that it was the most poorly developed DIET, with no pre-service education. From the tables, it can be seen that the DIETs selected as Centres of Excellence (CoEs) range from high HDI (Jhansi and Meerut), medium HDI indicators (Gorakhpur, Varanasi and Aligarh), with Aligarh district with the lowest HDI and female literacy rate among the districts selected to be developed as CoEs. Among the CoE DIET districts, Jhansi has the highest percentage of Scheduled Caste (SC) population, and Varanasi has the highest Scheduled Tribe (ST) population (Refer to Table 4.1 and Table 4.2).

Table 4.2 District-wise Development Indicators -2011								
Sl No	DIET Name	Population (000)	Geography (Sq Km)	Sex Ratio	% Urbanisation	% SC Population	% ST Population	Literacy Rate Male	Literacy Rate Female
1	Lucknow	4590	2528	917	66.21	20.66	0.16	82.56	71.54
2	Jhansi	1999	5024	890	41.7	28.14	0.19	85.38	63.49
3	Meerut	3444	2559	886	51.08	18.12	0.1	80.74	63.98
4	Agra	4419	4041	868	45.81	22.43	0.16	80.62	61.18
5	Gorakhpur	4441	3321	950	18.83	21.08	0.41	81.8	59.36
6	Varanasi	3677	1535	913	43.44	13.24	0.78	83.78	66.69
7	Chitrakoot	992	3216	879	9.71	26.89	0.04	75.8	52.74
8	Aligarh	3674	3650	882	33.13	20.56	0.02	77.97	55.68
9	Bareilly	4448	4120	887	35.26	12.52	0.07	67.5	48.3
10	Ayodhya	2471	2341	962	13.77	22.46	0.04	78.12	59.03
11	Balrampur	2149	3349	928	7.74	12.9	1.16	59.73	38.43
Data Source: District Wise Development Indicators Uttar Pradesh 2019 (SPIPD, 2019)								

4.3.2 Sanctioned Positions in DIETs

Table 4.3 shows that there has been minimal change in the filling up of posts since 2013. A large number of vacancies persist in the system. The academic position of lecturer appears to be the only position that has been filled since 2013 and demonstrates a significant increase to 80%. In the para-academic positions, overall vacancy rates are low, and roles appear to have shifted. The librarian and assistant laboratory roles have emerged, whereas the technical assistant role no longer exists. Current support staff data is not available.

Table 4.3: Sanctioned Positions in DIETs				
Total # of districts: 75			**Total # of DIETs: 70**	
Position	**Number Sanctioned per DIET (Total for 70 DIETs)**	**Number of positions filled across 70 DIETs (2013)***	**Number of positions filled across 70 DIETs (2022)**	**% of Positions filled across DIETs (2022)**
Academic Posts				
Principal	1 (70)	23	24	34%
Vice Principal	1 (70)	16	30	43%
Senior Lecturer	Upto 6 (420)	79	85	20%
Lecturers	Upto 17(1190)	417	955	80%
Para Academic Posts				
Work Education Teacher	1 (70)	47	18	26%
Librarian	1 (70)		9	13%
Laboratory Assistant	1 (70)		18	26%
Technical Assistant	1 (70)	36		N/A
Statistician/ Accountant	1 (70)	34	12	17%
Support Staff				
Support Staff	1386	848	No Data Available	N/A
*Data Source : Joint Review Mission on Teacher education of states, Uttar Pradesh GoI(2013)				

4.3.3 Data Factsheets

As described in Chapter 2, a spreadsheet template was sent to all DIET principals to submit data such as pre-service enrollments, in-service training and participation, local innovations and infrastructure availability. Fifty-four out of the seventy DIETs submitted the data. However, we found that among the 70 submissions, about 20 to 30 DIETs' data was accurate, while others

had many errors. We could gather general ideas about enrollments, in-service training and adaptations of work and processes during the pandemic that have been integrated into the analysis in the following sections. The only complete data was regarding infrastructure; Table 4.4 details infrastructure availability for the DIETs that submitted their data.

Table 4.4: Infrastructure in DIETs											
CR Classrooms| SR Seminar Rooms| SPR Special Rooms | SFR Staff Rooms | LIB Library / Resource Centre | ICT ICT/Computer Lab | SL Science Lab | ML Mathematics Lab | LL Language Lab | TOI Toilets | HOS Hostel | C/DH Canteen/ Dining Hall											
DIET Name	CR	SR	SPR	SFR	LIB	ICT	SL	ML	LL	TOI	HOS	C/DH
Agra	3	1	0	1	1	1	1	0	0	1*	0	0
Aligarh	4	1	20**	1	1	0	0	0	0	4	1	0
Ambedkarnagar	9	0	0	0	1	0	0	0	0	10	0	0
Amroha	4	1	0	1	1	1	1	1	0	16	1	1
Auraiya	7	2	0	6	1	1	1	1	0	7	0	0
Ayodhya	4	1	0	1	1	0	1	0	0	4	0	0
Azamgarh	5	1	1	1	1	0	0	0	0	4	1	0
Baghpat	4	0	0	1	1	0	1	1	0	6	1	0
Bahraich	4	2	0	2	1	0	1	1	0	10	0	0
Balia	0	1	1	1	1	0	0	0	0	1	0	0
Balrampur	4	0	1	1	1	0	0	0	0	8	1	0
Barabanki	6	1	0	1	1	1	1		0	4	0	0
Bareilly	2	1	0	1	1	1	1	1	0	2	0	0
Banda	4	0	0	1	1	0	0	0	0	4	0	0
Basti	4	1	0	1	1	0	0	0	0	5	1	0
Bhadohi	6	2	1	6	1	0	1	0	0	6	0	0
Bijnor	2	1	0	0	0	0	1	0	0	4	0	0

DIET Name	CR	SR	SPR	SFR	LIB	ICT	SL	ML	LL	TOI	HOS	C/DH
Budaun	4	0	3	1	`1	0	1	0	0	4	1	0
Bulandshahar	4	2	0	1	1	0	0	0	0	4	1	0
Chandauli	5	1	1	2	1	1	1	0	0	8	1	0
Chitrakoot	6	0	0	1	1	1	1	0	0	4	1	0
Deoria	7	1	1	1	1	1	1	0	0	5	0	0
Etah	2	0	1	1	1	0	1	0	0	4	1	0
Etawah	6	1	1	1	1	0	1	1	0	4	1	0
Farrukabad	5	1	0	1	1	0	1	1	1	5	1	0
Fatehpur	2+	1	0	1	1	0	0	0	0	5	1	0
Firozabad	2	0	0	5	0	0	2	0	0	2	1	0
GB Nagar	3	1	0	1	1	0	1	0	0	20	1	0
Gonda	2	1	0	2	1	0	1	1	0	10	0	0
Gorakhpur	4	1	0	1	1	1	1	0	0	8	0	0
Gazipur	0	1	0	0	1	0	0	0	12++	1+++	0	0
Hamirpur	4	1	0	1	1	1	1	1	1	12	1	1
Hapur	3	1	0	2	1	0	0	0	0	6	0	0
Hardoi	4	1	5	4	1	0	1	0	0	4	2	0
Hathras	2	1	0	0	0	1	2	0	0	2	2	0
Jalaun	4	1	0	1	1	0	0	0	0	2	0	0
Jaunpur	6	1	0	0	1	0	0	0	0	8	0	0
Jhansi	12	1	0	1	1	1	1	0	0	4	1	0
Kannauj	4	1	0	0	0	0	0	0	0	15	0	0
Kanpur Dehat	4	1	0	1	1	0	0	0	0	8	0	0
Kanpur Nagar	5	1	0	1	1	1	1	0	0	4	0	0

DIET Name	CR	SR	SPR	SFR	LIB	ICT	SL	ML	LL	TOI	HOS	C/DH
Kaushambi	3	1	1	4	1	0	1	0	0	16	0	0
Kushinagar	10	1	4	6	1	1	1	1	0	4	1	0
Lakhipur Kheri	4	1	1	1	1	1	2	0	0	7	2	1
Lalitpur	3	1	1	1	1	0	1	0	0	3	1♦	0
Lucknow	2^	0	0	4	1	1^^	0^^^	0	0	10	1^^^^	1
Maharajganj	6	1	1	2	1	0	1	0	0	2	0	0
Mahoba	4	2	0	1	1	0	1	0	0	10	1	1
Manipuri	2	1	1	1	1	1	0	0	0	5	0	0
Mathura	5	2	1	1	1	1	1	1	0	6	2	1
Mau	4&	0	0	1	1&&	0	1&&	0	0	2	0	0
Meerut	4	0	0	1	1	1	0	0	0	5	0	0
Mirzapur	3	0	0	12	30	0	0	0	0	2	2	0
Moradabad	4	1	0	1	1	0	1	0	0	6	2	0
Muzzafarnagar	6	1	1	1	1	1	1	1	0	4	1	0
Pilibhit	2	0	0	1	1	0	0	0	0	4	1	0
Pratapgarh	4	1	1	1	1	1	1	0	1	4	1	0
Prayagraj	3	1	0	1	1	2	0	0	0	2	0	0
Raebareli	3	0	0	1	1	1	1	0	0	4	2	1
Rampur	7	1	1	1	1	1	1	0	0	5	0	0
Saharanpur	10	2	1	1	1	1	1	0	0	12	1	1
Sant Kabir Nagar	8♦	1♦♦	1♦♦	1	1	0♦♦♦	0♦♦♦	0♦♦♦	0	4♦♦♦♦	1♦♦♦♦♦	0
Shahjahanpur	4	1	0	1	0	0	0	0	0	11	0	0
Shrawasti	4	1	1	1	1	1	1	1	-	4	1	0
Siddharth Nagar	2	0	0	1	1	0	1	0	0	2¶	1¶¶	0

DIET Name	CR	SR	SPR	SFR	LIB	ICT	SL	ML	LL	TOI	HOS	C/DH
Sitapur	3	1	1	1	1	1	1	0	0	4	1	1
Sonbhadra	3	1	0	1	1	0	1	0	0	4	0	0
Sultanpur	4	1	1	2	1	0	2	0	0	6	0	0
Varanasi	6	2	0	1	1	0	0	0	0	6	1	0
Unnao	4	2	0	4	0	0	0	0	0	4	0	0

CR Classrooms| **SR** Seminar Rooms| **SPR** Special Rooms | **SFR** Staff Rooms |
LIB Library / Resource Centre | **ICT** ICT/Computer Lab | **SL** Science Lab |
ML Mathematics Lab | **LL** Language Lab |
TOI Toilets | **HOS** Hostel | **C/DH** Canteen/ Dining Hall

* Boys + Girls | ** there are many rooms which are named as ICT, science lab etc but there is no material regarding these rooms |
 + two big halls with capacity of 100 sittings | ++ 8 functional | +++ 1 non-functional
♦ Not in good condition
^ Classrooms are under construction | ^^ 25 person under renovation | ^^^ Under strengthening and reallocation | ^^^^ No allotment for students science 2000, hence canteen not in use.
& Insufficient | && Not functional
♦ 4 are functional; 4 under construction | ♦♦ under construction |♦♦♦ Proposed |♦♦♦♦ 2 Boys; 2 Girls
¶ 1 Boy; 1 Girls | ¶¶ Boys hostel has been deputed to KGBV Khesraha

4.4 Situational Analysis

4.4.1 Institution Identity and Focus / Functions and Activities

The purpose of studying individual DIET's identity and focus was to understand their unique strengths, areas of intervention and ability to function as independent institutions with a vision (if any) and not merely function as implementing agencies of the state programmes at the district level. As described by a Junior lecturer, *"We have no powers as such, we can only give them suggestions to improve both to the teacher and BSA in charge. The chain of communication between us and SCERT needs to be improved."* During our field visits to select DIETs, we were able to observe their operation in detail, and it was determined that these DIETs did not appear to have any distinctive focus areas, nor were they able to provide district-level contextual teacher education. Almost no effort was made to create a reflective teaching space or implement innovative classroom pedagogy. Rather, it was observed that the majority of

activities in DIETs involved the implementation of SCERT-centrally defined programmes. Some DIETs welcome support from Non-Governmental Organizations (NGOs) and run unique activities based on collaborations with various NGOs or workshops and events, such as yoga, wall painting, and remedial instruction. Aside from these collaborations, workshops, and events, the activities were not particularly focused on the local / community needs; rather, the focus areas and identities of the majority of DIETs were similar and based on directives from the administrative and academic head of the state, SCERT, located in the state capital of Lucknow. It was observed that the three primary focus areas of most of the DIETs are

       1) Pre-service teacher education

       2) In-service education, and

       3) School support for primary and upper primary classes.

An aspirational focus area is action research, but little evidence of rigorous research was found in the DIETs.

Pre-service Teacher Education: DIETs provide pre-service education leading to the state's D.El.Ed degree. In UP, D.El.Ed is a well-liked programme, and it has been observed that aspirants frequently enrol in this programme after earning a master's[2] degree. 43 DIETs can admit up to 200 students per batch, 3 DIETs can admit up to 150 students, 10 DIETs can admit up to 100 students and 10 DIETs can admit up to 50 students each year; only 4 DIETs (Ambedkar Nagar, Siddharth Nagar, Balrampur, and Hamirpur) do not offer pre-service education. Approximately 9210 students were enrolled across all DIETs in the state, representing an enrollment rate of approximately 87.2% for the 2022-24 cohort. In most districts, male and female enrollments are nearly equal in number.

Bachelor's degree in any discipline is a prerequisite for admission to the course. Applicants are assigned to various district DIETs based on the grades they earned in their degrees. During interactions with student-teachers in DIETs, we discovered that the main reason for enrolling in the D.El.Ed programme was the belief that it was the quickest route to a government job. Male and female student-teachers informed us that obtaining a government position would garner their high esteem in their community, favourable marriage prospects, and job security during

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[2] In DIET Lucknow we interacted with more than 20 students who had completed a BTech or other professional degree and even an MTech degree and had joined the DElEd Programme. These students were more senior in age when compared to the average female students.

their D.El.Ed programme, the majority of student teachers were busy preparing for other competitive examinations, such as UPSC[3] and UPPSC[4]. Upon completion of the D.El.Ed programme, student-teachers take the TET examination. State-advertised openings for the elementary school teacher position require applicants to have passed the TET[5] examination. Student-teachers must take the "Super TET" examination as part of the recruitment process.

Figure 4.1 Morning assembly observed in one of the DIETs

During the visits, it was observed that the library and labs were under-resourced or had outdated resources and were not put to use—the teaching in the D.El.Ed programme was largely lecture-based with limited teaching-learning resources in the classrooms observed. At the same time, SCERT has published modules[6] for the different D.El.Ed courses, these texts are available

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[3] UPSC - Union Public Service Commission
[4] UPPSC - Uttar Pradesh Public Service Commission
[5] TET - Teacher Eligibility Test
[6] All study material, semester-wise is available in Hindi as PDF files to download on the official SCERT UP website https://www.scert-up.in/index.aspx

only as soft copies that a few student-teachers get printed. Most students used guides published by private publishers as their main resource.

It was also noted that male and female students in the DIETs sat in separate classrooms or sat separately in the same classroom. Even the faculty in some of the DIETs had separate female and male staff rooms. The female students were observed to be more diligent in the classroom, and in some classes, the male students were quite disengaged or sometimes disruptive. Many faculty expressed the need to update the science laboratories, set up mathematics labs and introduce student-teachers to computer use. DIET lecturers were keen to develop professional skills among students, such as communication skills and address aspects of their well-being. Many faculty and student-teachers expressed the need for good ICT (computer) labs and a technician to help maintain and run the Labs. Most of the science and mathematics lecturers mentioned that the curriculum was outdated, especially pointing out the absence of PCK elements in the pedagogy courses. As described by a science lecturer, *"The course is not challenging at all, the content portion is very outdated. We are sometimes done with the syllabus within just two months, this thereby impacts on the interest and motivation level of the students to pursue it in the long-term. The need for a teacher is not completely full-filled and also the pedagogy part in this course is missing. Here education is present as a subject, but there is no pedagogy of science or nature of science."* Interactions with lecturers, student-teachers, school heads and teachers revealed that the programme's Internship component is fairly routinised. Only a few student-teachers explicitly mentioned enjoying the internship component of the course. In schools, head teachers and teachers could not describe the details of the internship apart from the routine administrative work related to tracking attendance and submitting evaluations.

In-service programmes were not observed in most of the DIETs we visited. However, the faculty mentioned that DIETs directly offer continuous professional development programmes to ARPs and SRGs, and most teacher training is coordinated by the DTO and the BEO and takes place in the BRCs. During the visits, the *NIPUN BHARAT*[7] programme implementation was visible in all the DIETs, BRCs and schools. The Samagra Shiksha in UP has defined the goals (preschool to

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[7] The NIPUN Bharat Mission or National Initiative for Proficiency in Reading with Understanding and Numeracy is launched by the Education Ministry of India under National Education Policy 2020. This scheme ensures that every child in India gains foundational numeracy and literacy by the end of Grade 3 and mission plans to achieve the discussed goals by 2026-27.

class 3) for language and mathematics and aims to achieve 100% outcomes by 2025-26. To track the progress of all students in the programme, a mobile application has been developed and utilised by the schools. During our school visits and interviews with key stakeholders, we observed that the App was being utilised frequently and that the programme was being implemented at all levels. Many DIETs were also conducting storytelling competitions for teachers during the visit. The storytelling and other competitions were one of the popular innovative activities listed by many DIETs in the factsheets submitted. The Anganwadi or preschool (See Figure 4.2) was situated in some of the schools we visited; both the preschool and the grade one teacher had attended training and were well informed of emergent and new literacy practices. However, there were no visible preschool teaching and learning indicators in any of the DIETs' activities. One DIET principal mentioned that Anganwadi workers were given five days of training each year at the DIET.

Figure 4.2 Anganwadi kendra at one of the schools of Meerut

The Room to Read NGO (See Figure 4.3) had made significant progress and was active in the schools visited on the outskirts of Lucknow. Overall good literacy practices and reading with understanding were observed in many schools visited across the districts. The early mathematics and environmental studies (early science) were barely visible in the schools or the DIETs. Teachers were not as aware of the newer pedagogical approaches for developing numerical thinking and reasoning compared to their awareness of newer approaches to literacy.

Figure 4.3 A Library programme working in Lucknow Primary Schools

Recently DIET faculty and teachers participated in an online professional development programme (See Figure 4.4) launched by CETE, TISS, Mumbai, with support from UNICEF in collaboration with the state education department. The programme aimed to equip teacher educators and teachers with skills to leverage technology for teaching-learning inside and outside the classrooms. Two hundred sixty-three teachers or teacher educators completed the course 'Constructive Teaching and Learning with Technology' and earned certificates. Fifty teachers/teacher educators additionally earned digital badges for the course 'Mentoring for Constructive Teaching and Learning with Technology'.

Figure 4.4 Online 21st Century Professional Development Programme

Supportive Supervision and Mentoring of Teachers: The school support system is well established in the state and works for elementary education, with lecturers providing academic support to schools along with the ARPs and SRGs. DIET lecturers are mentors in schools who do supportive supervision in 10 schools every month and give feedback to school principals and teachers. The DIET lecturers are also expected to submit their school visit report on the Prerna Supportive Supervision App for block-level education officers to consolidate and use for improving education quality. One DIET lecturer described this work in detail *"We check on 19 parameters when we go to these schools firstly the presence of teachers we check in the register, enrollment of these students, how many of them are present and whether they are improving at the same level. Besides this we look into the Mid Day Meal, washrooms, posters on different policies, sports facilities, TLM's, Math and Science Kits, morning assemblies, cleanliness, discuss on their issues"*. Several DIET faculty expressed the need for DIETs to extend school support for

secondary schools. Some DIETs (Bareilly, Jhansi) supported the district's KGBV schools (See Figure 4.5).

Figure 4.5 KGBV school in the campus of DIET Jhansi

Research, including data collation and analysis, appears weak in all DIETs. The factsheets that most DIETs provided had errors. We did not see evidence of research undertaken by the DIETs. We only noticed some research publications in the DIET Lucknow Library that were also quite outdated. Data management and analysis must be strengthened in all DIETs to enable continuous, contextual and corrective actions of programme and policy implementation. Capacity building for managing rigorous research work needs to be built among faculty. Several senior and junior faculty mentioned the need for professional development in data management, analysis and research.

4.4.2 Systemic location and relation to other institutions

The DIET's relationship with the SCERT is hierarchical. Most DIET activities planning takes place centrally, and DIETs have limited flexibility and capabilities to make contextually relevant plans. The DIET faculty must liaise with many stakeholders with different roles and responsibilities around school supervision and teacher mentoring. From the interview with stakeholders, we could gather the following roles.

Basic Shiksha Adhikari (BSA) is the administrative head at the district level, and the District Coordinator, Training (DCT) coordinates in-service teacher training. At the block level, the Block Education Officer (BEO) administers, supervises, inspects and guides education. Academic Resource Persons (ARPs) and State Resource Groups (SRG) provide supportive supervision and mentoring to schools and teachers. While ARPs are assigned this role entirely, SRGs perform the mentoring role for 15 days a month and continue their school teacher duties for the 15 remaining days.

The DIET's relationship with the Samagra Shikha and the education department is mostly through the SCERT. Additionally, the BSA and BEO also run department programmes directly. The education department has developed some Apps/portals to support supervision, mentoring and monitoring education at the schools. All education stakeholders at the district, block and school levels use these Apps to mark the completion of their work, report visits and track progress. While head teachers were satisfied with the feedback from the NIPUN BHARAT App for tracking student's learning outcomes, some ARPs, and DIET lecturers mentioned that the data from the Prerna App was not visible to them easily and they needed support to extract and analyse the data to work out corrective measures.

During the visits (See Figure 4.6), evidence of a strong DIET - BRC relationship was absent. Some junior lecturers explained that the BEOs, DTCs, ARPs, and SRGs have a monthly meeting in the DIET with its Principal, Senior Lecturers and Junior Lecturers to monitor district schools. One SRG explained that these meetings are administrative and high-level, and they do not have the opportunity to discuss individual school or teacher-level issues. Some lecturers mentioned coordinating with ARPs directly to discuss school mentoring issues specifically. DIET lecturers also provide training to the ARPs. The ARPs and SRGs meet in the BRCs regularly to discuss their work, and some ARPs found these meetings beneficial, while some of the ARPs complained that the meetings were largely administrative. The responses from head teachers and teachers regarding mentoring and supervision were mixed. While some schools appreciated

the supervision and support, others felt that it was mechanical and that supervision was largely about submitting checklists.

Figure 4.6 In-service training session on English at BRC Karvi, Chitrakoot

Overall, the systemic structures for school mentoring and supportive supervision are in place, and even the monitoring and tracking of activities are done regularly through data collected in the Prerna Apps. However, the quality of mentoring and supervision appears to be based more on the individual ARP or SRG and not uniform. The systematic capacity building of DIET lecturers, ARPs and SRGs to function as mentors and provide academic support is missing. DIET lecturers and ARPs are not exposed to the latest pedagogical trends and need external expertise to develop their capacity.

4.4.3 Financial Aspects

It was observed that most of the planning about financial matters in DIETs is arrived at centrally with directives from the SCERT. However, in many instances, it was also noticed that several facilities were augmented in DIETs with either funds received from several non-governmental organisations (NGOs) or infrastructural augments directly installed by the NGOs some of the DIETs are associated with. Notable among these are books added to the library stock, which are

often direct publications of the associated NGOs; water purifiers and dispensers installed from the funds received under the CSR scheme of several governmental and non-governmental organisations; and so on. It was observed that two kinds of budgets are prepared for each DIET. These are the "General" Budget, through which the SCERT allocates funds for academic purposes and overhead costs. The academic purposes include multiple heads, namely, programme cost, faculty cost, research cost, such as organising training workshops or sessions for in-service and pre-service teachers, salary disbursement of the lecturers and staff in the DIET, and so on.

In contrast, the overhead costs include wider routine matters such as stationary, contingency funds, etc. The other kind is the "Specific" Budget - the one prepared by the Principal, DIET, in consultation with the lecturers and senior lecturers regarding the particular needs within the institution, such as the infrastructural resources, resources for the laboratories and their maintenance as well as other routine but specific needs. For example, maintenance of the institutional vehicles and fuel costs to ensure smooth connectivity within the district comes under a "specific" budget. Different heads are seen in some DIETs where funds are also used for awards in events organised by DIETs for pre-and in-service teachers. To summarise, the budget allocated to DIETs can be categorised as having "planned" and "non-planned" components.

Delayed fund disbursement to DIETs was reported as a challenge. For instance, the salaries of faculty were delayed during the pandemic which caused tremendous hardships for many faculty members. SCERT confirmed that this situation is being addressed. It was also observed that non-sufficient fiscal allocation to infrastructure mobility has emerged as a roadblock for some of the planned activities and functions of some of the DIETs. We cite here three examples:

★ four to five DIETs reported that the lack of vehicle availability with them jeopardises their task of school monitoring and planned visits to the associated blocks and BRCs. Lecturers as well as senior lecturers are often forced to take their own vehicles for this visit purpose. The following statement was given by a DIET lecturer, "*We have been provided with a car in DIET but that is never available because we have 9 blocks (for monitoring)...we don't have enough cars for everyone to go for mentoring*".

★ It was noted that a few DIETs lacked proper drinking water facilities. Although in some DIETs, namely in DIET Varanasi, a water purifier and cooler has been installed from an

NGO's support, basic facilities such as drinking water and toilets including for those with special needs are needed to be made available under specific budgetary provision.

★ ARPs complained that they were not provided sufficient funds and resources for their duties, such as compensation for travel expenses incurred due to school visits and provision of devices as explained by an ARP. *"When the Mission Prena began, we ARP's were promised for laptops and tablets but, this has still not been fulfilled. The communication on latest policies to be updated which will be much easier when transacted through a tablet."*

In this study, similar patterns of lack of fiscal prudence was noticed in many DIETs due to which both vision and goals of DIETs get hampered and become unachievable.

4.4.4 Development of Faculty and Staff

DIETs need people with expertise and experience in elementary education. Currently, knowledge of elementary education through relevant certification or experience is unavailable among lecturers. Based on the factsheet data, most lecturers have a B.Ed degree (trained to be high school teachers). Additionally, based on the interviews, only junior lecturers are involved in academic work, and senior lecturers, vice-principal, and principal's roles are administrators of academic work. There are multiple routes to becoming a senior faculty or vice principal and principal. A lecturer may become a senior lecturer based on seniority, and an education administrator may also become a senior lecturer through a parallel entry based on succeeding in an examination. Hence, the junior lecturers were extremely demotivated about their career prospects. Many junior lecturers felt they did not stand a chance of promotion and would retire as junior lecturers.

There was also a problem of understaffing in all DIETs. Although 80% of the junior lecturer position has been filled, the vacancies remain high in all other posts, including leadership positions, para-academic and support staff. The situation has remained unchanged for over a decade (See Table 4.3). Hence the DIET faculty always struggle with human resources to complete their day-to-day activities, leaving very little time for planning, strategising and experimenting with innovative activities.

Based on the interviews with faculty, we understood that capacity-building opportunities for DIET faculty are very limited. While there are some capacity-building options, some lecturers

noted that such CPD programmes are not aligned with their needs or area of work and expertise. These lecturers have to provide training to ARPs and SRGs, and through a cascade model, the ARPs provide teachers training. Hence, in-service training workshops for mentoring and teacher support remain outdated, and therefore teachers are not exposed to innovative and new pedagogical approaches and ideas.

4.4.5 Collaboration & Partnerships

Communities of practice and professional fora are necessary for teacher education to promote reflective practice and develop professional elementary school teachers. Collaboration among the different state education institutions was limited to official periodic meetings at various levels - State, District, Block and Cluster. As observed in the interviews, these meetings mostly deal with routine administrative matters to track programme implementation. We did not see any examples of professional fora that discuss academic and pedagogical issues in detail. DIETs work largely in isolation and have not developed strong collaborations or partnerships with other DIETs or local colleges and universities.

Figure 4.7 Computer Lab set up by an NGO in DIET Gorakhpur

However, several NGOs performing varied functions with and for the DIETs were visible. Most NGOs worked in the in-service teacher professional development space by offering training in new pedagogical approaches to the teachers through workshops. Room to Read was visible in the Lucknow district; the DIET had a separate room allocated to this NGO in DIET Lucknow. The

schools we visited in Lucknow were actively engaged in the Room to Read programme. Sampark NGO was present in Aligarh, Agra, Ayodhya, Bareilly and Chitrakoot DIETs, offering in-service programmes to English language teachers. The Pratham NGO was present at various levels of engagement in all the DIETs, including support for the D.El.Ed online internship course during the pandemic, data collection for the ASER report and other in-service training programmes. The HUMANA NGO was present in Jhansi, Meerut and Ghorakpur. In Jhansi and Gorakhpur DIETs, the NGO funded and equipped the ICT Lab (See Figure 4.7) with 50 computers each and facilitated digital literacy workshops for the DIETs. The NGO have persons deputed in these DIETs who are teaching D.El.Ed courses alongside the DIET lecturers and have developed curricular material for D.El.Ed student teachers. DIET Varanasi was the only DIET which did not have an NGO presence. Some principals have been able to obtain local funding. For example, the water filter in DIET Varanasi was provided by the Union Bank of India. Smartphones and smart boards in a few schools for use during the Covid-19 lockdown period in Ayodhya schools were provided by GBTC, Malaysia.

4.4.6 Infrastructure & Resources

During the visits to the DIETs as part of this study, it emerged multiple times how the non-availability of a suitable infrastructure is becoming a roadblock in DIETs' discharge of roles and functions as the Academic Head of the district (See Table 4.4). In many instances, the teachers and faculty members raised the matter of inadequate financial resources, which hampered and compromised infrastructure development and maintenance. In most DIETs, the infrastructure needed to be strengthened by more classrooms and laboratories (science, ICT, mathematics) was immediately required. For example, DIET Varanasi (which has been chosen to become a Centre of Excellence) conducts training workshops and programmes for many stakeholders in the district. Due to the lack of suitable-sized halls and classrooms, such workshops are conducted in batches, not in one go. The fallout is resource waste and missed opportunities for interaction between students and stakeholders and to build a network and a community of practice. Ironically, it was reported that while DIET Varanasi has requested two large halls with 500 seating capacity in each, two classrooms with 150 seating capacity in each were sanctioned. Instead of multiple smaller classrooms, if there are larger halls, resources and time can be optimised by avoiding reorganising and repeating the same workshop on multiple occasions. Some DIETs have been identified as potential Centers of Excellence and are given a grant of Rs 20 lakhs for strengthening infrastructure and other facilities around these.

Interestingly, the budget was sanctioned, but the planned design of the infrastructure augment was not. Infrastructure build-up and maintenance appeared to be calling for immediate attention, and all DIET seem to require more funding support, especially for improving infrastructure facilities. In some DIETs, financial support is provided by NGOs, CSR funding and individual philanthropists at the district level.

Another observation in all DIETs was the lack of teaching-learning resources, including digital technologies. The DIETs were either poorly resourced or the resources were outdated. Most of the libraries carried old and outdated books. Periodicals, teacher magazines and journal publications were largely missing. There did not appear to be any systematic plan to keep the library resources up to date in any DIETs. Similarly, the ICT infrastructure and science and mathematics labs were poorly resourced (See Figure 4.8) or not actively used, as we saw much dust collecting on these resources and no plans to maintain the equipment.

Figure 4.8 Equipment in the science lab at one of the DIETs

4.4.7 Impact of COVID-19

The impact of the pandemic lockdown was felt at several levels, including the continuation of pre-service education, in-service training and school education. In 2020-2021 there were no new enrollments in the D.El.Ed programme. The faculty moved to online learning, making videos and

presentations and using WhatsApp for sharing the content. 6 DIETs specifically mentioned using Facebook, and 2 DIETs said they used YouTube to share their content. Over 10 DIETs mentioned using Google Meet and ZOOM to conduct synchronous classes. One DIET mentioned using the DIKSHA portal to share the course content they created for online learning. The internship part of the pre-service programme was also moved online. All DIETs reported that the centrally designed programme Karke Sikhna Karyakram in collaboration with the NGO Pratham enabled conducting of online internships. The data on the in-service programmes are not very accurate, and it appears that many DIETs were not conducting or minimally conducting in-service training programmes during the pandemic period. There is no explicit mention of online workshops conducted during the pandemic; some DIETs reported that the basic training continued even during the pandemic, and others mentioned that during the early phase of the pandemic, they were required to come into the DIETs, but afterwards, all work went online.
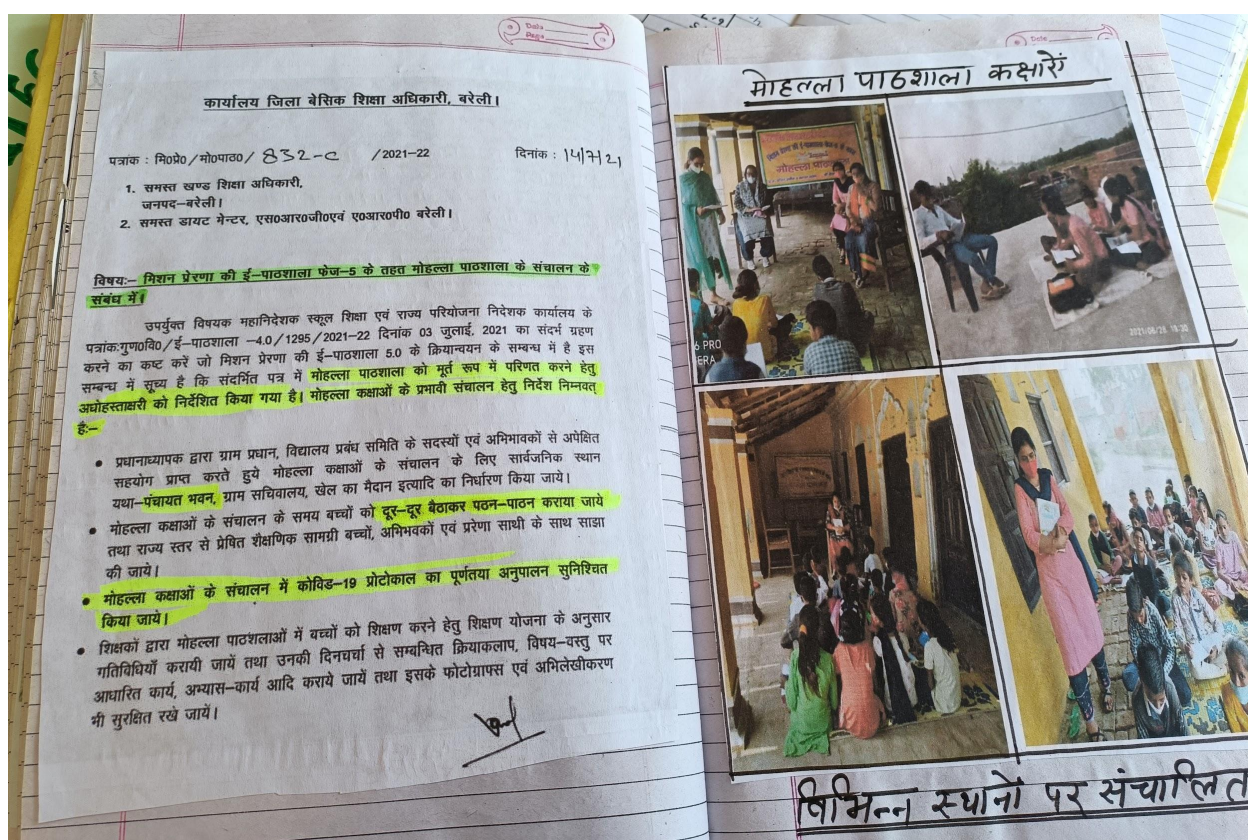

Figure 4.9 A letter regarding Mohalla classes - at an Upper Primary School in Bareilly

One of the bottom-up innovations, the Mohalla School (See Figure 4.9), was successfully implemented to take the schools into the communities and in open spaces. We met the head teacher in a primary school in Lucknow who had designed and initiated this programme and was given a state award for his efforts. The DIETs across districts in UP coordinated this programme along with the Shiksha Mitras. DIET lecturers reported over 70% turnout in the Mohalla classes.

4.5 Gap Analysis - Developing DIETs as CoEs

The state is already in the process of developing DIETs as Centres of Excellence. A CoE provides leadership, best practices, research and support in all the state's teacher education areas. This section compares the current performance, expectations, goals and issues of the DIETs in the state and identifies the gaps and shortcomings to inform plans to transform DIETs to function as CoEs.

Outdated D.El.Ed Curriculum: In Chapter 3, we discussed the gaps in the design of the current D.El.Ed curriculum and suggested that the curriculum needs to be updated to reflect current research trends in pre-service education. The same observation was echoed by several DIET lecturers who felt that the curriculum was outdated and needed to be renewed. One important aspect was the missing component of PCK in the science and mathematics pedagogy courses for upper primary school teaching. The pedagogy we observed was lecture-based, with very few teaching-learning resources, minimum experimenting, and activity-based or experiential learning methodologies. A critical aspect of pre-service education is the internship experience provided to student-teachers. We observed that this activity was carried out mechanically with hardly any evidence of reflective practice. Many lecturers and student-teachers felt they needed professional skill development opportunities such as digital literacy, communication, critical thinking and self-development. The State is moving towards integrating Anganwadis and preschool within primary schools; the early childhood and preschool education would also need to be updated in the D.El.Ed curriculum. These are some of the specific gaps observed in implementing the curriculum.

Lack of a systemic in-service teacher training approach: In the current scenario, DIETs either perform the centrally prescribed in-service teacher workshops or collaborate with NGOs to train teachers. There is no systematic process of planning the in-service training for an academic year based on teachers' needs or local context. DIETs can also not maintain a database of

individual teachers' training needs and record the training they have attended or create a professional development plan in advance. Teachers do not have a choice to opt for training in a particular subject/topic. They need to be given different options on workshops or courses they can take. The professional development plan should include a variety of opportunities, such as workshops, courses, seminars etc., curated by the DIET faculty and presented to the teachers as a coherent plan.

Poor linkages between pre-service, in-service teacher education and school support activities: Coordination between pre-service, in-service and school support activities is largely missing. Each function works independently, and synergy across these activities is essential to strengthening teacher education in the state. For example, the current NIPUN BHARAT programme, an outcome-based approach for in-service teachers, could be included in the pre-service curriculum.

Inadequate pedagogic and mentoring expertise among ARPs and SRGs: The systematic capacity building of ARPs and SRGs to function as mentors and to provide academic support is weak. It is important for the ARPs to align their activities to the professional development plan envisioned for teachers and build their capacity in the new and innovative pedagogical ideas to provide effective academic support.

Insufficient linkages between pre, primary, upper primary and secondary schools: DIETs are working actively with primary and upper primary schools. The school support system and networks need to be expanded to enable DIETs to form relevant linkages between the different stages of school education to ensure smooth continuity of learning for its students in the districts.

Weak Mathematics and Science teaching and learning: While professional development in literacy and language learning appeared to have impacted teachers' practice, we noticed a significant gap in teachers' approach to mathematics, EVS and science teaching and learning. Overall, mathematics and science subjects need more focus in all the stages of teacher education, pre-service, in-service, and the mentoring and academic support teachers receive.

Centralised leadership and planning: Very few instances of local planning and innovation are taking place in the DIETs. DIETs are mainly implementing plans that SCERT has mandated. The emphasis is on quantity, completing the activities and reaching out to a large number of schools and teachers, as opposed to the quality of the activities, such as planning and innovating activities in response to local needs.

Capacity shortages for DIET Lecturers: Most DIET lecturers have B.Ed professional qualifications and have not been trained in elementary education. DIET lecturers need capacity building, specifically in core competencies related to elementary education and the latest trends and innovations in teacher education. As lecturers are actively involved in in-service teacher education and mentoring and supporting teachers' practice, the importance of capacity building for lecturers is vital to integrate and align pre-service with in-service teacher education.

Missing collaborations and partnerships: Collaborations and partnerships are essential to enable DIETs to learn from each other by sharing best practices and leveraging expertise. DIETs work in isolation, and there is a minimum collaboration among DIETs or between DIETs and local colleges and universities. Essentially DIETs need to function as learning hubs or resource centres for the district and leverage local and community knowledge, skills, and external expertise.

Minimum use of digital technology: The pandemic has taught us the importance of leveraging digital technologies for administrative tasks, communication, teaching, and learning. DIETs need to be provided with computers, smartboards and other devices, have support for the maintenance of these devices and professional development for using the devices in administrative and academic tasks, duties and responsibilities to use digital technologies effectively.

Shortage of faculty and staff: There is an urgent need to fill the vacancies of leadership, academic, para-academic and support staff in the DIETs. Without adequate human resources, it is very difficult for DIETs to function as CoEs as they will always be operating in a firefighting mode.

Poor infrastructure and resources: All DIETs we visited have poor infrastructure. There is a need to invest in good and modern infrastructure and have realistic plans to maintain and use the infrastructure.

Overall, the gaps are significant and require large infrastructure and capacity-building investments. UP is a large state that has 70 DIETs. Filling the gaps will need to be a gradual process. The state has already set up centres of excellence, which will act as a catalyst for further reforms to make all DIETs active teacher education institutions at the district level for improving the quality of school education.

Chapter 5: Conclusion and Recommendations

This section summarises the study's findings by answering the research questions. In this study, the research team undertook a desk review of the studies of DIETs in India. We reviewed the current state D.El.Ed curriculum in detail. Our team visited 11 DIETs across 11 districts in the state for five days each and collected detailed data through interviews, focus group discussions with DIET faculty, district and block educators, school head teachers and teachers and detailed observations of activities in DIETs and schools. In addition, we received data from over 50 DIETs on pre-service enrolments, in-service and innovative activities, faculty profiles and infrastructure availability in spreadsheets.

In this final chapter, we present the key findings concerning the research questions in the first section and suggest recommendations to conclude our report. Wherever relevant, we have showcased best practices and innovations successfully carried out in other DIETs or contexts across India that would be appropriate for Uttar Pradesh.

5.1 Summary of Findings

The four main questions we set out to answer to provide an understanding of the DIETs and their situation included, 1) analysing the highlights and gaps of the existing D.El.Ed curriculum; 2) studying the efficiency and effectiveness of teacher development (pre-service and in-service), programmes, and other DIET activities; 3) the availability, utilisation and needs of physical resources and staffing (faculty and staff) of DIETs; and 4) a gap analysis to recommend solutions to develop DIETs as CoEs in Teacher Education in the state.

The review noted that while there are some aspects of the D.El.Ed curriculum, such as value orientation, field-based activities and internships to connect theory and practice, an attempt to incorporate inclusive education, ICT and education theory and practice, to be noted as highlights; by and large, the curriculum is outdated. The outdated nature of the curriculum became explicit during the review and analysis vis-a-vis current policy documents, the latest research-based trends in pre-service teacher education, and during the on-field interviews and observations.

The D.El.Ed curriculum needs to be developed as a robust framework stating the overall approach, philosophical assumptions and rationale behind the programme design incorporating the latest research-based ideas in pre-service teacher education and recommendations of the new NEP 2020 (GoI, 2020) policy the NCFTE 2009 (NCTE, 2009). Specifically, the curriculum framework and courses of study are missing (need strengthening):

- a strong thrust towards developing teachers as reflective, humane and autonomous practitioners who can address social justice concerns (GoI, 2020; NCTE, 2009)
- the development of teachers' Pedagogical Content Knowledge(PCK) and the introduction of teachers to research-based PCK in the various subject domains, especially for upper primary teaching (UNESCO, 2021)
- addressing the latest trends and research in theory and practice related to inclusive, ICT and gender education (GoI, 2020)
- opportunities for self and professional practice skills to address their deep-rooted beliefs and attitudes towards learners and learning to be effective professionals (NCTE, 2009, NCERT 2013)
- a robust internship programme to enable linkages between theory and practice (NCTE, 2009)

The process and activities carried out in the DIETs are efficient. The states have adopted and integrated digital technologies for tracking and monitoring activities, especially for supportive supervision and mentoring of schools and teachers. The NIPUN BHARAT programme is also being implemented efficiently with teachers, school heads, education stakeholders and DIET faculty working in coordination to achieve the goals. The NIPUN BHARAT App also seems to be used efficiently. Overall the administration of education in DIETs is working well and would be more efficient with better use of digital technologies, analysis of data collected and applying the analysis towards improving implementation of processes and activities.

However, there are several gaps in the effectiveness of the DIET activities. The gaps are mainly due to insufficient academic expertise and exposure to research-based innovation and new pedagogies. Many activities are carried out mechanically or are routine, such as the internship component of the pre-service curriculum and academic support and mentoring provided to schools and teachers. DIETs work in isolation and also are mainly implementers of centrally planned activities. We could not observe any innovations particularly addressing contextual and

local issues of the districts. The in-service training does not provide teachers with holistic and need-based professional development opportunities, and the synergy between pre-service and in-service activities is minimum.

The provision of good infrastructure, resources for teacher education and staffing are grossly inadequate. Poor infrastructure has been a persistent issue and has not changed significantly over a decade. As mentioned in chapter 4, basic infrastructure such as classrooms, staff rooms, access to clean and functional toilets, drinking water and good ICT infrastructure is poor in all the DIETs we visited. In some DIETs, plans to build new infrastructure were observed, but none were completed during our visit. The DIETs are also poorly resourced, concerning ICT infrastructure and devices, library resources and teaching learning materials such as science and mathematics labs, digital resources and other resources. The maintenance and usage of infrastructure and resources also need to be reimagined; where we did see equipment, we saw very little evidence of maintenance and usage.

The DIETs are poorly staffed, as reflected in chapter 4. While only the junior lecturer post is filled up to 80%, all other positions remain vacant (less than 30% of the positions are filled). The DIET faculty cannot function to their potential due to inadequate human resources available to undertake activities in the DIET. Those faculty who are present are overworked, and therefore, the efficiency and effectiveness of their work are not observed or appreciated. The lack of properly staffed DIETs also leads to faculty always working in a firefighting mode and not having the time to plan, strategise and experiment with new ideas and, therefore, able to innovate or function as autonomous institutes.

In conclusion, the gaps and shortcomings observed from the situational analysis study, as described in the concluding section of chapter 4, include (1) an outdated D.El.Ed curriculum that needs to be updated to reflect the latest policy and research; (2) lack of professional development opportunities for DIET faculty and district and block level officers to build academic and research rigour at the district level; (3) missing a systemic in-service teacher training approach: (4) weak mathematics and science teaching and learning; (5) poor linkages between pre-service, in-service and school support activities; (6) lack of leadership development programme to enable DIETs to function as autonomous institutions at the district level; (7) DIETs work in isolation and are not leveraging collaborations and partnerships; (8) Insufficient linkages between pre, primary, upper primary and secondary schools (9) and finally, inadequate

basic and digital infrastructure, support for its maintenance and staffing the DIETs and filling up the vacant posts.

5.2 Recommendations

Significant gaps are noticed in the effectiveness of the DIETs to function as autonomous institutions at the district level in terms of infrastructure improvements, adequate staffing, capacity building of teacher educators, D.El.Ed curriculum, strengthening in-service teacher education and continuous academic and mentoring support. UP is a large state, and institutional development efforts must be carried out in a phased manner (GoI, 2013). The state has already developed a plan to develop select DIETs as CoEs.

The following recommendations are suggested based on the gaps highlighted in chapter 4. A few best practices and innovations are briefly mentioned, and links to resources are provided wherever possible.

5.2.1 Renewal of the D.E.Ed Curriculum

Recommendations: With the emergence of the new NEP 2020, a collaborative and holistic exercise of curriculum renewal involving all stakeholders is recommended. The state could develop position papers and a detailed curriculum framework document making explicit their philosophy, approach and position on teacher education. The programme should be guided by imagining what good teaching is and how this can be achieved(Darling-Hammond 2006). Any future curriculum renewal process should involve all stakeholders and explicitly state the programme's objectives, goals, principles and positions, drawing on the recommended structure of the NCFTE 2009. The curriculum should draw on the standards of professional practice, such as the PINDICS (NCERT, 2013), to guide the internship process and development of teachers as a professional. The core educational courses must include child development, learning, social and cultural context and curriculum to engage in foundational educational perspectives (NCFTE, 2009). A robust and long-term internship experience for practicum opportunities and a strong relationship between TEI and schools based on a partnership model must be developed. An active pedagogical approach that includes opportunities for student teachers to learn from cases, connect theory with practice, and develop subject-specific pedagogies based on Shulman's (1986) scholarship on teacher professional knowledge should be provided. Courses

for self and professional development of student teachers to engage with their beliefs, assumptions and attitudes towards learners and learning, developing relationships with colleagues and stakeholders within the school and educational community/system are required.

The process of selecting students for admission to D.El.Ed programmes must be re-examined. Currently, only degree marks are considered. Understanding the student's motivation and interest in primary education would be useful during selection. The eligibility criteria (age, academic qualifications) for selecting students into the DElEd programme may also be re-examined. Students need at least a degree to be eligible for the D.El.Ed programme, the state could look into converting the current D.El.Ed programme to a two-year B.El.Ed programme.

Best Practices & Innovations:
- The Karnataka government [renewed its D.El.Ed programme](https://dsert.kar.nic.in/circulars/te/DElEdCurriculum2016EnglishVersion.pdf)[8] in 2016 through a consultative process including many stakeholders and experts, both internal and external, to build a state-level curriculum framework for elementary teacher education. UP could adopt a similar process of curriculum renewal.
- The B.El.Ed programme of the University of Delhi is a four-year integrated and innovative teacher education programme that includes extensive internship and several courses in theatre, art and self-development. The design of this programme may be adapted to develop a two-year B.El.Ed programme in UP.

Best Practices & Innovations:

5.2.2 Capacity building of Teacher Educators

Recommendations: There is a large gap in opportunities offered to DIET faculty and other teacher educators (ARPs, SRGs) in the elementary education system. SCERT must facilitate long-term (master and upward academic programmes) and short-term (modular courses) capacity-building opportunities for teacher educators to build their academic, professional and practical skills in elementary education. DIET faculty need to have opportunities to participate in state, national and international seminars and conferences to develop their capacity in

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[8] https://dsert.kar.nic.in/circulars/te/DElEdCurriculum2016EnglishVersion.pdf

research. SCERT must coordinate with universities and external experts to provide professional development opportunities for teacher educators.

Best Practices & Innovations:

- Several universities offer MA Education[9] programmes. One such programme for elementary school teacher educators is offered in the [blended mode](). IGNOU also offers the MA Education programme in the distance mode[10]. Teacher educators may earn a master's degree in elementary education while continuing their work. Opportunities for DIET faculty could be provided to apply for this course.

- Many platforms such as SWAYAM, TISSx, Coursera, and Edx offer short-term courses of different duration online. CETE, TISS offers contextual short-term modular courses for teacher educators through its Contemporary Perspectives in Education and Research programme[11] in blended and online modes for DIET faculty to update their knowledge and skills.

- The School Education Department, Govt of Maharashtra, has partnered with UNICEF to launch and implement the Kendra Pramukh Academic Leadership Programme (KPALP) to enhance teaching skills and improve student learning outcomes. Such a programme could be adopted to develop the capacity of ARPs and SRGs.

5.2.3 Developing DIETs as active resource centres

Recommendations: DIETs need to become active resource centres for elementary education, provide platforms for local material development and innovation, and develop communities of practice. Science & Mathematics labs need to be upgraded, and specific plans for activating these labs in teachers' preparation and professional development must be made. Digital technologies such as smart classrooms, ICT labs and access to other devices, professional development for using these devices for teaching and learning and plans on maintenance and upgrade need to be made. Libraries need to be made more accessible and upgraded with the latest books, and periodical subscriptions need to be activated. The library must also provide online access to periodicals and journal articles to encourage research among faculty and

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[9] https://admissions.tiss.edu/view/10/admissions/ma-admissions/ma-in-education ;

[10] http://www.ignou.ac.in/ignou/aboutignou/school/soe/programmes/detail/72/2

[11] https://admissions.tiss.edu/view/10/admissions/stp-admissions/p-g-certificate-course-in-contemporary-education-p/

students. Activities for both pre-service and in-service students and teachers must be initiated to use the labs and resources regularly—community mobilisation activities to include community members and parents in the education process.

Best Practices & Innovations:
- The District Education Resource Centre at DIET Chamrajanagar, Karnataka, was established in 2007 through the active collaboration of DIET and the National Institute of Advanced Studies, Bangalore. Learnings from this resource centre are available as a report.
- A compendium of teacher education centres[12] and their function is available as a reference to understanding the different types and contexts of teacher resource centres in India.
- The NGO Eklavya[13] has worked with states on science, social science education and primary education in the in-service space and has developed several high-quality resources and books in Hindi.

5.2.4 Develop Databases, Repositories and Portals

Recommendations: The need for robust databases and repositories to manage in-service teacher professional development, sharing best practices and innovations and developing DIETs as district-level resources, research and teacher education hubs is essential. DIETs need to build Training Management Systems (TMS) to create annual plans for in-service teacher development, maintain a database of teachers' professional needs and status and enable teachers to select courses and create their plans and path for continuous professional development. DIETs must maintain digital repositories of Open Educational Resources and documentation of best practices and innovations to share their work at the state and national level platforms, participate in conferences, and write for academic journals. Teacher educators must manage, curate, review resources and keep the repositories current. Such databases and repositories help strengthen linkages between teacher education institutes within the state and enable more robust collaboration at scale. Such portals also help develop networks and communities of practice among teacher educators, experts and universities.

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[12] https://clix.tiss.edu/wp-content/uploads/2018/03/TEC-Sourcebook.pdf
[13] https://www.eklavya.in/

The [DIKSHA](https://diksha.gov.in/help/getting-started/login/)[14] portal of the Government of India is an excellent platform for teacher educators to use and develop contextual material. Thoughtfully designed pedagogic Open Educational Resources (OERs) for teachers and students developed by the [Connected Learning Initiative (CLIx)](https://clixoer.tiss.edu/home/e-library)[15] may be used as exemplars for creating local resources.

Best Practices & Innovations:
- The [NISHTHA](https://itpd.ncert.gov.in//)[16] Portal for teacher professional development is an authentic repository of teacher professional development courses developed by NCERT.
- TMSs: DIET Serchhip in Mizoram maintains a functional TMS. A lecturer in DIET maintains this facility, which helps map profiles of the entire teacher cadre in the district, the professional development training they have received and the need for future professional development. Mapping is also done by the school and by subject (TISS, 2017). Many more best practices listed in the [document](https://tiss.edu/uploads/files/CSSTE_Report_Web_22.2.18.pdf)[17] could be referenced.

5.2.5 Institutional linkages, Collaborations and Partnerships

Recommendations: Linkages between DIETs, BRCs/CRCs, and schools need to be strengthened through well-coordinated plans and discussions of mentoring, school improvement processes, pedagogical and academic issues, and equity and inclusion concerns. There is a need to establish opportunities for collaboration across DIETs to share best practices and innovations. Collaborations between NCERT and other universities and DIETs need to be established to follow the latest trends in teacher education and support robust local research in the DIETs. The NGO partnerships need to be streamlined so that teachers have access and choice to good in-service professional development.

Best Practices & Innovations:
- University School Resource Network (USRN) project of the Regional Resource Centre for Elementary Education (RRCE), Central Institute of Education, University of Delhi pioneered a new teacher professional development model by building networks of

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[14] https://diksha.gov.in/help/getting-started/login/
[15] https://clixoer.tiss.edu/home/e-library
[16] https://itpd.ncert.gov.in//
[17] https://tiss.edu/uploads/files/CSSTE_Report_Web_22.2.18.pdf

teachers, educators and other education sector persons. A [report](#)[18] on its impact is available for review.

- A report commissioned by MHRD (GoI, 2011), [Approaches to School Support and Improvement](#)[19], provides practical guidelines to conceptualise school support and supervision.

5.2.6 Develop decentralised autonomous institutions

Recommendations: Basic amenities and infrastructure needs to be updated. Classrooms need more ventilation, blackboard visibility, and good lighting Schools have benches for students to handwash, toilets, better sanitation, water supply, separate toilets for school staff, and disabled-friendly toilets are required. Boundary walls for safety purposes are needed. UPS/generator for continuous electricity supply is required.

Suitably designed computer laboratories need to be created. Academic, para-academic and support staff vacancies need to be filled. There is a need for more local or district-level involvement in the planning and preparation of annual budgets and fund allocation. DIET principals need autonomy on spending at least a portion of the budget to encourage more innovation. The capacity building for developing principals and vice-principals as academic leaders must be undertaken.

The roles of principal and vice-principals and all levels of faculty need to be reimagined as academic roles than purely administrative, and a clear pathway from junior lecturer to DIET principal based on performance needs to be planned. Per the UGC norms, their designations must be aligned with the nomenclatures used in other academic spaces, such as assistant professor, associate professor and professor. The academic support roles and responsibilities must be strategised, and linkages between DIETs, BRCs/CRCs and schools must be strengthened. Long-term strategies such as developing academic career pathways for teachers, creating locally relevant professional standards for elementary school teachers and career pathways for teachers must be strategised and implemented.

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[18] https://itforchange.net/impact-assessment-study-on-regional-resource-centre-for-elementary-education-rrce

[19] https://www.academia.edu/7086798/Approaches_to_School_Support_and_Improvement

Best Practices & Innovations:

- In the document <u>DIETs Potential and Posibilities</u>[20] , there are several best practices listed. Particularly Box 2.2 on Page 6, Box 3.1 on Page 10 and Box 6.5 on Page 21 are worth noting.
- The Kerala state DIETs are one of the most active functioning DIETs in the country. A visit to Kerala to understand the state's DIET model would be helpful.

5.3 Proposal to Implement Recommendations in Phases

In this section, we provide recommendations in four areas, namely, infrastructure & staffing, pre-service education, in-service education and school support, broken down into 3 phases, short, medium and long-term recommendations as summarised in Table 5.1.

TABLE 5.1: Recommendations in Phases			
Specific areas	**Short Term**	**Medium Term**	**Long Term**
Basic Infrastructure **Staffing**	Invest in the DIETs selected as CoEs	Expand to other DIETS in a phased manner based on the learnings from the operations of the CoE DIETs	All DIETs are equipped with basic infrastructure and adequate human resources
Teaching & Learning Resources	Creating a database of available resources and plans for maintenance and usage	Creating TLMs using local resources and expertise	Managing repository of resources across DIETs through a portal
	Budgeting and procuring new resources, books and TLMs	Developing/curating OERs and digital resources and tools	
Digital Technology	Computer labs in all DIETs with at least 50 computers with Internet access	Laptops for all DIET faculty and leaders	Create an ecosystem for the maintenance and use of digital technologies in DIETs for academic and administrative work

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[20] https://www.researchgate.net/publication/349211334_DIETs_Potential_and_Possibilities

	Plan maintenance for the available and new digital infrastructure	Smart boards in DIET classrooms	
Pre-service Education	Renewal of the D.El.Ed curriculum to reflect the latest research and policy trends in teacher education.	Develop DIETs as research hubs for teacher education and school improvement	Make all DIET faculty and leadership roles academic and provide academic career pathways
	Build the capacity of DIET faculty as teacher educators	Build DIET faculty research competencies	Align faculty roles with the omenclatures used in other academic spaces universities as an assistant professor, associate professor, and professor per the UGC norms.
In-service Education	Create a professional development plan (PDP) for the academic year	Training Management System (TMS) and active database of teachers, training needs and activities	Develop professional teacher standards for self-assessment monitoring and tracking teacher's professional activities
	Initiate Collaboration with Universities and NGOs for fulfilling the PDP	Development of blended and online courses for teacher's continuous professional development	Manage the TMS to facilitate professional development, supervision and career movement of teachers
	Capacity building o DTO, BEOs and BSA	Develop and manage subject-based teachers' communities of practice, both online and physical.	
Supportive Supervision & Mentoring	Capacity building of ARPs & SRGs on mentoring and pedagogy	Develop a holistic plan for school improvement and alignment of all education stakeholders and build structural linkages between DIETs, BRCs/CRCs and schools.	Develop career pathways for teachers, both vertical and horizontal (cyclical)
	Inclusion of preschool support	Integration of pre- and primary schools Inclusion of secondary school support	Integration of school support from preschool to secondary schools

5.4 Reflections

This study enabled the understanding of ground realities and the day-to-day functioning of DIETs in Uttar Pradesh through detailed primary data collection across 11 districts. The desk review examining DIETs in prior reports indicated poor resourcing of faculty, staff and infrastructure, outdated curricula, traditional pedagogical approaches for professional development, lack of exposure and professional development for teacher educators, limited use of digital technologies, and poor inter-institutional collaboration and networking and centralised planning. The data analysis revealed that the situation of DIETs as district-level institutions had not transformed significantly in the last decade. Significant shifts have occurred in the administration and monitoring of district-level institute activities leveraging digital technologies and mobile Apps. However, academic effectiveness remains to be addressed.

All policy documents from the NPE 1986 to the current NEP 2020 and research on teacher education indicate the importance of DIETs as decentralised and local institutions and are best positioned to provide teacher education and professional development for elementary schools in the Indian context. Teachers and the education of teachers are essential for improving the quality of education and students' learning outcomes. However, implementing these policies and research recommendations has not received enough attention, especially in infrastructure and resource provisioning and staffing of DIETs.

The need to focus on implementing policies and recommendations provided by several reports around the functioning of DIETs is urgent. UP has a large number of DIETs with active and ongoing pre-service, in-service and school supervision activities taking place. The scale of reform is large; hence, this study has recommended a phased approach towards developing DIETs so that the SCERT can prioritise actions and plans for implementing the recommendations. The state has already moved in a direction that enables a phased implementation by identifying select DIETs as CoEs. This study will provide a framework for developing all DIETs as CoEs and autonomous quality teacher education institutions at the district level in UP and potentially enable other states to follow and learn from Uttar Pradesh's experiences.

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Annexures

DIET Data Factsheet Template & Data

Attatched - Spreadsheet/s

Interview Schedule - DIET Principals and Faculty

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Study of UNICEF, SCERT UP – UTTAR PRADESH D.I.E.T. SITUATIONAL ANALYSIS

INTERVIEW SCHEDULE – D.I.E.T PRINCIPAL/ FACULTY

Centre of Excellence in Teacher Education, Tata Institute of Social Sciences, Mumbai

OPENING

[Introduction] My name is _____. I am a research assistant/ field researcher of CETE at the Tata Institute of Social Sciences (TISS), Mumbai. On behalf of SCERT, UP and UNICEF UP we at CETE are conducting a study of the situational analysis of DIETs in UP.

[Purpose] This study aims to understand how DIETs can function efficiently and meet the goals and objectives of quality improvement of education in UP and provide recommendations for the state's consideration.

[Motivation] We hope that the study will provide an understanding of systemic and design considerations related to strengthening DIETs in UP and in other states in India.

[Timeline] The interview should take about one hour. I hope that is okay with you, Sir/Madam.

[Permission to Record] Please keep the information about the study *(Hand over the participant information sheet)*. I request you sign the consent form (*get the consent form signed*) and allow me to record this interview.

START RECORDING

(Designation & Name), Let me begin by asking you some questions about your role

BODY

Role of Interviewee in DIET / Education System

1. What is your academic role in the institution?
2. Are you also involved in organising or managing some administrative activities, such as organising internal or external events etc.?

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3. How do you manage your time between academic and administrative duties?
    a. What are the challenges?
    b. What kind of support do you have?

Institutional Identity and Focus: [*Understand the DIETs identity through the focus areas of work, goals, objectives and its ability and capacity to function as an independent and autonomous institute leveraging state and national schemes*]

4. In your opinion, what are the main goals and objectives of a DIET?

    a. related to pre-service education

    b. related to in-service education

    c. related to the new National Education Policy

5. How do these goals align with the State curriculum frameworks for

    a. Students and student learning

    b. Teachers and teacher education

6. Do your goals and objectives match the work you are doing? What are the gaps, if any?

7. What are the ways you think DIETs can facilitate achieving these goals?

8. Do you feel that DIETs can function independently?

    a. What is the type of support you would like to receive from the SCERT?

    b. What are your ideas for the *long-term goals and sustainability of DIETs?* [NEP suggests moving all TEIs into HEIs]

Systemic location and relation to other institutions: [*Understand the DIETs positioning vis-à-vis the state education system, including SCERT and BRCs-CRCs.*]

SCERT / **Department of Education (Samagra Shiksha Mission Office)**

9. What is the nature of interaction with SCERT?

    a. With whom do you interact in SCERT? [Director, Programme Coordinator etc] What are the reasons for this interaction? [Administrative, academic]

10. What type of curricular and pedagogical support do you receive for transacting the prescribed curriculum from SCERT?

11. What are some areas which you think need support from SCERT for

    a. pre-service education

    b. in-service education

12. What is the nature of the relationship with SCERT?

    a. Is it working well? Would you like to change anything regarding the relationship?

DISTRICT LEVEL INSTITUTES

13. What is the nature of interaction with district-level institutes?

    a. With whom do you interact in SCERT? [District Education Officers etc] What are the reasons for this interaction? [Administrative, Academic]

14. What type of administrative, curricular and pedagogical support do you receive for transacting the prescribed curriculum from district-level institutions and officers?

15. What are some areas which you think need support from district-level officers for

    a. pre-service education

    b. in-service education

16. What is the nature of the relationship with District Education Officers?

    a. Is it working well? Would you like to change anything regarding the relationship?

BRC/CRC

17.   What is the nature of interaction with BRC/CRC?

    a. With whom do you interact in BRC/CRC? [Block Resource Person (BRP) , CRP, etc.] What are the reasons for this interaction? [administrative, academic]

18. What type of curricular, pedagogical and monitoring support do you provide for transacting in-service programmes or school improvement programmes?

19. How do you connect with the schools and community through the BRC/CRC?

20. What are some areas which you think need support from BRC/CRC?

21. What is the nature of the relationship with BRP/CRP?

    a. Is it working well? Would you like to change anything regarding the relationship?

SCHOOLS

22. What is the nature of interaction with schools?

    a. With whom do you interact in schools? [Head Teacher, Coordinators, Teachers] What are the reasons for this interaction? [administrative, academic]

23. What type of curricular, pedagogical, mentoring and monitoring support do you provide to the schools?

24. What are some areas which you think need cooperation from schools?

25. What is the nature of the relationship between you and the school head teachers and teachers? Is it working well? Would you like to change anything regarding the relationship?

    a. Pre-service Internship

    b. School visits and

    c. other school-level programmes

COVID-19 PANDEMIC IMPACT

26. How did the interaction and relationships with the institutes change due to the COVID-19 lockdown/s

    a. SCERT

    b. District Institutes

    c. BRC/CRC

    d. Schools

Financial Aspects: [*Understanding the financial aspects such as provisioning of infrastructure, resources, staff and faculty positions and other facilities.*]

27. What is the process of provisioning of infrastructure, and resources to DIETs?

    a. How are funds allocated to your DIET?

    b. In what ways do you participate in the planning of resource and funding needs?

    c. What are the resource and infrastructure needs of DIETs?

28. How do you communicate your needs to SCERT? What is the process and who participates?

29. What is the kind of support you have in the DIETs for daily activities and maintenance

    a. Housekeeping

    b. Library/Lab maintenance

    c. Technology infrastructure

30. What were the issues related to financial management during the **COVID-19 pandemic** period? How did you resolve these issues?

Development of Faculty and Staff: *[Understand the current roles and responsibilities, staffing needs of DIETs, the recruitment processes, leadership roles, vacancies, capacity building of DIET heads, faculty and staff and nurturing a professional culture/community.]*

31. What are potential pathways available for your career growth amongst the faculty?
    a. Is it based on seniority? Or are there other criteria?
    b. Can you be transferred outside the DIETs and /or outside the district? What is the process followed for transfers?

32. What do you feel are your most important professional development needs?
    a. Have you participated in any professional development programme?
    b. How do you wish to participate (Workshops, online courses, seminars etc)?

33. . What are the opportunities available to collaborate with your peers and other faculty? [teacher educator/faculty circles, WhatsApp groups and other online/local professional communities, seminars, workshops etc..]
    a. within your DIET
    b. with other DIETs in the state
    c. with other teacher educations in other states
    d. Universities and Higher Education Institutes

DIET functions and Activities: [*Understand the different functions and activities implemented by the DIETs by way of inputs, processes, outputs, and outcomes, including teacher development, both pre-service and in-service, DIETs as resource and teaching-learning centres and institutes for local curriculum and material development.***]**

Pre-Service

34. What are the different innovative activities undertaken during pedagogical transactions? Can you share some examples of such activities for your subject? [constructivist approach, presentations, showing video/audio clips before starting the class]

35. What are the different ways in which you develop a student-teachers professional identity and skills [communicative skills, life skills, time management, digital skills, co-curricular activities]

36. What are the different ways in which student-teachers are equipped to address diversity in the classroom?

    a. Are there any sorts of instructional strategies for inclusive education? [Use of ICT, special needs children, socially marginalised children, girls etc.]

37. What type of resources do you use for transacting the D.El.Ed curriculum? [Prescribed textbooks, local resources, internet resources]

38. What is your role in the pre-service internships? What are the strengths of your internship programme and what are some gaps you feel still need to be addressed?

39. How do you support student-teachers in their careers? [TET exams , Placements , connecting with Alumni]

In-service

40. How do you design and implement in-service training/professional development?

    a. Who makes the designs/plans for training?

    b. What is your role in in-service training delivery?

    c. What is the role of BRC/CRC or other NGOs /Institutes

41. How do you assess the success of the in-service training/professional development?

42. How do you monitor teachers' implementation (practise in classrooms) of learnings by teachers from these training programmes?

Other Activities

42. How do you design and implement other activities, events & programmes in the DIET?

    a) Who makes the designs/plans for training?

    b) What is your role in these programmes?

    c) What is the role of BRC/CRC or other NGOs /Institutes?

43. How do you assess the success of the programmes?

44. How do you monitor the implementation (practise) of learnings by teachers from these programmes?

COVID-19 IMPACT

45. What has been the impact of the lockdown due to COVID-19 and what adjustments or new ways of working have you adopted?

    a. pre-service

    b. in-service

    c. other activities

Collaborations and Partnerships: [*To understand DIETs working with partners such as universities, DIETs within and across states, NGOs, and multilateral funding agencies towards gaining access to expertise, capacity building, networking and institution building.*]

46. What are the different forms of collaboration you have with the following institutes? In what ways do you feel the DIET benefits from these collaborations?

   a. Schools

   b. Higher Education Institutes (Colleges, IASE, CTEs)

   c. NGOs and CSRs,

   d. International organisations (UNICEF, World bank etc.)

   e. Local community

CLOSING

[**Summarise**] Sharing your experience will be very valuable for my research. Your role as _____, involved in _____, will enable us to get a more insightful perspective into the functioning, needs and issues faced in UP DIETs. I am thankful for the time you took for this interview.

1. Is there anything else you think would be helpful for me to know that would be useful in our research?

2. Do any other persons come to your mind that we should interview?

3. Would you recommend we read any specific reports related to this programme?

END RECORDING

[**Action to be taken**] I should have all the information I need. Would it be all right to call you on your mobile if I have any more questions or clarifications? Thank you very much.

Interview Schedule - DIET Stakeholders

Study of UNICEF, SCERT UP – UTTAR PRADESH D.I.E.T. SITUATIONAL ANALYSIS

INTERVIEW SCHEDULE – D.I.E.T STAKEHOLDERS

Centre of Excellence in Teacher Education, Tata Institute of Social Sciences, Mumbai

OPENING

[Introduction] My name is _____. I am a research assistant/ field researcher of CETE at the Tata Institute of Social Sciences (TISS), Mumbai. On behalf of SCERT, UP, and UNICEF UP, we at CETE are conducting a study of the situational analysis of DIETs in UP.

[Purpose] This study aims to understand how DIETs can function efficiently and meet the goals and objectives of quality improvement of education in UP and provide recommendations for the state's consideration.

[Motivation] We hope that the study will provide an understanding of systemic and design considerations related to strengthening DIETs in UP and in other states in India.

[Timeline] The interview should take about one hour. I hope that is okay with you, Sir/Madam.

[Permission to Record] Please keep the information about the study *(Hand over the participant information sheet)*. I request you sign the consent form *(get the consent form signed)* and allow me to record this interview.

START RECORDING

(Designation & Name), Let me begin by asking you some questions about your role

(Stakeholder), District Education officer | Block Level Officer |Cluster Level Officer | Head Teacher | Teacher |Other (please specify)

BODY

Interaction with DIETs: *[Understanding stakeholders' experience and perceptions of DIETs as educational institutes and the nature of interactions between various stakeholders and DIETs and DIET faculty.]*

SCHOOLS

1. What is the nature of interaction with DIETs?
    a. With whom do you interact in DIETs? [Principal, Faculty] What are the reasons for this interaction? [administrative, academic]

2. What type of curricular, pedagogical, mentoring and monitoring support do you receive from the DIETs?

3. What are some areas which you think need support from DIETs and DIET faculty?

   a. What is the nature of the relationship between you and the DIET faculty/principal? Is it working well? Would you like to change anything regarding the relationship? [pre-service Internship, School visits, Workshops, other programmes]

COVID-19 PANDEMIC IMPACT

4. How did the interaction and relationships with the DIET change due to the COVID-19 lockdown/s? How did you resolve issues that came up because of the pandemic?

PERCEPTION OF DIET

CLOSING

[**Summarise**] Sharing your experience will be very valuable for my research. Your role as _____, involved in _____ will enable us to get a more insightful perspective into the functioning, needs and issues faced in UP DIETs. I am thankful for the time you took for this interview.

1. Is there anything else you think would be helpful for me to know that would be useful in our research?

2. Do you have any suggestions for other people whom we should interview?

3. Would you suggest any specific reports related to this programme that we should read?

END RECORDING

[**Action to be taken**] I should have all the information I need. Would it be all right to call you on your mobile if I have any more questions or clarifications? Thank you very much.