Reimagining Initial Teacher Education for the 21st Century in Ethiopia

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Abstract

The rapidly evolving 21st-century educational landscape, marked by technological advancements, globalization, and complex societal challenges, necessitates a fundamental reimagining of Initial Teacher Education (ITE). This study aims to identify the key characteristics of effective Initial Teacher Education (ITE) programs, explore the essential competencies and dispositions future teachers require and how programs can cultivate these, and investigate innovative pedagogical approaches and transformative practices to enhance the preparation of educators for the 21st-century classroom. Employing a qualitative instrumental case study design, data were gathered through key informant interviews and focus group discussions with 45 diverse educational stakeholders in Ethiopia. Thematic analysis revealed that effective ITE demands rigorous selection criteria, a relevant curriculum tightly integrating theory with extensive, practical, research-informed experiences, strong stakeholder collaboration, and supportive learning environments including mentorship. Core competencies identified include deep subject matter and pedagogical knowledge, skills in managing diversity and fostering inclusivity, strong communication, adaptability, critical thinking, digital literacy, and reflective practice. Furthermore, integrating innovative, student-centered pedagogies like experiential, inquiry-based, and technology-enhanced learning is crucial. The findings underscore the need for holistic ITE reform for the complexities and demands of 21st-century classrooms.

Key Words: Initial Teacher Education, 21st century, core competency, practicum, Ethiopia.

1. Introduction

The continuous evolution of the educational landscape, driven by socio-economic fluxes, technological innovations, and globalization, necessitates ongoing reforms in teacher education to equip educators for the 21st century (Cheah, 2024; Gopinathan & Loh, 2024; Boaduo, 2015; Pasias & Roussakis, 2013). This includes adapting to the demands of knowledge-based economies (Gopinathan & Loh, 2024), the shifting competencies required by globalization and technological progress (Gopinathan & Loh, 2024; Tan & Chua, 2024), the transformation of learning spaces through ICT and the internet (Cheah, 2024), and the integration of AI and hybrid learning models, accelerated by the COVID-19 pandemic (Cheah, 2024; Tan & Chua, 2024).

However, the education sector faces increasing complexities, including geopolitical uncertainties, evolving skill demands, and exacerbating social divides (Gopinathan & Loh, 2024), with persistent racial and class disparities highlighting the need for greater educator sensitivity (Gopinathan & Loh, 2024), and the pandemic amplifying challenges like learning loss and mental health issues (Gopinathan & Loh, 2024; Tan & Chua, 2024). Consequently, the importance of teacher quality is paramount, with international assessments like PISA placing greater scrutiny on education systems (Tan & Chua, 2024), underscoring the urgent need for innovative reforms in teacher education to prepare educators for a rapidly evolving world.

1.1. The Importance of Teacher Quality and Effective Initial Preparation

The cornerstone of successful education systems lies in the quality of its teachers, a factor consistently highlighted as the most critical in-school influence on student achievement (Abbott, Rathbone, & Whitehead, 2019; Hattie, 2023; Darling-Hammond, 2006;2024, Zeichner, 2010). High-performing systems, such as those in Finland, Singapore, and South Korea, demonstrate this by valuing teaching as a respected profession, which positively impacts student learning (Sahlberg, 2021). These systems also emphasize strong initial preparation and induction programs, characterized by practical training, research-based strategies, and mentored field experiences (Abbott, Rathbone, & Whitehead, 2019). However, Gopinathan and Loh (2024) and Cheah (2024) have raised concerns about the adequacy of current pre-service teacher education programs in keeping pace with the rapid socio-political, technological, and societal changes, advocating for more agile and responsive approaches to address the complexities of 21st-century classrooms.

Current teacher education programs face critical shortcomings that impede their effectiveness in preparing educators for today's dynamic educational environments. These programs struggle to adapt to the rapid socio-political, technological, and societal shifts, necessitating more agile and responsive approaches (Cheah, 2024; Gopinathan & Loh, 2024; Ndebele et al., 2024). A persistent theory-practice gap, where pre-service teachers struggle to apply theoretical knowledge in real-world settings (Du Plessis & Dreyer, 2024), further exacerbates this issue. Moreover, programs often lack the integration of essential 21st-century skills, such as computational, design, and systems thinking (Cerovac & Keane, 2023; Tan & Chua, 2024), and require reforms to alleviate academic burdens while enhancing curriculum relevance (Takker &

Ramchand, 2022). Additional gaps include inadequate focus on equity and diversity (Gopinathan & Loh, 2024), limited emphasis on ethical, political, and epistemic agency (Echeverria, 2025), reduced intellectual grounding due to increased regulation and marketization (Glazzard and Tate, 2024), and insufficient attention to teacher wellbeing (Gopinathan & Loh, 2024; Ng, 2024; Tan & Chua, 2024). The necessity for a transformative and sustainable pedagogy (Ndebele et al., 2024) underscores the urgency to address these shortcomings to effectively prepare educators for a rapidly evolving world.

Addressing these shortcomings necessitates comprehensive reforms in teacher education. Continuous curriculum enhancement is crucial to maintain relevance and incorporate new pedagogical and assessment practices that develop teachers as facilitators of holistic learning (Cheah, 2024; Gopinathan & Loh, 2024). Teacher preparation programs must explicitly equip teachers with 21st-century skills, including technological proficiency, communication, and collaboration in online environments (Tan & Chua, 2024), while also emphasizing the development of teachers' values, resilience, and socio-emotional well-being (Gopinathan & Loh, 2024; Ng, 2024; Tan & Chua, 2024). Strengthening school-university partnerships through genuine collaborations and co-design principles is also essential (Fitzgerald et al., 2025). Furthermore, teacher education should prioritize the link between theory and practice, provide ample opportunities for practical application, and view initial preparation as part of a lifelong learning continuum (Tan & Chua, 2024; Cheah, 2024). Reforms must also address social disparities, equip teachers with the skills to support diverse students, and promote equality (Gopinathan & Loh, 2024; Tan & Chua, 2024). Embracing innovation, including the ethical use of technologies like AI (Ng, 2024), and adapting to post-pandemic realities, such as hybrid learning models (Gopinathan & Loh, 2024; Tan & Chua, 2024), are also critical.

1.2. Essential Competencies and Skills for Future Teachers

Effective future teachers require a multifaceted array of competencies built upon a robust knowledge base, encompassing academic proficiency and profound theoretical understanding in their subject matter (Elstad, 2023a; Mikkilä-Erdmann, Nummi, & Erdmann, 2024), pedagogical knowledge of teaching and learning principles (Elstad, 2023a), subject-based didactic knowledge for effective subject-specific teaching (Elstad, 2023a; Mikkilä-Erdmann et al., 2024; Hansén et al., 2023), and pedagogical content knowledge (PCK) integrating subject expertise with tailored

teaching strategies (van Geel et al., 2023). This foundation is complemented by understanding student learning, performance, pedagogical needs including prior knowledge and assessmentdriven instruction (van Geel et al., 2023), contextual knowledge of the school system and external influences (Metsäpelto et al., 2024), and knowledge of diverse assessment techniques and educational research utilization (Elstad, 2023a; Mikkilä-Erdmann et al., 2024; Hansén et al., 2023). Beyond knowledge, essential teaching skills include planning engaging experiences (Irnidayanti & Fadhilah, 2023), implementing clear instruction (Adiyasuren & Galindev, 2023), facilitating learning through diverse methods like student-centered dialogue (Åstrand, 2023), managing the classroom effectively (Adiyasuren & Galindev, 2023), monitoring and evaluating student progress (Adiyasuren & Galindev, 2023), differentiating instruction (Adiyasuren & Galindev, 2023; van Geel et al., 2023), actively engaging students (Adiyasuren & Galindev, 2023), teaching learning strategies, providing constructive feedback (Adiyasuren & Galindev, 2023), integrating technology effectively (Darling-Hammond & Lieberman, 2013; Skagen & Elstad, 2023), critically reflecting on practice (Hansén et al., 2023; Wang, Ko, & Wang, 2023), collaborating with colleagues and parents (Elstad, 2023a; Wang et al., 2023; Mikkilä-Erdmann et al., 2024), communicating effectively (Mikkilä-Erdmann et al., 2024), solving problems (Wang et al., 2023), possessing adaptive expertise (Darling-Hammond & Lieberman, 2013; Darling-Hammond & Oakes, 2021), and adapting to changing conditions (Åstrand, 2023; Wang et al., 2023). Ethical conduct, particularly concerning human and children's rights (Åstrand, 2023; Mikkilä-Erdmann et al., 2024; Madsen & Jensen, 2023), high expectations for students (Irnidayanti & Fadhilah, 2023), commitment to student well-being (Irnidayanti & Fadhilah, 2023; Åstrand, 2023), intrinsic motivation, self-efficacy, a clear professional vision, a growth mindset (Feng, Helms-Lorenz, & Maulana, 2023), professional agency (Heikkilä & Hermansen, 2024), reflective practice (Madsen & Jensen, 2023), and a commitment to lifelong learning (Feng et al., 2023) are also vital attributes.

Effective Initial Teacher Education (ITE) programs designed to cultivate these competencies are fundamentally characterized by tight coherence and integration between academic coursework and extensive, intensely supervised clinical experiences in diverse school settings (Darling-Hammond, 2006; Darling-Hammond & Lieberman, 2013). This structure ensures theory and practice mutually inform each other, with candidates gradually increasing responsibilities under

expert guidance (Darling-Hammond & Oakes, 2021). Programs must provide a strong theoretical foundation grounded in research on learning, development, social/cultural contexts, curriculum, assessment, and subject matter pedagogy (Darling-Hammond, 2006; Darling-Hammond & Lieberman, 2013; Darling-Hammond & Oakes, 2021), explicitly preparing teachers to foster deeper learning (Darling-Hammond & Oakes, 2021), integrate technology effectively (Darling-Hammond & Lieberman, 2013), and maintain a central focus on equity, social justice, and culturally/linguistically responsive practices (Darling-Hammond & Oakes, 2021). Furthermore, successful programs cultivate inquiry and reflection as ongoing professional habits (Darling-Hammond & Lieberman, 2013; Darling-Hammond & Oakes, 2021) and rely on strong partnerships with schools committed to deeper learning and equity for high-quality clinical placements and learning communities (Darling-Hammond, 2006; Darling-Hammond & Lieberman, 2013; Darling-Hammond & Oakes, 2021). A clear vision of good teaching and defined standards guide the entire program (Darling-Hammond, 2006; Darling-Hammond & Oakes, 2021; Wassermann, 2022), with learning experiences being personalized, contextualized, and promoting knowledge application through authentic tasks and assessments within collaborative communities (Darling-Hammond & Oakes, 2021). Supporting this are missionaligned recruitment, modeling effective pedagogies, growth-oriented feedback, careful mentor selection and support, attention to ethical dimensions, development of adaptive expertise, explicit theory-practice connections, and preparation for teachers to use and conduct research for improvement (Darling-Hammond & Lieberman, 2013; Darling-Hammond & Oakes, 2021).

1.3. Core Practices of Teacher Education: Balancing Theory and Practice

The core practices of teacher education, essential for preparing effective educators, have evolved significantly to meet the changing demands of education. A fundamental aspect of teacher education lies in balancing theoretical understanding with practical application (Fitzgerald, Kardaris, Nash, Byth, & White, 2025; Bernay, Stringer, Milne, & Jhagroo, 2020). Teacher education programs strive to bridge the gap between academic theories and the realities encountered in actual classroom settings. This balance is achieved through university-based courses that provide foundational knowledge, complemented by school-based practicum experiences where student teachers apply these theories in real-world contexts (Gopinathan, & Loh, 2024; Ng, 2024; Bernay, Stringer, Milne, & Jhagroo, 2020). School-university partnerships

play a crucial role in this endeavor, fostering a synergistic relationship that effectively connects theory and practice (Fitzgerald, Kardaris, Nash, Byth, & White, 2025; Bernay, Stringer, Milne, & Jhagroo, 2020).

Core competencies and dispositions vital for 21st-century teachers encompass a broad range of skills and orientations. Future educators must cultivate deeper learning skills in students, including critical thinking, problem-solving, knowledge application in novel situations, and lifelong learning capacity (Darling-Hammond, 2024; Darling-Hammond & Oakes, 2021). A fundamental requirement is a strong equity and social justice orientation, enabling teachers to meet diverse student needs, understand social contexts, challenge systemic inequalities (Cochran-Smith, Ludlow, Ell, O'leary, & Enterline, 2012; Darling-Hammond, 2024; Darling-Hammond & Oakes, 2021), and employ culturally and linguistically responsive teaching (Cochran-Smith et al., 2012; Darling-Hammond, 2024; Darling-Hammond & Oakes, 2021). Additionally, teachers need technological fluency for meaningful integration (Darling-Hammond, 2024; Darling-Hammond & Oakes, 2021; Lieberman, Campbell, & Yashkina, 2016), the ability for inquiry and reflection to improve practice (Bartell, 2005; Darling-Hammond, 2006; Darling-Hammond & Oakes, 2021), and strong skills in collaboration and communication with all stakeholders (Darling-Hammond, 2024; Darling-Hammond & Oakes, 2021; Lieberman, Campbell, & Yashkina, 2016). Essential foundations also include strong content and pedagogical content knowledge (Bartell, 2005; Darling-Hammond & Lieberman, 2013; Darling-Hammond & Oakes, 2021), effective classroom management that fosters productive communities and student agency (Bartell, 2005; Darling-Hammond, 2024; Darling-Hammond & Oakes, 2021), ethical and moral awareness (Bandler & Benson, 2016; Cochran-Smith et al., 2012; Darling-Hammond & Oakes, 2021), adaptive expertise to respond to diverse needs (Darling-Hammond, 2006; Darling-Hammond et al., 2017; Darling-Hammond & Oakes, 2021), a growth mindset with resilience (Bartell, 2005; Darling-Hammond et al., 2017; Darling-Hammond & Lieberman, 2013; Darling-Hammond & Oakes, 2021), and strong interpersonal skills for relationship building (Bartell, 2005; Darling-Hammond, 2024; Grossman, 2020; Lieberman, Campbell, & Yashkina, 2016).

Reimagining teacher education programs to cultivate these competencies requires systemic changes across curriculum, clinical experiences, and program structure. Curriculum and pedagogy must be coherent, integrating theory with practice (Darling-Hammond & Oakes,

2021), embedding deeper learning pedagogies (Darling-Hammond & Oakes, 2021), explicitly integrating equity and social justice (Darling-Hammond & Oakes, 2021; Wassermann, 2022), modeling effective technology use (Cochran-Smith, Keefe, Carney, Sánchez, Olivo, & Smith, 2020; Darling-Hammond & Oakes, 2021; Lieberman, Campbell, & Yashkina, 2016), emphasizing culturally responsive skills (Bartell, 2005; Cochran-Smith et al., 2012), and reintegrating philosophy of education (Bandler & Benson, 2016; Lieberman, Campbell, & Yashkina, 2016). Clinical experiences should be extensive, well-supervised, tightly aligned with coursework in diverse settings (Darling-Hammond, 2006; Darling-Hammond & Oakes, 2021), supported by strong school-university partnerships creating "third spaces" (Darling-Hammond, 2006; Zeichner, 2010), guided by well-trained mentors (Bartell, 2005; Darling-Hammond & Oakes, 2021), provide opportunities for applying theory and analysis (Darling-Hammond & Oakes, 2021), integrate structured reflection (Darling-Hammond & Oakes, 2021; Wassermann, 2022), and include community-based experiences (Darling-Hammond, 2006; Darling-Hammond & Oakes, 2021). Finally, program structure and culture need a shared vision focused on deeper learning and equity (Darling-Hammond & Oakes, 2021), mission-aligned recruitment valuing dispositions and equity commitment (Darling-Hammond & Oakes, 2021; Wassermann, 2022), foster productive learning communities (Bandler & Benson, 2016; Darling-Hammond & Oakes, 2021), utilize ongoing feedback and authentic assessments (Darling-Hammond & Oakes, 2021; Zeichner, 2010), value practitioner and community expertise (Zeichner, 2010), possibly create hybrid educator roles (Zeichner, 2010), and resist pressures to dilute preparation standards (Darling-Hammond, 2006).

1.4. The Central Role of the Practicum Experience

The practicum experience stands as an indispensable cornerstone of teacher education, serving as a vital bridge between theoretical knowledge and practical classroom realities (Gopinathan & Loh, 2024; Ng, 2024; Bernay, Stringer, Milne, & Jhagroo, 2020; Tan & Chua, 2024; Cheah, 2024). This immersive component allows pre-service teachers to learn alongside experienced mentors in authentic educational settings, building essential teaching competencies through hands-on practice (Fitzgerald, Kardaris, Nash, Byth, & White, 2025; Gopinathan & Loh, 2024; Cheah, 2024; Bernay, Stringer, Milne, & Jhagroo, 2020). School-university partnerships facilitate these experiences, with models ranging from replication-focused training to inquiry-

based induction (Bernay, Stringer, Milne, & Jhagroo, 2020), and some programs, like in Singapore, integrating practicums throughout the curriculum (Cheah, 2024). While its importance is recognized, calls for enhanced guidelines, coaching, and expanded international practicum opportunities persist (Bernay, Stringer, Milne, & Jhagroo, 2020; Gopinathan & Loh, 2024), along with reforms involving co-construction and revised mentoring within school-university partnerships (Fitzgerald, Kardaris, Nash, Byth, & White, 2025).

1.5. Addressing the Shortcomings and Reimagining Teacher Education

Teacher education must evolve to meet the demands of the 21st century, equipping teachers with skills relevant to a globalized world and preparing them to adapt to technological advancements and post-pandemic realities (Gopinathan & Loh, 2024; Ng, 2024; Tan & Chua, 2024). This entails integrating technology into educational practices and addressing the unique challenges presented by post-pandemic realities (Gopinathan & Loh, 2024; Tan & Chua, 2024). Future readiness for educators requires the ability to be adaptable, necessitating that teacher education institutions remain at the forefront of educational innovations, such as the exploration of artificial intelligence in teaching and learning (Ng, 2024). This adaptation must encompass not only pedagogical innovation (Cheah, 2024; Ng, 2024) but also a focus on values-driven education and rethinking the roles of teachers in a rapidly changing landscape (Cheah, 2024; Gopinathan & Loh, 2024; Fitzgerald, Kardaris, Nash, Byth, & White, 2025; Bernay, Stringer, Milne, & Jhagroo, 2020).

The quality of pre-service teacher training programs in Ethiopia is compromised by several interconnected factors. Low academic qualifications and negative perceptions of the teaching profession lead to the admission of unmotivated students (Shishigu et al., 2017; Gemechu, & Aba-Oli, 2024; Ayechew Ayenalem et al., 2023; Alemu, 2024), exacerbated by poor salaries, working conditions, and limited career advancement opportunities (Hussen & Awgichew, 2016; Shishigu et al., 2017; Alemu, 2024; Olkaba et al., 2019; Gemeda & Tynjälä, 2015). These issues are compounded by frequent policy changes and unsettled curricula that hinder clear guidance to teachers (Semela, 2014; Tessema, 2014, Kebede, 2022; Shishigu et al., 2017; Gemechu, & Aba-Oli, 2024; Ayechew Ayenalem et al., 2023) and a lack of coordination between schools and teacher training institutions (Gemechu, & Aba-Oli, 2024).

These systemic problems are further exacerbated by inadequately trained teacher educators (Kebede & Asgedom, 2024; Olkaba et al., 2019), content-laden curricula with limited practical, school-based training (Gemechu, & Aba-Oli, 2024; Olkaba et al., 2019), and a lack of research-backed interventions. Ultimately, the programs fail to produce competent graduates capable of meeting the demands of teaching, as evidenced by poor performance in exit examinations (Ayechew Ayenalem et al., 2023).

The existing literatures seemingly dwell on the specific aspect in teacher education than exploring the situation from multi-directions. One important indicator for this could be some of the literature focuses on the reforms made in education whereas others emphasize on the existing practices in teacher education. Thus, in this research we aspire at exploring the way teacher education is viewed in various reforms, current trends, global perspectives, and the intended improvements to place a quality teacher education program in Ethiopia.

To address these deficiencies and embrace the changing landscape of education, rethinking of how teachers are prepared is crucial. To this end, our research is guided by the following research questions:

- What are the defining characteristics of effective Initial Teacher Education programs that prepare educators for the 21st century?
- What are the core competencies and dispositions that future teachers need to possess to thrive in the 21st century, and how can teacher education programs be reimagined to cultivate them?
- What innovative pedagogical approaches and transformative practices can be integrated into teacher education to enhance teacher preparation?

As a theoretical frame the research adheres to the perspectives of Critical Pedagogy (Freire,1970; Apple,2019; Giroux,2018); Sociocultural Theories of Learning (Kozulin, 2018; Lave & Wenger,1991; Vygotsky, 1978; Feiman-Nemser, 2010), Connectivism (Siemens,2004; Kop & Hill,2008;Downes,2008; Hendricks, 2019; Utecht & Keller, 2019), and Practice architectures theory (Cochran-Smith & Lytle, 2009; Kemmis et al., 2014; Schuck, 2012; Lasky, 2008). The aforementioned theories are relevant to understand the trends in teacher education

from the perspective of criticality, equity, social relevance, accessibility, mode of delivery, method of ensuring learning, applicability, and relevant to the contemporary and incoming world.

2. Research Methodology

2.1. Research Design

This study employs a case study design, a qualitative research approach characterized by its indepth investigation of a bounded 'case' within its real-world context (Yin, 2018). Case studies are particularly valuable for exploring complex phenomena, providing rich, contextualized insights that may not be accessible through quantitative methods (Creswell & Plano Clark, 2017). Drawing on Robert E. Stake's (1995) influential work, *The Art of Case Study Research*, this study conceptualizes case study as a rigorous method centered on the comprehensive exploration of a defined 'case' - which can be a person, program, organization, or event - within its specific context. The aim is to understand both the unique characteristics of the case and to generate broader, potentially generalizable insights. Stake (1995) differentiates between **intrinsic** case studies, where the primary focus is on understanding the case itself, and **instrumental** case studies, which use the case as an instrument or vehicle to explore a wider issue or refine a theory. He also highlights the researcher's multifaceted roles, including teacher, interpreter, biographer, and evaluator, acknowledging the inherent subjectivity and interpretive nature of case study research.

This research adopts an instrumental case study approach (Stake, 1995). The selected case (or cases, as specified later in this methodology) serves as an instrument to investigate a broader issue: the effectiveness and potential improvements of initial teacher education (ITE) programs in preparing educators for the 21st-century classroom. The focus is *not* solely on the intrinsic value of the specific ITE program(s) under investigation, but rather on how these programs can illuminate larger issues related to teacher preparation and contribute to a broader understanding of best practices in ITE.

In an instrumental case study, the researcher deliberately selects a case (or cases) that is particularly illustrative or representative of the phenomenon of interest (Baxter & Jack, 2008). The goal is to gain a deeper understanding of the larger context and, ultimately, to make

generalizations that may be applicable to other similar situations. The researcher's attention is directed towards how the case manifests the broader issue under investigation (Stake, 1995), allowing for the identification of key themes, patterns, and challenges related to ITE.

Therefore, in our research, the selected ITE program(s) are not studied for their own sake, but as a means of understanding the effectiveness and potential improvements needed within ITE programs generally. The findings from this instrumental case study will be used to inform recommendations for enhancing ITE programs to better prepare future educators for the challenges and opportunities of the 21st-century classroom.

2.2. Participants and Sampling

This research involved a diverse range of stakeholders in the education sector, including teacher educators, school teachers, deans, principals, Teacher Development Program (TDP) heads and experts, officials from the Ministry of Education (MoE) and Regional Education Bureaus (REB), policy makers, curriculum experts, and representatives from implementing partner organizations. Participants were selected using purposive sampling, ensuring the inclusion of individuals with specific knowledge and experience directly relevant to the research questions and the context of initial teacher education. The research was conducted across four sites: Addis Ababa, Hawassa, Jigjiga, and Jimma. These research sites are selected due to their convenience for data collection to the researchers. A total of 137 respondents, out of whom 119 male and 18 female take part in this research.

2.3. Data Collection Tools

Data were collected through key informant interviews (KIIs), observation and focus group discussions (FGDs). Hence, multiple data collection tools are used to implement the principle of triangulation for obtaining a reliable data. Key informant interviews served as the primary method for gathering insights from officials, policy makers, experts, curriculum developers, and experienced teachers, allowing for in-depth exploration of their perspectives on ITE. FGDs were employed to facilitate in-depth discussions among experts and teachers, providing a platform to explore diverse opinions and perspectives related to initial teacher education. Therefore a total of 27 key informant interview and 18 FGDs have been conducted in the four research sites. Kobo toolbox was used to collect data from participants.

2.4. Data Analysis

The qualitative data gathered from the key informant interviews and focus group discussions were analyzed using a case study approach. Following Stake's (1995) principles of case study data analysis, our analysis began with capturing initial impressions and identifying emerging patterns within the data. We then employed categorical aggregation, systematically searching for recurring instances that represented categories relevant to our research questions. Through a rigorous process of coding and thematizing the data, we identified overarching themes and patterns. Finally, we interpret the findings to provide explanations and meaningful insights regarding initial teacher education. The ultimate goal is to present a rich and vivid case study report that articulates the findings in a coherent and compelling narrative.

2.5. Ethical issues

Every ethical protocol are respected throughout the research by all actors deployed in the data collection. Hence, the principle of confidentiality and anonymity will be implemented. Additionally, a due attention and care will be given for the needs and emotion of participants. Only those participants who provided a written consent will take part in this research. The secondary sources are cited and duly acknowledged.

3. Results and Discussion

3.1. Characteristics of Effective Initial Teacher Education (ITE) Programs

This study identifies key characteristics of effective Initial Teacher Education (ITE) programs, highlighting the importance of a holistic and integrated approach to teacher preparation. These characteristics, derived from interviews and focus group discussions, align with existing literature on best practices in teacher education.

3.2. Rigorous Selection Criteria and Student Intake

The study participants consistently emphasized the need for stricter selection criteria to ensure academically capable and genuinely passionate individuals enter the teaching profession. Raising entry standards and offering incentives to attract top-performing students were seen as crucial to building a competent and effective teaching workforce. This finding supports existing research that suggests the quality of teacher candidates significantly impacts the overall effectiveness of

teacher education programs (Shishigu et al., 2017; Gemechu, & Aba-Oli, 2024; Ayechew Ayenalem et al., 2023). Ndebele et al. (2024) also underscore the need to reconceptualize teacher education programs to meet the needs of 21st-century learners, which starts with attracting higher caliber individuals into the profession. Ethiopia's challenges mirror those in other developing contexts, where teaching is often seen as a fallback career due to poor incentives (Shishigu et al., 2017; Alemu, 2024).

3.3. Relevant and Aligned Curriculum

Participants stressed that the curriculum should be both theoretically sound and practical, aligning with the country's lifestyle, educational needs, and minimum learning competencies (MLC).

To prepare future teachers effectively, the teacher education curriculum must be reevaluated. Key areas to focus on include content knowledge, language proficiency, methodology, and pedagogical skills (Respondent Dean 3)

The participants emphasize the need for curricula that are practical, contextually appropriate, and aligned with national needs and learning competencies. They criticized the existing curriculum for its disconnect from classroom realities and called for its reevaluation to meet modern educational standards. This aligns with the broader discourse on curriculum relevance, where a well-designed curriculum is crucial for equipping teachers with the necessary knowledge and skills to effectively address the needs of their students (Cheah, 2024; Gopinathan & Loh, 2024). Gilbert (2013) further argues that ITE programs must evolve to equip teachers with a 21st-century orientation to knowledge, thinking, and learning, moving beyond simply adding new skills to their existing repertoire.

3.4. Research-Informed Practice

A research-based approach emerged as essential for teacher education, aligning with action research and embedding research engagement into routine practice. This finding reinforces the importance of grounding teacher training in evidence-based practices and ensuring that educators are equipped with the latest knowledge and skills necessary for effective instruction (Elstad, 2023a; Mikkilä-Erdmann, Nummi, & Erdmann, 2024).

3.5. Collaboration Among Stakeholders

Participants emphasized that collaboration between policymakers, educational institutions, and NGOs is vital for strengthening ITE programs and creating a supportive network for improved educational outcomes. This highlights the importance of establishing strong school-university partnerships, a concept supported by Fitzgerald et al. (2025) who argue that genuine, multifaceted collaborations and co-design principles are crucial for enriching initial teacher education. Bernay et al.,(2020) support further the establishment of university partnerships because they facilitate the exchange of ideas, and provide immersive experiences for pre-service teachers. Glazzard and Tate, 2024 critique the marketization of ITE and advocate for theoretically grounded partnerships.

3.6. Innovative Pedagogical Approaches

A recurring theme was the need for innovative and engaging teaching methods, effective communication, and a balanced approach to knowledge, skills, and attitudes. Participants stressed the need for technology-oriented, diversity-responsive, and transformative pedagogies that promote active learning, critical thinking, and technology integration. The discussants highlight that the future teacher education programs in Ethiopia must embrace teaching strategies that incorporate innovative methodologies that embrace technology. This aligns with Ryan's (2023) assertion that modern teaching requires complex problem-solving skills and the capacity to adapt to the evolving needs of 21st-century learners. Moreover, 21st-century teaching demands digital literacy, problem-based learning, and inclusivity (Cerovac & Keane, 2023; Blandford, 2024).

3.7. Supportive Learning Environment for Student Teachers

The study participants underscored the importance of providing mentoring, induction programs, and cultivating a sense of belonging for student teachers. This sentiment is echoes in the existing scholarly findings with several authors stating that teachers must develop skills relevant and adapt to changes such as the increasing use of technology in education and the post-pandemic realities (Tan, & Chua, 2024; Gopinathan, & Loh, 2024; Ng, 2024; Fitzgerald, Kardaris, Nash,

Byth, & White, 2025). Continuous support reduces attrition and enhances teacher efficacy (Du Plessis & Dreyer, 2024).

3.8. Alignment Between Theory and Practice

Integrating practical exercises into teacher training and aligning university-based training with the needs of schools emerged as essential for translating theoretical insights into effective teaching methodologies and enhancing student learning outcomes. The scholarly literature echoes this sentiment of connecting classroom theory with the reality of school conditions stating that "Balancing theoretical understanding with practical application. Teacher education programs strive to bridge the gap between academic theories and the realities encountered in actual classroom settings" (Fitzgerald, Kardaris, Nash, Byth, & White, 2025; Bernay, Stringer, Milne, & Jhagroo, 2020; Du Plessis & Dreyer, 2024). Extended practicums and clinical experiences bridge this gap. Furthermore, incorporating retrospective beliefs and fostering collaboration with schools can enhance practical learning opportunities (Ní Chróinín & O'Sullivan, 2014).

In summary, the characteristics of effective ITE programs identified in this study highlight the need for a comprehensive and integrated approach that prioritizes rigorous selection, curriculum relevance, research-informed practice, collaboration, innovative pedagogy, supportive learning environments, and a strong link between theory and practice. These findings underscore the importance of ongoing efforts to reimagine and reform teacher education programs to meet the evolving needs of 21st-century learners.

3.9. Core Competencies and Dispositions for 21st-Century Teachers

The study revealed a strong consensus among participants regarding the core competencies and dispositions necessary for teachers to thrive in the contemporary educational landscape. These findings resonate with existing literature, highlighting the critical importance of a multifaceted skillset for effective teaching in the 21st century.

3.9.1. Mastery of Subject Matter

Participants emphasized that a profound understanding of the subject matter is the bedrock of effective teaching. As participant noted, a teacher must possess "excellent subject matter knowledge," which necessitates a continuous reassessment of teacher education curricula to

ensure future educators are well-prepared. This is not simply about knowing the content, but also about knowing how to effectively convey that knowledge to students. This aligns with the literature emphasizing the importance of a robust knowledge base encompassing academic proficiency and pedagogical content knowledge (Elstad, 2023a; Mikkilä-Erdmann, Nummi, &Erdmann, 2024; van Geel et al., 2023).

3.9.2. Pedagogical Knowledge

The study underscored the critical role of pedagogical knowledge, encompassing an understanding of effective teaching methods and strategies. Participants advocated for the integration of innovative pedagogies, such as simulations, case studies, project-based learning, and the flipped classroom approach. This aligns with the growing recognition that contemporary teaching requires a shift away from traditional, teacher-centered approaches towards more engaging, student-centered methods (Ryan, 2023). As one participant stated, "We need innovative pedagogies," highlighting the need for teacher education programs to equip future educators with a diverse range of instructional strategies.

3.9.3. Ability to Manage Diversity and Inclusiveness

Participants emphasized the importance of managing diversity and fostering inclusivity in classrooms. This includes creating adaptive and balanced curricula that integrate methods for addressing diverse student backgrounds and learning needs. This resonates with existing literature highlighting the increasing diversity of student populations and the need for teachers to be prepared to effectively teach diverse learners (Adams & Lok, 2022; Drahmann et al., 2020). The ability to cultivate a sense of belonging and set high expectations for all students is crucial for creating an equitable and inclusive learning environment.

3.9.4. Strong Communication Skills

The study identified strong communication skills as a vital component of effective teaching. Participants emphasized the need for ITE programs to prioritize the development of clear speaking, active listening, and understanding others' perspectives. Effective communication is essential for engaging students, creating dynamic learning environments, and fostering strong relationships with students, colleagues, and parents (Mikkilä-Erdmann et al., 2024). Strong communication skills are essential for teachers to effectively communicate with students,

colleagues, and parents. This includes both verbal and non-verbal communication, as well as the ability to listen actively and empathetically.

3.9.5. Lifelong Learning and Adaptability

Participants emphasized the need for teachers to possess a commitment to lifelong learning and adaptability, requiring continuous adaptation to emerging technologies and innovative educational practices. This aligns with the understanding that the educational landscape is constantly evolving, and teachers must be prepared to meet community needs, adapt to emerging technologies, and engage in continuous professional development (Cheah, 2024; Ng, 2024). The literature reinforces lifelong learning is vital for teachers to be adaptable, and for teacher education institutions to remain at the forefront of educational developments, including exploring areas like artificial intelligence in education (Ng, 2024). ITE programs must instill a mindset of lifelong learning and adaptability in teachers. This includes encouraging them to stay informed about new research, technologies, and best practices.

3.9.6. Critical Thinking, Problem Solving, and Innovation Skills

The study underscored the importance of critical thinking, problem-solving, and innovation skills for navigating complex classroom dynamics and fostering innovation and critical analysis capabilities in both educators and their students. This aligns with the recognition that contemporary teaching requires more than just rote knowledge; it requires the ability to think critically, solve problems creatively, and adapt to changing circumstances (Ryan, 2023). As Participant stated, "creativity and innovation should be integral parts of the curriculum," emphasizing the need for ITE programs to foster these essential skills. Teachers must be able to think critically, solve problems, and innovate in order to effectively meet the challenges they face in the classroom. This includes the ability to analyze data, make informed decisions, and adapt their teaching strategies as needed.

3.9.7. Digital Literacy and Technology Integration

Participants highlighted the essential role of digital literacy and technology integration in preparing teachers for the modern classroom. Discussant emphasized the need to "equip teachers with knowledge in AI and high technology," recognizing that future educators must be proficient in leveraging technological advancements to enhance teaching and learning. This aligns with

existing literature highlighting the need for teachers to be digitally literate and able to effectively integrate technology into their instruction (Tan & Chua, 2024). Skagen and Elstad (2023) highlights the importance of technology effectively for teachers. Teachers must be digitally literate and able to effectively integrate technology into their teaching. This includes using technology to enhance instruction, assessment, and communication.

3.9.8. Reflective Practice

The study emphasized the importance of reflective practice, with participants advocating for teachers to actively evaluate their teaching methods and student outcomes. This aligns with research highlighting the benefits of reflective practice in promoting ongoing improvement and the ability to adapt teaching strategies effectively (Hansén et al., 2023; Wang, Ko, & Wang, 2023). Reflective practice is essential for teachers to continuously improve their teaching skills and student learning outcomes. This involves self-assessment, peer observation, and feedback.

3.9.9. Learning to Learn

Finally, the study emphasized the concept of "learning to learn," which involves equipping learners with the metacognitive skills necessary to acquire and apply knowledge effectively, adapt to changing information, and unlearn outdated concepts. This aligns with the need for teachers to adopt student-centered methods that facilitate and guide learning, empowering students to become independent and lifelong learners (Heikkilä & Hermansen, 2024). Teachers should be able to take on the role of lead learner demonstrating how to learn independently, how to seek out information, and how to solve problems effectively

In conclusion, the findings of this study underscore the need for a comprehensive and multifaceted approach to teacher education that emphasizes both content knowledge and pedagogical skills, as well as the development of essential 21st-century competencies and dispositions. Integrating these elements into ITE programs will enable to better prepare future educators to meet the challenges of the modern classroom and empower their students to succeed in a rapidly changing world.

3.10. Innovative Pedagogical Approaches in Initial Teacher Education (ITE)

The study identified several innovative pedagogical approaches that should be integrated into Initial Teacher Education (ITE) programs to effectively prepare future educators for the challenges and opportunities of the 21st-century classroom. These approaches are not merely trendy buzzwords but rather represent fundamental shifts in how teachers are prepared to engage with students and the learning process. Participants in this study emphasized the need for ITE to move beyond traditional lecture-based methods and embrace more active, engaging, and relevant strategies. The following discussion integrates the findings of this study with existing literature, providing a nuanced understanding of each approach and its potential impact on teacher education.

3.10.1. Student-Centered Learning

A central theme emerging from the data was the importance of prioritizing active engagement and student involvement in their own educational journey. As one participant noted, ITE should "focus on active learning, problem-solving...What teacher educators are expected to do is support and encourage students by providing direction rather than delivering all the knowledge". This aligns with the principles of student-centered learning, which emphasizes that learning is most effective when students are actively involved in the process (Ryan, 2023). ITE programs should model and promote student-centered learning approaches. This involves creating engaging, relevant, and challenging learning experiences that meet the individual needs of students.

3.10.2. Experiential Learning Opportunities

Participants consistently highlighted the value of integrating field experiences into teacher education programs, arguing that it allows future educators to develop practical skills in authentic teaching situations and bridge the gap between theoretical knowledge and real-world application. One participant stated, "Prospective teachers need to spend time in schools and receive feedback". This emphasis on practical application is supported by the work of Sanford, Hopper, and Starr (2015), who advocate for relational approaches that integrate coursework with authentic school experiences. Experiential learning provides pre-service teachers with the opportunity to apply their knowledge in real-world settings, receive feedback from experienced educators, and reflect on their practice. Providing authentic, hands-on experiences is critical for preparing teachers for the realities of the classroom. This includes practicum experiences, internships, and opportunities to work with experienced mentors. These experiences are critical

for building confidence, developing practical skills, and preparing teachers for the realities of the classroom.

3.10.3. Digital Pedagogy and Technology Integration

In today's digital age, the ability to effectively utilize technology as a teaching tool is no longer a luxury but a necessity. Participants emphasized the need for ITE programs to incorporate digital literacy into their curricula, enabling future educators to leverage technology to enhance teaching and learning. As one participant noted, "In this digital age, students are smart enough that they are already familiar with many technological devices. Likewise, we should be able to create teachers with digital skills". This perspective aligns with Skagen & Elstad's (2023) research, which highlights the importance of technology integration in creating blended learning environments. Digital pedagogy involves more than just using technology in the classroom; it requires teachers to understand how technology can be used to enhance engagement, personalize learning, and promote collaboration. ITE programs must equip future teachers with the skills and knowledge to effectively integrate technology into their teaching practice.

3.10.4. Problem-Based Learning and Inquiry-Based Learning

Promoting critical thinking and active problem-solving through real-world problem engagement emerged as a key theme in the study. Participants advocated for the use of problem-based learning and inquiry-based learning methodologies, arguing that these approaches foster a deeper understanding of content through exploration and investigation. As one participant stated, "The pedagogy of teaching differs according to the student's grade level...Simulations and case studies, project-based learning can be applied at the appropriate level". Tan & Chua (2024) support this approach, arguing that it fosters a deeper understanding of content. Teachers should learn to guide students through real-world challenges that promote innovative solutions and questions existing knowledge and thought processes. ITE programs must prepare future teachers to design and facilitate learning experiences that encourage students to explore, question, and discover new knowledge.

3.10.5. Inclusive Teaching Strategies

Creating inclusive classrooms where every student feels valued, supported, and empowered to succeed is a critical goal of modern education. Participants emphasized the importance of preparing teachers to meet the community's needs through culturally responsive teaching methods that honor and address the unique backgrounds of their students. As one participant noted, "Teachers must be prepared to meet the community's needs". This aligns with the research of Adams & Lok (2022) and Drahmann et al. (2020), who highlight the importance of culturally responsive teaching methods in creating inclusive learning environments. Inclusive teaching strategies involve understanding and respecting cultural differences, adapting teaching methods to meet diverse learning needs, and creating a classroom environment where all students feel valued and supported. ITE programs must equip future teachers with the skills and knowledge to create inclusive classrooms that promote equity and opportunity for all students.

3.10.6. Collaborative Models and Mentorship

The importance of collaboration among various stakeholders, including universities, schools, NGOs, and government bodies, emerged as a key theme in the study. Participants argued that strengthening these collaborations and incorporating mentorship programs would enhance teacher preparation and support. As one participant noted, ITE programs should "strengthen collaboration among universities, schools, NGOs, and government bodies to enhance teacher preparation and support. Incorporate mentorship programs, wherein experienced teachers support new educators as they transition into their roles". This aligns with Fitzgerald et al.'s (2025) research, which highlights the benefits of school-university partnerships in enriching initial teacher education. Collaborative models and mentorship provide pre-service teachers with the opportunity to learn from experienced educators, receive feedback on their practice, and build supportive professional networks. ITE programs must foster these collaborations and create opportunities for mentorship to ensure that new teachers are well-supported as they begin their careers.

In conclusion, these innovative pedagogical approaches represent a significant departure from traditional teacher education practices. By embracing student-centered learning, experiential learning, digital pedagogy, problem-based learning, inclusive teaching strategies, and collaborative models, ITE programs can effectively prepare future educators for the challenges and opportunities of the 21st century. The implementation of these approaches requires a

commitment to ongoing innovation, collaboration, and a focus on the needs of both pre-service teachers and the students they will serve.

4. Conclusion

This study embarked on a critical exploration of Initial Teacher Education (ITE), aiming to identify key characteristics of effective programs, essential competencies for 21st-century teachers, innovative pedagogical approaches, the importance of partnerships, and the persistent challenges facing ITE today. By integrating the findings from interviews and focus group discussions with a robust review of existing literature, this study provides a comprehensive understanding of the current state of ITE and offers valuable insights for future reform.

The results paint a clear picture: effective ITE programs must adopt a holistic and integrated approach, prioritizing rigorous selection criteria that attract academically strong and genuinely passionate individuals (Ndebele et al., 2024; Shishigu et al., 2017; Gemechu, & Aba-Oli, 2024; Ayechew Ayenalem et al., 2023). A relevant and aligned curriculum, grounded in research-informed practices and designed to meet the evolving needs of 21st-century learners, is equally critical (Cheah, 2024; Gopinathan & Loh, 2024; Gilbert, 2013; Elstad, 2023a; Mikkilä-Erdmann, Nummi, & Erdmann, 2024; Echeverria, 2025). Furthermore, fostering collaborative relationships among stakeholders is essential for creating supportive networks and ensuring that teacher education programs are both theoretically sound and practically relevant (Fitzgerald et al., 2025; Bernay et al., 2020).

The study also highlights the need for ITE programs to embrace innovative pedagogical approaches, moving beyond traditional methods to incorporate student-centered learning, experiential opportunities, digital pedagogy, and inquiry-based learning (Ryan, 2023; Sanford, Hopper, and Starr, 2015; Skagen & Elstad, 2023; Adams & Lok, 2022; Drahmann et al., 2020). Providing supportive learning environments for student teachers, characterized by mentorship and a sense of belonging, is crucial for facilitating their transition into the profession (Ní Chróinín & O'Sullivan, 2014). Ultimately, bridging the persistent theory-practice gap by integrating practical exercises and aligning university-based training with the real-world needs of

schools is essential for translating theoretical knowledge into effective teaching practices (Du Plessis & Dreyer, 2024).

Moreover, this study underscores the crucial need for teachers to possess a diverse skillset, including mastery of subject matter, pedagogical expertise, the ability to manage diversity and promote inclusivity, strong communication skills, a commitment to lifelong learning and adaptability, critical thinking and problem-solving abilities, digital literacy, and reflective practice (Elstad, 2023a; Mikkilä-Erdmann, Nummi, & Erdmann, 2024; Ryan, 2023; Cheah, 2024; Ng, 2024; Tan & Chua, 2024). ITE programs can empower future educators to create engaging, equitable, and transformative learning experiences for all students.

Limitation of the study

Budget constraint limit us from including the 38 Teacher Training Colleges and the Universities that offer teacher education. We attempted to counter this gap by collecting evidences from secondary sources.

Recommendations

Based on the study's results, analysis of the current state, and the future needs of initial teacher education (ITE), the following recommendations are offered to reimagine ITE programs for the 21st century:

The need to Strengthen Admissions Criteria and Recruitment Strategies

- a) Implement Rigorous Selection Criteria: Raise the bar for entry into teacher education programs by prioritizing academic excellence, a genuine passion for teaching, and demonstrated aptitude for working with learners. Develop standardized assessments that measure these qualities beyond traditional academic metrics.
- b) Enhance the Attractiveness of the Teaching Profession: Attract high-achieving students into ITE programs by improving compensation, benefits, and career opportunities for teachers
- c) Targeted Recruitment: Implement targeted recruitment campaigns to attract a diverse pool of candidates, reflecting the diversity of the student population.

The need to Reform Curriculum to Reflect 21st-Century Needs

- a) Develop a Relevant and Aligned Curriculum: Re-evaluate and revise the curriculum to ensure it is practical, contextually appropriate, and aligned with the realities of the classrooms.
- b) Integrate 21st-Century Skills: Explicitly incorporate 21st-century skills such as critical thinking, problem-solving, creativity, collaboration, communication, and digital literacy into the curriculum. Develop specific learning outcomes and assessments that measure these skills.
- c) Promote Learning centeredness: Cultivate learning centered institution where both teacher educators and teacher candidates continuously learn and improve. Train teacher candidates in facilitating active learning, inquiry-based learning, and project-based learning experiences.
- d) Embrace Digital Pedagogy: Integrate digital technology seamlessly into the curriculum, equipping teachers with the skills and knowledge to effectively use technology to enhance teaching and learning. Provide training in digital tools, online resources, and strategies for creating engaging and interactive learning experiences.
- e) Integrate Cultural Competency and Equity: Incorporate explicit instruction on cultural competency, diversity, equity, and inclusion. Train teacher candidates to understand and address the diverse needs of their students, promote culturally responsive teaching practices, and create inclusive classroom environments.

The need to Strengthen Practical Experiences and Mentorship

- a) Extend and Enhance Practicum Experiences: Provide extended and well-supported practicum experiences in diverse school settings. Ensure that pre-service teachers have opportunities to observe, co-teach, and lead instruction under the guidance of experienced mentor teachers to ensure that student teachers can apply theoretical knowledge in realworld settings.
- b) Implement Structured Mentoring Programs: Pair new teachers with experienced mentors who can provide guidance, support, and feedback during their first years in the

- classroom. Establish clear guidelines and training for mentors to ensure the effectiveness of mentoring programs.
- c) Strengthen School-University Partnerships: Foster genuine, multifaceted collaborations between universities and schools. Involve teachers and school leaders in the design, implementation, and evaluation of teacher education programs.

The need to Promote Research-Informed Practice and Continuous Improvement

- a) Integrate Research into Teacher Education: Equip teacher candidates with the skills to critically evaluate research, apply evidence-based practices, and conduct action research in their own classrooms. Encourage them to use data to inform their instructional decisions and improve student outcomes.
- b) Establish Robust Evaluation Systems: Develop comprehensive evaluation systems that measure teacher candidates' competence in a variety of areas, including content knowledge, pedagogical skills, classroom management, and cultural competency. Use evaluation data to inform program improvement and ensure accountability.
- c) Foster a Culture of Continuous Professional Development: View initial teacher preparation as the first step in a lifelong learning continuum. Provide ongoing professional development opportunities for teachers to enhance their knowledge, skills, and practices throughout their careers.

The need to Address Systemic Challenges and Foster Collaboration

- a) Increase Funding for Teacher Education: Advocate for increased funding for teacher education programs. Allocate resources to improve training facilities, provide access to technology and learning materials, and offer scholarships and incentives to attract top candidates.
- b) Improve Coordination Among Stakeholders: Establish clear communication channels and collaborative frameworks among educational institutions, government bodies, and other relevant stakeholders. Work together to develop coherent training programs that address community needs and improve educational practices.

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- c) Promote the Status and Value of Teaching: Launch public awareness campaigns to raise the profile of the teaching profession and highlight the important role that teachers play in society. Advocate for policies that improve teacher compensation, working conditions, and opportunities for career advancement.
- d) Support Teacher Wellbeing: Integrate strategies for promoting teacher wellbeing and resilience into ITE programs, addressing issues related to stress management, self-care, and work-life balance.

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