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Teacher Agency in the Context of China's Digital Transformation

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School of Education

Durham University

Abstract

This thesis explores the situated enactment of teacher agency in the context of DE reform in rural China. While digital reform is increasingly positioned in national policy to address rural-urban educational inequality, there remains limited empirical insight into how such reforms are understood, negotiated, and implemented by teachers, particularly in rural schools-- an area that remains underrepresented in international scholarship. To bridge this gap, the study examined both the policy discourse framing DE and the lived experiences of rural teachers, drawing on an integrated conceptual framework that combines Priestley et al.'s (2015) ecological approach to teacher agency with Passey et al.'s (2018) notion of digital agency.

The study first adopted Bacchi's (2009) "What's the Problem Represented to Be?" (WPR) approach to analysis Chinese policies. Through this critical lens, it shows that China's digital education (DE) reform is influenced by global trends in education technology and shaped by a wider neoliberal agenda. The reform involves both structural and cultural changes. Structurally, it follows a hybrid governance model with decentralised implementation, performance-based accountability, and strong central ideological control. Culturally, DE is presented as modern and progressive. Teachers are portrayed both as innovators and as targets of top-down regulation. However, these policy narratives often ignore the realities of rural schools and fail to recognise teachers' professional knowledge and autonomy.

Empirically, the study was based on qualitative fieldwork conducted in Sichuan province, China. Data were collected from 28 semi-structured interviews with rural teachers who are working in different rural schools. Then, for a detailed exploration of school structures, professional biographies, and pedagogical routines, classroom observations and post-lesson interviews were conducted with seven of them from two focal schools. The findings highlight a recurring disconnect between policy expectations and classroom practice. In many cases, DE was implemented performatively - teachers used mandated tools and platforms for superficial compliance, while core teaching methods remained largely unchanged. Teacher agency was most visibly exercised through the practical-evaluative dimension, where teachers made daily decisions by balancing pedagogical intent with digital competence, infrastructural limitations, and institutional demands. Rather than full-scale resistance or passive compliance, teachers often adopted strategies of pragmatic adaptation, selectively engaging with reform in ways that aligned with their values and local conditions.

This study contributes to a growing body of literature on rural education in China and teacher agency in digital reform contexts. By foregrounding the voices and experiences of rural teachers, it offers new insights into how digital reform is enacted in context and advances our understanding of teacher agency as both shaped by and shaping systemic change. It argues for more context-sensitive policy approaches that position rural teachers not merely as policy enactors, but as co-constructors of meaningful, sustainable digital reform. By developing an integrated conceptual framework that bridges ecological and digital perspectives, this study contributes to a deeper understanding of teacher agency in the context of digital reform.

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1. Introduction

1.1 Personal and Academic Motivations

This research journey began as a personal inquiry, rooted in my lived experience of growing up in a rural town in China. A decade ago, accessing the internet meant visiting the town's only Internet Café, which had just three outdated computers used mainly for chatting and basic gaming. In contrast, when I returned to my hometown just before coming to the UK for my master's degree in 2019, I was struck by how much had changed: once-remote villages were now accessible by paved roads, and many households had internet access. This transformation prompted me to reflect not only on the rapid pace of infrastructural development, but also on changes in education.

While my early years exposed me to the realities of schooling in under-resourced regions, it was during my doctoral training that these memories began to evolve into sharper research questions. One key influence was Wu's *Fabricating an Educational Miracle* (2016), an ethnographic account of compulsory education in a rural ethnic region of Southwest China. The vivid, unembellished portrayal of remote schools and the social realities faced by ethnic minority students resonated deeply with memories from my own schooling. Similarly, Kipnis's *Governing Educational Desire* (2011), based on two decades of research in Zouping County, Shandong, described a version of rural education shaped by urbanisation and policy-driven reform. As I read these works, I found myself drawn into the rural scenes and educational challenges described in their ethnographic accounts. These personal observations led me to consider whether this technological shift had also brought about meaningful changes in education. Were rural

students now learning differently? Had teaching evolved to match the potential of digital tools?

As I delved deeper into the literature, I encountered a growing international discourse highlighting the transformative potential of technology in education. From global development agencies to academic researchers, information and communication technologies (ICT) are frequently positioned as powerful tools to bridge educational divides, by expanding access to knowledge, improving teaching quality, and enhancing economic prospects for marginalised communities (Aker & Mbiti, 2010; Jensen, 2007; The World Bank, 2000; Trucano, 2014). Yet, this optimistic vision is increasingly questioned by scholars like Selwyn (2013; 2016) who critiques the deterministic and depoliticised tone of much ed-tech discourse, arguing for a more grounded analysis that accounts for the social, cultural, and institutional contexts in which technology is embedded.

These critiques compelled me to reflect more deeply on the direction of China's current digital education reform. That is China's rapid digital expansion is frequently framed in policy discourse as a neutral solution to educational disparity, yet this framing often obscures the localised complexities of implementation, especially in rural schools. For example, initiatives such as "Internet+ Education", rural teacher s' digital competence development programmes, and digital resource platforms are presented as vehicles for promoting equity and improving teaching quality. Official statistics report that over 99% of internet users access the web via mobile devices (CNNIC, 2021), and ethnographic accounts suggest that rural communities are engaging enthusiastically with mobile technologies (Oreglia, 2013). However, a growing body of research suggests that implementation remains deeply uneven: urban schools often have the resources,

infrastructure, and training to support digital pedagogies, while rural schools continue to face shortages of skilled personnel, equipment, and sustained support (Huang, 2021; Liu et al., 2021; Ren et al., 2017; Spires, 2017).

This contradiction became a key point of intrigue for me to asking why does the same technology lead to such varied outcomes across regions? How do teachers in rural China experience and respond to these top-down reforms? And what shapes teachers' capacity and willingness to use digital tools in meaningful ways? These questions converged with my academic development during my doctoral training. Drawing on critical perspectives in education and development, I became increasingly interested in how global and national digital reforms are locally interpreted, negotiated, and sometimes resisted by teachers. As Burrell & Toyama (2009) caution, universal digital solutions often falter when they fail to account for local contexts, social dynamics, and cultural meaning. As I progressed through the doctoral process, these reflections shaped research questions that resonated with both my personal experience and broader academic debates.

Theoretically, I had drawn to frameworks that consider teacher engagement as a situated, relational, and dynamic process. Rather than viewing teachers as passive recipients of policy or as mere implementers of technology, I was interested in how they act within and against constraints—making decisions, adapting tools, and shaping their classroom practices in meaningful ways. This led me to explore how concepts such as professional autonomy, belief systems, and institutional culture influence their work. Over time, these ideas converged into a research agenda focused on rural teachers' digital engagement as both a site of constraint and possibility.

This study thus motivated by a desire to understand how digital education reform is enacted in the everyday practices of teachers in rural Chinese schools. It is grounded in both personal resonance and academic inquiry. This thesis aims to offer a critical, context-sensitive account of teachers' lived experiences and the broader structures that shape them—contributing to ongoing conversations not only about rural education and digital reform in China, but also about how we conceptualise the role of teachers in educational change more broadly.

1.2 Research Background

In the contemporary era of global digital transformation, the integration of technology into education is taking place beyond classroom instruction to include educational governance, curriculum design, and national development strategies (Cloete, 2017). As the UNESCO (2021) reports that education should play a role not only in preparing and supporting individuals to be integrated into the world of work, but also to provide opportunities for lifelong learning to ensure they keep up with the changing future in conditions of freedom and dignity. Digital technology for education is seen as following that goal of benefiting the economy, globalisation and the next generation's job preparation under the digital transformation (Fullan & Langworthy, 2014; UNESCO, 2021). Researchers such as Jenkins (2006) supports the view that technology has the potential to enhance learning by enabling new pedagogical models, improving access to resources, and supporting personalised instructions.

Moreover, educational disparity as a global challenge closely linked to socio-economic stratification. It contributes to inequalities in occupational status, income, and social mobility (Buchmann & Hannum, 2001; Brown, 2016; Hertz et al., 2008; Marginson,

2018). In many countries, digitalisation is often portrayed as a way to close opportunity gaps and modernise outdated systems (Rana et al., 2020; Vandeyar, 2015). Equally, as China enters the global world, education becomes a key vehicle to respond to the economy, and the technology for education is gained increased importance in light of a digital economy and globalisation.

China's education system has experienced substantial structural and policy reforms, particularly aimed at addressing uneven regional development and promoting equitable access to quality education. Among the most pressing challenges facing China today is the persistent educational divide between urban and rural areas. Rural schools frequently struggle with limited funding, under-qualified teaching staff, and outdated facilities, while urban schools often benefit from more advanced infrastructure and greater investment in teacher development (Li, 2016; Ling et al., 2020). One key reason for this disparity lies in the country's decentralized funding system. Over 90% of China's public education budget comes from local governments (National Bureau of Statistics, 2020), placing enormous pressure on less developed regions to support their school systems with limited fiscal capacity (Wang & Tao, 2017). As a result, children in poorer rural areas often receive less educational support, which can significantly hinder their academic outcomes and long-term opportunities.

International and national assessments alike highlight these disparities. The OECD's PISA report (2020), for instance, highlights the high performance of students in Beijing, Shanghai, Jiangsu, and Zhejiang across reading, mathematics, and science, while noting that these results primarily reflect urban conditions. Even within successful cities, teachers continue to face traditional role expectations and limited pedagogical autonomy (Tan & Reyes, 2016). Educational inequality has real consequences for rural students,

who often perform worse than their urban peers in national assessments and have fewer opportunities to access high-quality secondary schools or universities (OECD, 2020; Loyalka et al., 2017). This urban–rural gap is further exacerbated by socio-demographic factors. Many children in rural areas are classified as 'left-behind', meaning their parents have migrated to cities for work while the children remain with grandparents or other caregivers. These children typically lack consistent parental support in education and rely heavily on schools as their main source of learning and development (Zhao et al., 2017). China's rapid urbanisation has further deepened this divide, underscoring the need to re-evaluate educational policies and practices aimed at supporting rural learners (Golley & Kong, 2016; Normile, 2017).

In response to these systemic inequalities, the Chinese government has placed digital reform at the centre of its national strategy for educational modernisation and rural Revitalisation (State Council of China, 2006; MoE, 2018). Under the umbrella of Education Informatisation (EI)[1], major investments have been made to provide digital infrastructure and platforms to under-resourced schools. Policy discourse has evolved from simply providing access to technology (EI 1.0) to promoting more ambitious goals, such as fostering creativity, innovation, and digital literacy among students and teachers (EI 2.0). Despite substantial investments in infrastructure and teacher training,

empirical studies reveal that rural schools still face substantial obstacles, including a lack of training for teachers, limited technical support, and rigid policy mandates that

[1] Throughout this thesis, I use the term Digital Education (DE) to refer broadly to pedagogical and institutional transformations associated with technology integration, and Education Informatisation (EI) to describe China's strategic, policy-driven approach to digital reform. These and other related terms are clarified in *Section 1.6,* which outlines the key definitions and their contextual application within this study.

leave little room for locally relevant innovation (Abbey et al., 2019; Ji et al., 2017; Guo et al., 2020). While digital technologies hold the potential to enhance educational quality and equity, their successful integration into teaching depends on more than access to tools or infrastructure.

It is essential to recognise teachers' roles in shaping these practices. Their ability to navigate structural constraints, adapt digital tools to fit their teaching goals, and critically engage with available resources. Central among these is the role of teachers, who must make ongoing decisions about how, when, and why to integrate digital tools into their teaching (Kozma, 2011). Since teachers are not passive recipients of reform, their capacity to act, exercise pedagogical judgement, and reshape practice plays a pivotal role in determining whether digital reform leads to meaningful change (Biesta et al., 2015). In this context, teachers are seen as critical actors who deeply influence the success or failure of DE initiatives (European Commission, 2021; Office of Educational Technology of US, 2017). Moreover, international research suggests that when teachers are afforded greater autonomy and support, they are more likely to integrate digital tools effectively and meaningfully (Albion & Tondeur, 2018). This highlights the importance of recognising teachers' capacity to make informed, situated decisions within their specific institutional and cultural environments.

Yet, educational technology research usually focuses on the efficiency of digital technologies, such as studying specific tools used by practitioners rather than the factors that impact technology adoption (Selwyn, 2013). The rationale for this tendency is often hinging on deterministic views to technology that end up polarising educational tech debates from a dualistic perspective, thereby reproducing misconceptions about what technology can or cannot do. More often than that, if the initiatives aiming to promote

equality and quality in education (see Section 2.3) overlook the complex social and geographical differences may not meet their original goal. According to Berry's (2015) description, digitisation has become complexly bound with the structure of the social reality as a post-digital world. Especially China's unique social and political characteristics, with its centralised state and governance system, fractured socioeconomic structures, geographical differences, community relations, and cultural values and beliefs about education, make an inquiry into educational change necessary and instructive in such a context. Therefore, it is not enough to focus only on technology and applications, a broader focus on digital practices in education and how digital is used to impact agency and challenge existing structures is needed (Dufva & Dufva, 2019), if education is to serve society in more inclusive ways.

With this research background, it is essential to explore how teachers teaching practices are taking place within the context of their position – in rural China--and what factors influence their practices in such a way. This research places particular emphasis on rural teachers' agency, as it plays a crucial role in understanding how teachers navigate and enact their professional practices, especially in the context of reform (Priestley et al., 2013; Biesta et al., 2015). Yet this has not been widely explored neither in Chinese context nor in digital reform. By focusing on this gap, the study is expected to contribute to a deeper understanding of teacher agency and identify the factors impacting agency in mediating digital reform processes. In doing so, the findings may offer valuable insights not only for educational policy and implementation in China, but also for other contexts where teachers work under similar professional constraints.

1.3 Objectives and Research Questions

The research aimed to comprehensively explore DE implementation in rural China, with a particular emphasis on understanding the role of teacher agency. To achieve this aim, the study had several key objectives. Firstly, it sought to understand the ideology of DE in Chinese context, especially in the rural setting, and the expectations placed on rural teachers. Secondly, the research aimed to investigate how rural teachers exercise their agency when integrating digital technology into their teaching practices. By examining teachers' perceptions and experiences, the study aimed to uncover the extent to which teachers felt empowered to make decisions about technology use in their classrooms. Lastly, the study aimed to identify the practical challenges and opportunities faced by rural teachers in incorporating digital technology into their teaching. This involved examining the factors influencing teachers' decision-making processes and the ways in which these factors shaped their pedagogical approaches. Overall, the research objectives were designed to provide a comprehensive understanding of DE in rural China and the role of teacher agency within this context. With these considerations in mind, this research was guided by the following research questions:

RQ 1. How is DE framed in Chinese educational policies, and what are the implications for educational practices?

- How do these policies construct the ‘problem’ of education in rural China within the discourse of DE?
- In what ways do DE policies articulate the role of rural teachers in addressing the identified educational challenges?

By addressing the RQ1, the study provided an overview of the political framing of DE in China. This involved analysing policy documents to uncover the desired outcomes of DE and the roles assigned to rural teachers, including how policies delineated their responsibilities and expectations. Additionally, by critically analysing the policies, it explored the underlying values, interests, and political contexts that shaped these ideas, offering insights into the broader narrative of DE in China. This understanding of the policy perspective was crucial as it laid the foundation for exploring how these policies were enacted and experienced in practice, linking directly to RQ2 and RQ3.

Q2. How is DE Implemented in Rural China and how do rural teachers experience and respond to DE reform in practice?

This question seeks to understand how rural teachers interpret, implement, and navigate DE policy within their everyday teaching contexts. It explores both the institutional structures that shape reform enactment and the pedagogical practices that emerge as teachers interact with digital tools. By drawing on interview data and classroom observations, the study examines whether and how teachers' digital practices align with policy expectations, and what these practices reveal about the realities of policy implementation in rural schools. Addressing this question is essential to understanding the institutional and practical conditions that frame teacher engagement with DE and provides the foundation for analysing the manifestations of teacher agency (RQ3).

RQ3: How does teacher agency manifest in the integration of digital technology within rural schools, and what factors influence it?

RQ3 examined how rural teachers perceived their ability to make independent decisions regarding the integration of digital technologies into their teaching. This question also looked at how their agency manifested, identifying the ways in which teachers adapted their teaching methods to incorporate digital tools and how this impacted student engagement. The findings from RQ1 and RQ2 provided a necessary backdrop for understanding the specific conditions under which teacher agency was exercised, linking policy expectations to practical realities.

It also addressed the real-world implications of integrating digital technology in rural classrooms by focusing on the practical challenges and facilitators experienced by teachers. This involved investigating the factors that enabled or constrained their agency. To address this, it was guided by the following sub-questions:

- How do these factors influence their decision-making processes and pedagogical approaches in integrating technology?
- How technology mediating teacher agency in the rural setting?

Each question served a specific purpose in achieving the overarching research objectives, aiming to provide a comprehensive understanding of the interplay between policy, practice, and teacher agency in the context of DE implementation in rural China. These research questions are addressed across Chapters 7, 8, and 9. Chapter 7 presents the findings from policy analysis alongside teacher interviews, highlighting the disconnect between national DE policy intentions and the realities of practice in rural schools. Chapter 8 explores the ecological contexts of two schools through classroom observations and post-class interviews, building on Chapter 7 to examine how school structures and teaching practices mediate teachers' responses to DE reforms. It also

synthesises these insights by analysing how teacher agency is expressed across different contexts and the factors shaping its enactment. While the themes often overlap, these chapters provide a comprehensive account of how rural teachers navigate digital reform in practice.

1.4 Overview of research design

This study explores how rural teachers in China engage with the ongoing digital transformation of education (DE), with particular attention to how they interpret policy, negotiate institutional conditions, and exercise agency in everyday pedagogical decisions. The research design was developed to investigate these complex processes through a combination of policy analysis, semi-structured interviews, and classroom observations, using a theoretical framework that integrates teacher agency and digital agency within an ecological model (Priestley et al., 2015; Passey et al., 2018). A detailed explanation of this framework is provided in Chapter 6.

Firstly, the research design was informed by a critical constructivist-interpretivist paradigm, rooted in the belief that knowledge is co-constructed through human interaction, and that educational realities are shaped by both systemic power structures and the experiences of individuals (Cohen et al., 2018; Schwandt, 2015). This aligns with the theoretical position that teacher agency is not simply a personal attribute, but a dynamic capacity shaped by context, culture, and history. The framework adopts a three-dimensional view of agency—iterational, practical-evaluative, and projective—emphasising how teachers' past experiences, current environments, and future aspirations interact in their engagement with DE (Priestley et al., 2015).

Secondly, the research was structured around three key methods of data collection. The first stage involved a critical analysis of national and local policy documents to examine

how digital education is framed in Chinese policy discourse, and how teachers are positioned within these frameworks. This stage was guided by Bacchi's (2009) "What's the Problem Represented to be?" approach (detailed in Chapter 6), which helped interrogate the assumptions and implications of policy language. The second stage consisted of 26 semi-structured interviews with teachers from different rural schools within the same municipality in Sichuan Province. These interviews were designed to explore teachers' lived experiences of engaging with DE, their sense of professional autonomy, and their views on the opportunities and challenges posed by policy demands and local conditions. The interview schedule was piloted and refined to ensure clarity and depth, drawing on my conceptual framework and literature on digital pedagogy and teacher professionalism.

The third component of the design included classroom observations and post-class interviews with seven teachers. These observations provided insight into how digital technologies were actually being used in teaching and learning, and how teachers' pedagogical choices reflected or resisted policy expectations. Post-class interviews enabled teachers to explain their decisions in context, offering a deeper understanding of how agency is enacted in practice. Each method contributed to a different layer of analysis: policy texts illuminated the macro-level intentions and representations; interviews revealed the meso- and micro-level experiences and judgements of teachers; and classroom observations grounded these understandings in situated practices. The data collection strategy was therefore designed not only to generate rich, contextualised evidence, but also to enable triangulation between sources and levels of analysis (Denzin, 2017).

Finally, this research followed an abductive logic of inquiry (Timmermans & Tavory, 2012), where empirical insights continually informed and reshaped theoretical

interpretations. This iterative movement between data and theory helped uncover the subtle ways in which rural teachers make sense of DE reforms. It drew attention to tensions between official expectations and local realities, highlighting the crucial role of teacher agency in determining the success or failure of digital transformation at the school level. Overall, the research design provided a robust structure for addressing the four central research questions of the study. A full discussion of the methodology and methods is presented in Chapter 6, with details of the data collection and analysis processes provided in Chapter 7.

1.5 Key Terminologies and Conceptual Clarifications

This study engages with a range of terms related to technology-supported educational reform. Clarifying these terms is essential not only for definitional accuracy, but also for understanding how they are interpreted and applied within the context of this research.

Informatisation vs. Digitalisation

While “informatisation” and “digitalisation” are often used interchangeably in existing studies (Hausberg et al., 2019; Mergel et al., 2019), their nuances capture different aspects of the transformative role of technology in education. Therefore, it is crucial to differentiate these concepts and clarify their contextual usage.

Informatisation refers to the incorporation or computerisation of information technology. This encompasses a broad spectrum of technological integration, including both software–hardware systems and electronics focused solely on hardware applications (Paulin & Gilbert, 2016). The process of informatisation, as outlined by

Heil et al. (2016), involves the comprehensive lifecycle of information—from acquisition, analysis, and storage to transformation, processing, transmission, and utilisation. Tilson et al (2010) highlight there is a similar term – “digitisation”, which refers to the technical process of converting information into digital form. 'Digitisation' usually highlights the transition from analogue to digital services and expansion of technology delivery channels (Paulin and Gilbert, 2016; Mergel, Edelmann and Haug, 2019). For example, it is storing analogue information such as pictures, movies and music in digital units. Therefore, in the educational context, informatisation can be understood as the digital representation of existing educational practices supported by technology. An example of this in action would be the use of electronic whiteboards to display educational content, moving away from traditional chalk and blackboard methods. However, this transformation does not necessarily entail a shift in teaching and learning paradigms; rather, it represents a change in the tools used for content delivery.

Regarding digitalisation, Tilson et al (2010) define it as changes in working practices that leverage digital technologies. Tilson et al’s definition aligns with Barras’ (1986, 1990) view that digitalisation can enhance efficiency, improve quality, and enable the development of entirely new or adapted services. Similarly, Gong and Ribiere (2021) note, digitalisation emphasises using technology to create benefits, utilise processes, and create a digital environment. Digitalisation in education describes a shift in the mode of teaching and learning through a new ecosystem enabled by digital technologies.

Education Informatisation (EI)

In the Chinese context, the term “Education Informatisation (jiàoyùxìnxīhuà/教育信息

化)" reflects the national strategy for integrating digital technologies into the education system. Since its formal promotion in the late 1990s, EI has primarily emphasised the expansion of infrastructure—computers, networks, and platforms--aligned with the broader policy of viewing science and technology as productive forces (since 1978) (Mu et al., 2019). EI initially represented a technical and system-driven reform agenda. For example, the early EI 1.0 phase focused heavily on equipping schools with multimedia tools to digitise existing content. The construction of comprehensive Information and Communication Technology (ICT) infrastructure was considered an essential element in promoting education. This technical approach was evidenced at the EI 1.0 in China listed in section 2.3.2.

Digital Education (DE)

To capture the broader pedagogical and cultural transformations linked to technology, this study adopts the term *Digital Education (DE)*. DE refers not only to the use of digital tools but also to the reconfiguration of teaching and learning practices, power dynamics, and knowledge construction within a digitally mediated environment (Paulin, 2018). While there is conceptual ambiguity around terms like "technology" and "digital education" (Ribeiro, 2017), from the critical lens to analysis this educational reform, the strength of DE lies in framing digital reform as inherently political, contested, and shaped by power relations (Selwyn, 2016).

Today, with the advent of EI 2.0, the Chinese government emphasis has shifted towards leveraging technologies not only as tools but as integral components of a new educational ecosystem. The term "Digitalisation (数字化/Shuzihua)" has been used

frequently in Chinese policies. Researchers such as Gu & Du (2019) note that this reflects a growing recognition of the need for a human-centered approach that integrates technology into pedagogy and curriculum, fostering students' creativity and innovation. In this study, DE is used to refer to both the policy ambition and the lived practices of technology integration, foregrounding the tensions between vision and enactment. With this understanding, this study conducts an in-depth examination of how the concept of DE is articulated within China's top-level policy documents.

Digital Educational Resources (DERs)

This also includes the term Digital Educational Resources (DERs), referring to tools designed to enhance educational quality and equity in response to the demands of the knowledge society (Peters-Burton, 2018). Broadly, DERs include digital learning materials, platforms, learning management systems, portals, and ICT-supported administrative resources (OECD, 2019). DERs are often promoted for their accessibility, scalability, and potential to personalise learning. However, their meaningful use depends on teachers' digital competence, curriculum alignment, and institutional support (Liu et al., 2021). In practice, especially in rural China, how DERs are sourced, may affect local relevance and teacher agency in content selection.

To clarify, in this study, the term "Education Informatisation (EI)" refers specifically to the policy-driven reform initiatives in China that focus on integrating technology into education. In contrast, the term "Digital Education (DE)" represents the broader ideology and practical interpretations underlying these reforms. Digital approaches are seen as a means of transforming learning environments to support those often marginalised by the education system (Boyd, 2016). Therefore, throughout this thesis,

I use Digital Education (DE) as the key term and context to interrogate how teacher agency operates in the context of digital reform.

1.6 Thesis Structure

This thesis is structured to gradually build a coherent narrative around how rural teachers in China engage with digital education reforms. It begins with my personal and academic motivations for pursuing this topic and gradually moves into the complexities of policy, practice, and teacher agency in digitally transforming rural classrooms.

Chapter 1 introduces the research journey, beginning with the personal and academic reasons behind the study. It then presents the background and rationale, clarifies the key terms used throughout the thesis, outlines the research questions, and provides an overview of the methodological approach.

Chapter 2 sets the scene by exploring the structural, cultural, and political dimensions of China's education system, particularly as they relate to rural areas. It provides a detailed account of national education reforms, policy environments, and the digitalisation agenda in Sichuan Province—where the fieldwork was conducted.

Chapter 3 engages critically with existing scholarship on digital education, teacher agency, and rural schooling in China. It examines key debates, identifies conceptual tensions, and highlights the need for a deeper understanding of how policy, context, and teacher practice intersect in rural digital reforms.

Chapter 4 presents a systematic review of international literature on teacher agency in digital contexts. The review not only maps out empirical and theoretical trends but also identifies the conceptual and methodological gaps that shaped the analytical framework of this study.

Chapter 5 explains the philosophical and methodological foundations of the research. It outlines the interpretivist and critical stance adopted, describes the qualitative methods used—including policy analysis, semi-structured interviews, and classroom observations—and reflects on ethical considerations, drawing also on insights from the pilot study.

Chapter 6 walks through the practical realities of conducting fieldwork in rural China. It discusses sampling strategies, the challenges of data collection, and the process of integrating and analysing the policy, interview, and observation data using a critical and ecological lens.

Chapter 7 focuses on how teachers interpret and respond to national digital education policies. It draws from policy analysis and interviews to highlight the tensions between official expectations and the day-to-day realities rural teachers face.

Chapter 8 details case studies and post-observation interviews. It explores how teachers make sense of and enact digital education in relation to their school cultures, professional beliefs, and institutional pressures.

Chapter 9 pulls together the findings to answer the research questions. It reflects on what the study reveals about the complex nature of teacher agency in rural digital reform, and discusses the implications for future policy, practice, and research.

Taken together, these chapters offer a layered understanding of rural teacher agency in the digital reform era, tracing how national ambitions play out in local contexts—and how teachers, in turn, shape those reforms through everyday decisions and professional judgement.

2.Context

2.1 Introduction

This chapter provides a contextual foundation for understanding the complexities of China's educational environment, with particular attention to the urban-rural divide and the nation's broader political landscape. Section 2.2 begins with an overview of China's administrative hierarchies and education system, highlighting how decentralisation and local governance have shaped the distribution of educational resources and created unique challenges, particularly in rural areas. It further explores the structural inequalities defining the urban-rural divide, emphasising their implications for equity and the quality of education. Section 2.3 transitions to the broader political environment, offering an overview of educational reforms that align with China's ambitions for digital transformation. Then, it discusses global and national initiatives, placing China's policies within the broader context of international trends and domestic priorities. It also demonstrates the policy emphasis on teachers' roles in achieving educational reforms and addressing the educational issues within the urban-rural divide. Section 2.4 introduces the research setting, Sichuan Province, as a microcosm of these broader dynamics. It illustrates the challenges and opportunities under the educational reform of digitalisation in rural areas.

2.2 Educational Structures and Cultures in China

2.2.1 Overview of the Chinese educational system

The education system in China is structured into distinct stages:

- Pre-School Education (Ages 3-5): Early childhood education introduces basic learning and social skills, providing a foundation for formal schooling.
- Compulsory Education (Ages 6-15): This nine-year education consists of six years of primary school (小学/xiaoxue) and three years of junior secondary school (初中/chuzhong). Also refer as K-12 or basic education.
- High School Education (Ages 15-18): Following compulsory education, students may progress to senior high schools (高中/gaozhong), which comprise general academic high schools (普通高中/putong gaozhong) and secondary vocational schools. This also includes vocational technical schools (中等专业学校/zhongdong zhuanye xuexiao) and vocational high schools (职业高中/zhiye gaozhong). While high school education is not mandatory, it serves as a gateway to tertiary education.
- Higher Education: This also includes general and vocational paths: colleges (大专/dazhuan) and universities (大学/daxue).

China’s compulsory education is free for all children. It was established under the 1985 Compulsory Education Law (PPC, 1986). This law aimed to ensure universal access to education, especially for students in rural areas. Compulsory education plays a critical role in China's educational system. Compulsory education is open enrolment, meaning admission does not depend on high-stakes exams. For the upper secondary to higher

education levels, examinations become critical. This is because China's educational promotion system forms a structured pathway for students to progress through different educational levels for better educational opportunities. The educational promotion system includes the high school entrance examination (中考/zhongkao), which also serves as a middle school leaving examination, the senior high school leaving examination (会考/huikao), and the National College Entrance Examination (高考/gaokao). Students who wish to attend general or vocational high schools must meet established minimum qualifications. Graduates of general or vocational high schools who wish to continue higher education must take the college entrance examination and achieve scores at or above the MoE's predetermined cutoffs (Davey et al., 2007).

Understanding how this system operates is essential to contextualising how policies, resources, and governance mechanisms influence educational practices, particularly in rural context of this research. One of the most distinctive features of the Chinese education system is the role of China's educational promotion pathways. It is a fundamental feature of its education structure, shaping students' academic journeys and determining their access to higher education. This system places significant emphasis on performance in standardised exams at various transition points, such as from primary to junior secondary school, junior secondary to high school, and high school to university. Each stage acts as a gateway, with students required to compete for limited spots in better-resourced schools or prestigious institutions. The mechanism is underpinned by a meritocratic philosophy, aiming to select and cultivate top talent for the nation's development. However, it also creates intense competition, particularly at the transition to key-point schools, which play a critical role in determining access to quality education and future opportunities. This will be discussed further in 3.3.3.

In this context, the compulsory education level holds a unique position. It bridges foundational learning and the highly competitive secondary education phase. The quality of education provided during this stage greatly influences students' academic preparedness and their ability to transition smoothly into senior high school, which can significantly affect their chances of subsequent entry into higher education. This research focuses on compulsory education, a critical stage that forms the foundation of basic education in China. Yet the system's emphasis on academic performance, combined with limited resources in rural areas, creates a high-stakes environment for rural teachers and students alike. These contexts also shape the pedagogical culture in rural schools, which will be further explored in Chapter 3's literature review. Examining how these systemic pressures manifest at the compulsory education level provides valuable insights into the broader dynamics of China's education system and its implications for reform efforts. By focusing on this critical stage, the research aims to explore how rural schools navigate these challenges and implement policies designed to improve education quality and equity.

2.2.2 Overview of the administrative hierarchies in China

China's administrative system is a hierarchical structure as shown in *figure 2-1*. Under the leadership of the State Council of the People's Republic of China, the Central People's Government is the highest authority (National level), which formulates overarching policies and national goals. Beneath it, governance is structured across five tiers of local administration: provinces (省/Shěng); municipalities (市/shì); counties (

县

/Xiàn); townships (乡/Xiāng) and the village level (村/Cūn). Within these five levels, China classifies areas below the county level as rural which includes township and village levels, areas predominantly characterised by agricultural livelihoods (National Bureau of Statistics of China, 2008). Provincial and municipal levels refine national policies to fit regional contexts, while county, township, and village levels are primarily responsible for implementation. This layered governance system directly shapes how education is managed, funded, and delivered, influencing both national strategies and local realities.

Figure 2.1. Administrative divisions of China (NBSC, 2008)

China's education system reflects the nation's broader socio-political governance structure, which has evolved over time. During the era of Mao, the system was highly centralised, aligned with the centrally planned command economy of the time. The provision, administration, and funding of basic education were solely the responsibility

of the state (Xiang et al., 2020). This approach created uniformity across the nation but limited the ability to address the local needs (Wong, 2009).

In the 1980s, decentralisation became a key feature of China's governance reforms. The Decision on Reform of the Education System issued in 1985 formalised the shift of responsibility for basic education to local governments. It stated that "basic education shall be managed locally and administered at different levels… Each province, autonomous region, and municipality shall determine how responsibilities are divided among the four levels of provincial, municipal, county, and township governance" (Chinese Communist Party Central Committee, 1985).

Under this framework, local governments became responsible for establishing schools, allocating resources, and implementing central education policies. The focus of decentralisation was on finding innovative policy instruments rather than defining policy objectives, which are critical characteristics of China's economic transformation (Heilmann, 2008). The intent was to empower regions to use innovative methods to improve education quality and address local challenges. Despite these decentralisation efforts, the state continues to assert a degree of centralized monitoring, control, and regulatory intervention in all local educational and administrative institutions (Lim & Apple, 2016).

At the core of China's education governance structure is the Ministry of Education (MoE), a constituent department of the State Council responsible for formulating national education policies, setting overarching educational goals and standards, and overseeing policy implementation throughout the multilayered administrative system.

The MoE's comprehensive mandate encompasses basic education, vocational education, higher education, and the accreditation of educational institutions and personnel. To support its broad mandate, the MoE operates through a complex internal structure. As of 2008, it has 22 internal departments and bureaus, each overseeing different areas of educational administration—including curriculum development, teacher training, higher education, and international cooperation (State Council of China, 2008). With this complex internal structure and decentralized system of governance, it creates risks of fragmented implementation and inconsistencies across regions (Tsang, 2000; Zhao et al., 2024). While national and provincial policies tend to be broad and visionary, their effective realisation depends on how they are interpreted and operationalised at the school level (Rao & Ye, 2016). The broader implications of this spatial and administrative hierarchy on policy delivery are examined in detail in Section 3.6.2. The division of power within Chinese governance has significantly influenced how policies are adopted and has posed challenges to the system's capacity to effectively address diverse issues.

2.2.3 Structure inequality: urban-rural divide

The structural issues in the urban-rural divide in China are deeply rooted in its historical and political context, shaped by the unique Chinese central-local administrative structure. Especially, during the era of the planned economy, industrialisation became the primary focus of China's social and economic development. Urban areas, serving as the main hubs for industrialisation, were prioritised for development under policies such as the First Five-Year Plan (1953–1957) and the Second Five-Year Plan (1958–1962). Rural areas became subordinate to the industrialisation of the cities, with their development pattern oriented towards urban needs. This strategy of concentrating on

the urban economy has resulted in disproportionate allocation of resources to urban areas, leaving rural areas significantly disadvantaged in infrastructure, public services, and education (Sachs et al., 2000).

Moreover, China's dualistic economic structure has intensified these imbalances, with rapid economic growth over the past three decades accompanied by severe disparities between urban and rural areas (Gao, 2021; Zhao & Tong, 2000). As outlined earlier, administrative decentralisation has placed significant financial burdens on local governments, particularly in rural regions with limited fiscal resources. This is because local finances depend heavily on agricultural tax revenues, which were insufficient due to poor tax bases in these areas. Under the tax-sharing financial system, county-level governments are required to remit 75% of value-added tax (VAT) and 100% of consumption tax to the central government, while receiving limited subsidies in return. Additionally, higher-level governments often devolved expenditure responsibilities onto county-level administrations, further straining their financial capacity (Pu, 2004).

The urban-rural divide extends beyond economic factors, affecting living standards, incomes, and access to essential amenities. For instance, in 2019, the per capita disposable income of urban residents was more than twice that of rural residents, underscoring significant income inequality (National Bureau of Statistics of China, 2020). Besides, the unique Chinese household registration system (户口/ hùkǒu) has further entrenched the urban-rural divide. This system has limited rural residents' geographic mobility and access to urban resources, perpetuating hardships and institutionalising social inequality (Rozelle & Hell, 2020).

One significant dimension is the allocation of resources and funding. As a result of decentralisation, local governments carry the main responsibility for funding public education. For example, in 2019, China's total fiscal expenditure on education was RMB 3479.694 billion, of which RMB 329.106 billion was invested locally (National Bureau of Statistics of China, 2020), with local inputs accounting for more than 90% of the total national education expenditure. Economic disparity and decentralisation gradually translated into a widening regional gap in the financial resources available to local governments. This is evident in education, where the central and provincial governments spend very little of their finances on compulsory rural education, while the county level devolves that burden to the townships and communes. As a result, the township governments, which are the weakest financially, bear the burden of developing rural education. Moreover, available financial resources are required to cover all government functions, making it particularly challenging for some local governments with limited financial resources to provide adequate public education. In such a context, rural schools, especially in less economically developed areas, have even more limited access to education funding (Wang and Tao, 2017).

China’s rapid industrialisation and urbanisation have brought about profound demographic and social transformations, particularly in rural areas. The large-scale migration of rural labourers to urban centres has significantly intensified the rural–urban divide, disrupting the social and institutional fabric that traditionally supported rural communities (Golley & Kong, 2018; Rao & Ye, 2016). A prominent consequence of this migration is the so-called ‘hollowing out’ (kongxinhua, 空心化) of rural areas—villages experiencing population decline, deterioration of public services, and erosion of local social structures (Wen et. al., 2023; Liu et al., 2010).

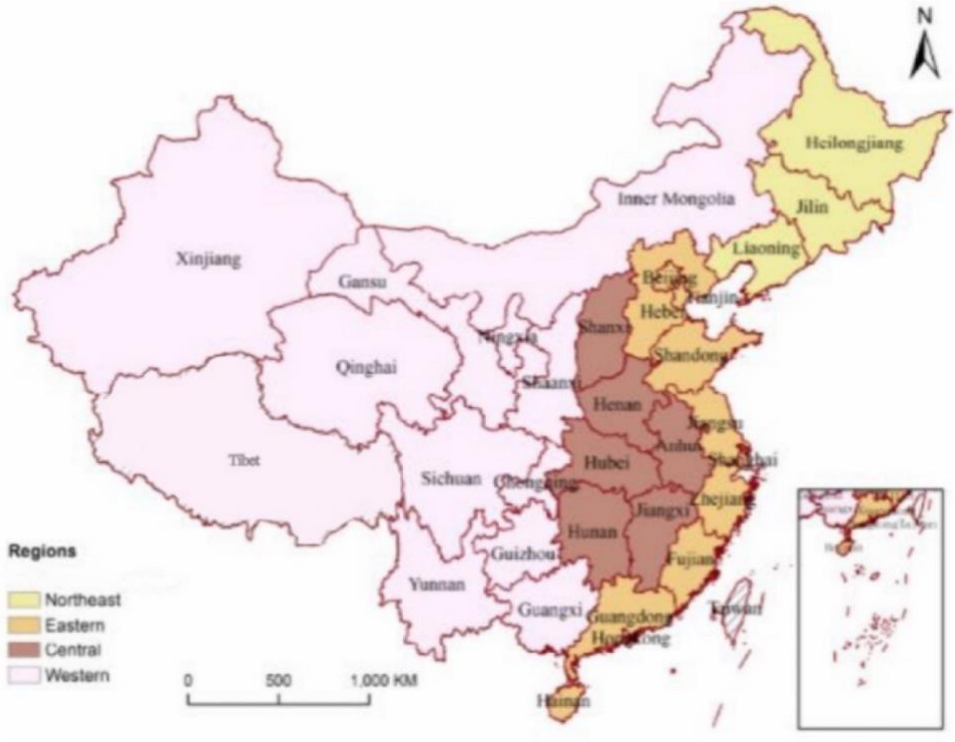
While this narrative captures prevailing trends, Ye (2018) offers a valuable counterpoint. She highlights that rural residents who remain—including women, older adults, and children—should not be viewed simply as passive victims of modernisation. Her work challenges the assumptions of total rural decline, noting that over 510 million people, 36% of China's population still living in rural areas as of 2020 (National Bureau of Statistics of China, 2021). Nonetheless, the socio-demographic shifts associated with migration have far-reaching consequences for rural education. Declining birth rates and out-migration have reduced the number of school-aged children in many rural areas, leading to smaller class sizes and, in some cases, the closure of village schools.

This restructuring has led to a growing trend of "Moving Schools into the City" (Xuexiao Jincheng, 学校进城), whereby local governments close under-enrolled rural schools and consolidate students into town or county boarding schools (Fan, 2014). Rooted in the state's philosophy of centralised schooling (The State Council of China, 2001), these policies aim to optimise resources and improve access to better facilities. However, while such policies may improve material conditions in theory, they often fail to account for the lived realities of rural families, especially the logistical burdens, social dislocation, and emotional costs of boarding education for young children. Teachers, too, are affected, as they must adapt to these structural shifts while addressing the diverse needs of increasingly stratified student populations.

These educational disparities are not limited to the urban–rural divide but are also sharply drawn along regional lines. As showing in Figure 2-2, China's economic geography is officially divided into four regions: northeast, eastern, central, and western

(National Bureau of Statistics, 2011). The eastern region, with its strong industrial base and international investment, has made significant educational advances, while the central and western regions—characterised by weaker economic foundations and more challenging natural environments—struggle to provide adequate infrastructure and public services (Chen et al., 2016).

Figure 2.2 Four economic regions in China (National Bureau of Statistics, 2011)



Within these broader macro-regions, further variation exists at provincial and district levels (Eyferth et al., 2004). In the central and western provinces where this research is located, the challenges are particularly acute. For instance, Fu and Zhang (2014) examined compulsory education reforms in two mid-western provinces and found that urban schools are under enormous expansion pressure due to migration inflows, leading

to overcrowded classrooms and overburdened teachers. At the same time, educational investment in rural areas lags behind, exacerbating inequalities in teaching quality and access to learning resources (Fan, 2014; Li & Li, 2021).

These dynamics are intensified by systemic funding disparities and the uneven social environments across regions. The fiscal dependency of local governments in the central and western regions on central subsidies limits their capacity to sustain educational reforms (Wu & Huang, 2016). As a result, the quality of rural schooling varies widely—not only between eastern and western provinces but also between urban and rural jurisdictions, and even between schools within the same locality (e.g., key schools and ordinary schools).

Meanwhile, limited by financial pressures at the county level, local education administrations tend to favour centralised rural boarding schools over retaining smallscale schools (Dong, 2022). Urbanisation in China is not solely the result of industrial development and economic advancement, but a process determined by the ownership arrangements and multiple levels of governance of the economic system (Mu et al., 2019). In other words, the decline in rural population due to urban boundary expansion does not imply that rural issues have been resolved.

Allied to these structural issues is the challenge posed by the rural-urban divide, which arises from the unequal impact of cultural, social and economic transmission and distribution. Specifically, more high-quality educational resources are concentrated in cities (Bao, 2006; Ji et al., 2017), while rural areas have faced a shortage in multiple areas, including teaching equipment and educational funding and disadvantaged

conditions (Ling et al., 2020). This issue will be further discussed in Chapter 3, as the poor conditions in rural areas impact how teachers perceive and can deploy statemandated educational reform.

Within this context, this thesis argues that rural education in China cannot be understood without accounting for its broader ecology—where policy, demography, infrastructure, and socio-cultural norms interact to shape educational experiences.

2.3 Political Environment

To fully understand China's political environment of DE reform, it is essential to situate them within the broader trajectory of China's national goals and educational reforms. The following section explores how these reforms have shaped the country's DE agenda, particularly in the context of addressing regional disparities and enhancing teaching standards.

2.3.1 Overview of China's educational reforms: addressing equality and quality

China's ambitious reform agenda positions education as a cornerstone for addressing socio-economic disparities and achieving national development goals. The landmark policy document, *Decision on Deepening Education Reform and Promoting Quality Education* (1999) marked a pivotal shift in China's education system. Aligned with this policy, China introduced the concept of 'quality education' (素质教育/suzhi jiaoyu) and initiated curriculum reform based on this concept, which emphasised the holistic development of students in moral, intellectual, physical, aesthetic, and labour domains (MoE, 1999). This policy aimed to reshape the educational system by advancing

ideology, structure, content, and pedagogical approaches to cultivate a dynamic and globally competitive society. It emphasised moving away from the traditional 'examoriented education'(应试教育/yìngshì jiàoyù) which centrally focuses on a text-based teaching approach, toward a more holistic model of education that promotes creativity, innovation, and critical thinking (Howlett, 2021; Tan & Reyes, 2016). This policy laid the groundwork for subsequent reforms aimed at aligning education with China's economic transition and the global knowledge economy.

Building on this foundation, the Decision on Basic Education Reform and Development (The Chinese State Council, 2001) outlined six priorities to further reform primary and secondary education. These included ensuring the strategic importance of basic education, addressing rural education disparities, and promoting teacher professional development (*ibid*). Compulsory education in rural areas is viewed as a critical strategy for fostering talent across sectors, which can contribute to the national economy and a modernising society (The State Council of China, 2012a). Alongside the policy of Basic Education Reform and Development, a major reform occurred with the implementation of the new curriculum standards. It emphasised a student-centered teaching approach and integrated moral and citizenship education and aimed to shift the focus of education from rote memorisation to fostering creativity, critical thinking, and comprehensive skills among students (MoE, 2001). Additionally, it placed a strong emphasis on the training and development of teachers to effectively implement these changes, ensuring that educators were equipped to meet the demands of the new curriculum.

In such a context, improving the teaching workforce was highlighted as a key strategy for achieving the aim of quality education (MoE, 2010a). Qualified teachers were

expected to play a vital role in providing academic and vocational education, supporting moral education, capacity building, and the holistic development of students prioritised in the above policy (*ibid*). Consequently, aligned with the priorities outlined in the National Development Plan (2010–2020), the policy document Opinions on Strengthening the Teacher Workforce (The Chinese State Council, 2012b) focuses specifically on the importance of teacher development in implementing these reforms. This document highlights the need to enhance teacher quality by innovating teacher management systems, fostering professional competency, and promoting teacher morality. Key measures include optimising the structure of the teaching workforce, supporting professional growth, and addressing the specific needs of rural teachers.

As China enters a globalised world, education has become a critical vehicle for human capital production (Hanushek, 2013), aligning closely with economic development goals. The MoE's (2010b) *Outline of China's National Plan for Medium and Long-term Education Reform and Development* (2010–2020) (here after referred to as National Development Plan) further reinforced these goals. This plan highlighted the need to address structural disparities, particularly the urban-rural divide, by focusing on human capital development. The slogan of "modernising education" underlines this transition, aiming to align the education system with the demands of a globalised economy and prepare students to navigate complex, technology-driven futures. The aim was to cultivate a skilled workforce capable of contributing to a modern, competitive economy (MoE, 2010b). It emphasised the allocation of resources to rural, impoverished, and remote areas as a means of addressing inequities. The government acknowledged its responsibility to ensure equal access to education and called for collective efforts from society to achieve this goal. However, many researchers acknowledged the challenges

of universalising compulsory education in rural areas (e.g., Wu, 2016; Kipnis, 2011). These issues were particularly pronounced in rural areas and continue to hinder progress.

By situating education as a cornerstone of national development, these reforms acknowledge the interconnectedness of education, economic growth, and social equity. They provide a foundation for understanding how the structural challenges outlined in the previous section intersect with the policy initiatives driving China's educational transformation. A significant aspect of Chinese educational policy is the development of special initiatives to encourage the mobility of high-caliber teachers and increase access to professional training opportunities for rural educators. Such measures aim to improve the overall quality and distribution of the teaching workforce. However, it is important not to overlook the teachers' roles-not only in what they do in their practice, but also in how their experiences are shaped by conditions, values, and perspectives.
This will be further discussed in Chapter 3.

2.3.2 Overview of the DE reform in China

China also shares the global concern regarding growing inequality in domestic education. As introduced in earlier sections of this Chapter, due to the long-standing structural issues in China, significant policy efforts have been made to tackle educational inequality, particularly in rural areas, where structural and historical disparities persist.

Promoting equality and quality of education through digitalisation is a historic strategic initiative in China. It not only aligns with global trends but also addresses the unique

socio-economic and geographical challenges present in its rural regions. As early as 1978, when science and technology were officially designated as the primary productive forces in China (Mu et al., 2019), policy-making efforts have been directed towards integrating technology into education. The formal introduction of technology for educational purposes occurred in 1989, marking the beginning of an era where the term 'Education Informatisation (EI)' (JiaoYuXinXiHua/教育信息化) became prevalent (MoE, 1989). It is generally understood that China's digital reform of education unfolds through two distinct stages, with the "19th National Congress" as the dividing line (Wu & Wu, 2018). The initial phase, termed "Education Informatisation 1.0 (EI 1.0)", was not initiated by a specific policy document, but was presented as an overall description of the first stage of China's digital reform. The Vice Minister of Education Du (2018) pointed out that the 1.0 era was the stage before 2017.

During the "EI 1.0" era, efforts were primarily focused on establishing basic Information and Communication Technology (ICT) facilities in schools. The focus on rural education within the digital reform initiative was not apparent until 2003, highlighting a potential governance gap in the "informatisation" of rural education. The initiative included significant programmes such as the "Modern Distance Education Project for Rural Primary and Secondary Schools (MDEPRS, 2003–2007)" (The State Council of China, 2004). The MDEPRS represented the largest effort aimed at improving rural education in Western China, providing schools with computers, satellite-receiving centres, and other essential technological infrastructure. Significant efforts were made in building internet connectivity and digital infrastructure in rural schools.

Transitioning from the 1.0 era, the current phase, called “EI 2.0”, was introduced by the “Education Informatisation 2.0 Action Plan” (hereinafter referred to as EI 2.0 Action Plan), announced by the MoE (2018). This plan was a new comprehensive document for China’s educational digital reform issued at the national level. It reflects a broader national strategy for embracing a digital society and economy, aligns with key strategic documents like the *National Medium and Long-Term Education Reform and Development (2010-2020)* and the *Thirteenth Five-Year Plan for the Development of the National Education* (The State Council of China, 2017). The EI 2.0 Action Plan introduced significant changes in both scope and objectives. Its primary goals included developing digital campuses, ensuring universal access to digital resources, and enhancing the digital competencies of teachers and students. Also, the MoE (2018) stated that the aim is to establish a universal digital learning environment in K-12 classrooms nationwide by 2020. This plan also emphasised the importance of transitioning from technology-driven to human-driven digital education, recognising that meaningful reform requires not only technological infrastructure but also changes in teaching practices and curriculum design (MoE, 2018).

Together, the EI 1.0 and EI 2.0 initiatives, along with China’s multi-layered governance system in education, have co-constructed the current political environment for digital transformation in Chinese education.

2.3.3 The strategies of promoting the digitalisation of education in China

To accelerate the digital transformation of education, the MoE of China has introduced a series of policies that reflect a strategic shift from improving infrastructure access (EI 1.0) to enhance integration of digital technology for education and teachers' digital competence (EI 2.0). These initiatives have progressively evolved and intensified in recent years. The foundations of this shift were laid with the *National Training Plan for Primary and Secondary School Teachers (NTP*) in 2010, which prioritised rural areas through large-scale demonstration projects and targeted training in less developed regions (MoE & MoF, 2010). These efforts were later supplemented by the 2016 Rural Teacher Training Guidelines, which encouraged local education departments to adopt a cascade model: key teachers would receive offline training and then lead school-based peer learning, while online platforms supported broader access to professional development (MoE 2016). The *13th Five-Year Plan for Education Informatisation* (MoE, 2016) parallel institutionalised digital teaching as part of school evaluation frameworks, embedding it within national quality assurance metrics. This policy marked a critical step in re-framing digital competence as a core component of educational performance.

The most pivotal shift, however, came with the launch of the EI2.0 Action Plan, highlights on the goal of "in-depth integration" (Shenru Ronghe/深入融合) of technology for education (MoE, 2018). It emerged in response to critiques that earlier reforms had focused too heavily on access and infrastructure, without sufficiently addressing actual classroom practice (characteristic of the EI 1.0 phase, see Section

2.3.2). While this slogan frequently cited in official discourse and reflects global calls for more profound pedagogical transformation (as discussed in Section 3.2), the precise meaning of "in-depth integration" in the Chinese policy context remains somewhat ambiguous. Raising questions about what such integration entails in practice. A more detailed analysis of the assumptions and tensions embedded in this discourse is provided in this study's Finding Chapter 7.

In response to the reform of EI2.0, in 2019, the *Key Points for Improving the Quality of Compulsory Education* reinforced the expectation that digital tools be used not only for access but also to enhance teaching quality and reduce regional disparities (MoE, 2019). Following this, the *National Primary and Secondary School Teachers' Information Technology Application Competence Enhancement Project 2.0 (ITAC 2.0)* was initiated to strengthen teachers' digital competence through nationally standardised training platforms and to promote greater consistency in digital curriculum integration (MoE, 2019). It built upon earlier structured guidance for integrating digital tools into everyday teaching-- *Information Technology Application Ability of Primary and Middle School Teachers (Trial)* (MoE, 2014). A key document supporting the implementation of ITAC 2.0-- the *IT Application Competence Evaluation Standards (ITACS)*. This document forms the backbone of the EI 2.0 reform and were frequently referenced or displayed in the schools I visited, as showing in Finding Chapters 7 and 8.

In line with EI 2.0's goals, the MoE revised the national curriculum standards for compulsory education in 2022. These standards mandate digital teaching from the first year of primary school, with formal IT courses introduced from Year 3 onwards (MoE, 2022). The changes reflect increasing alignment with upper-secondary curriculum

reforms, placing growing pressure on teachers to adapt their pedagogy to evolving system-wide expectations. Most recently, the 2023 policy guidance further emphasised contextualisation in implementation, advocating the principles of "one plan for each place" and "one policy for each school" (MoE, 2023). Schools are encouraged to localise national goals according to their specific conditions while remaining accountable to central targets through ongoing national and provincial monitoring. Curriculum implementation now emphasises both students' core competencies and the effective integration of digital tools.

Alongside these evolving strategies, the policymaking landscape itself has become increasingly complex. In the early stages of education informatization—between 1989 and 2000—national-level policy was predominantly formulated by the Ministry of Education (MoE). However, from 2001 to 2010, the number of participating agencies expanded significantly to include the State Council, the Central Audio-visual Education Center, and other administrative bodies. This diversification was accompanied by a rise in the volume of policy documents issued. Since 2011, this trend has intensified, with a notable increase not only in policy output but also in the number of government departments involved in digital education reform (see Chapter 7 for further analysis).

While multi-agency involvement has brought broader attention and resources to the digitalisation agenda, it has also introduced fragmentation. Each department tends to operate within its own administrative logic and policy framework, often leading to overlapping responsibilities and competing interests. This self-interest has contributed to governmental decentralisation and fragmentation (Han & Ye, 2017). Therefore, while these national strategies collectively offer a structured vision for advancing DE,

particularly by shifting the emphasis from infrastructure access to teacher capacity—their success ultimately hinges on how they are interpreted and enacted locally. These concerns underscore the need to attend not only to the content of digital education policy, but also to its implementation ecology. Understanding how policies are mediated by local actors, shaped by school-level conditions, and filtered through bureaucratic structures is essential to assessing their impact. These structural and cultural constraints are explored in greater depth in Chapter 3.

2.4 Context of The Research Setting

2.4.1 The education landscape in Sichuan province

This research is set within the broader socio-political and educational landscape of a southwestern province-Sichuan-in China. It is China's fourth most populous province and the largest provincial economy in Western China, with a GDP exceeding RMB 4 trillion in 2019 (National Bureau of Statistics of China, 2020). Despite this, its per capita GDP of RMB 55,774 places it only 18th among mainland China's 31 administrative regions, indicating that living standards are slightly below the national average. This disparity is influenced by Sichuan's large population—over 80 million residents—and its diverse geography, which creates notable economic variations within the province. Approximately 46% of Sichuan's population still resides in rural areas, highlighting the persistent rural-urban divide (National Bureau of Statistics of China, 2020).

Education in Sichuan mirrors national trends but is marked by pronounced regional differences. Due to ongoing urbanisation and a declining population in surrounding

villages, many townships in Sichuan have been administratively merged with neighbouring townships, resulting in the consolidation of schools. This restructuring has concentrated middle schools in townships and high schools in county districts, leaving only a few primary teaching points in villages (The People's Government of Sichuan Province, 2020). This trend mirrors the broader policy context, as discussed in Section 2.2.2, where urbanisation has reshaped the geographic distribution of educational institutions. Urban hubs like the provincial capital city Chengdu are home to prestigious schools and universities that benefit from concentrated government funding, advanced facilities, and a highly qualified teaching workforce. In contrast, rural schools in Sichuan face persistent challenges, including low enrolment, insufficient teaching staff, and outdated technologies.

2.4.2 Political environment in Sichuan province

The governance structure for education in Sichuan Province reflects a complex interplay of responsibilities across multiple levels of administration. It involves close collaboration between the Department of Education of Sichuan Province and other administrative and educational bodies at the municipal, county, township, and school levels. The Department of Education of Sichuan Province (DEoS), as a key department under the Provincial People's Government, operates as the primary authority responsible for shaping and guiding educational policies and informatisation efforts across the province. The bureau provides macro-level guidance and coordination for implementing national and provincial policies related to education, overseeing curriculum reforms, educational resource development, and infrastructure investments. Generally speaking, the DEoS's work is to keep the local actors' educational activities and processes aligned with national policies and goals.

At the municipal level, education departments act as the intermediary between the provincial bureau and lower levels of governance. Their responsibilities include translating provincial policies into actionable strategies, coordinating resource allocation and infrastructure development within their jurisdictions, and supervising and supporting county and township education departments in implementing informatisation projects. County-level education bureaus bear the crucial task of translating municipal strategies into actionable plans for schools. This includes overseeing resource allocation, teacher training, and the maintaince of digital infrastructure. However, the financial strain within counties in China, as highlighted in section 2.2.2, often limits their ability to fully implement initiatives, resulting in disparities between urban and rural educational outcomes. County governments in Sichuan province with a GDP below the national average are considered to be facing more challenges, which may impact the township education offices' ability in supporting local schools

The DEoS efforts to promote digital transformation have been formally aligned with the national Education Informatisation 2.0 Action Plan (EI 2.0), with a strong emphasis on the strategic goals of "three alls, two highs, and one major platform (三全两高一大/San Quan Liang Gao Yi Da)". These goals include ensuring teaching applications reach all teachers, extending learning applications to all school-age students, achieving digital campus coverage across all schools, raising the quality of educational informatisation and digital literacy, and building an integrated "Internet+ Education" platform (DEoS, 2019). To meet these objectives, the province has prioritised deepening the "three connections and two platforms" infrastructure and scaling up the "three linkages, three

integrations, and three improvements" model. These strategies aim to promote collaborative networks of teaching innovation, drive forward the integration of ICT into educational practice, and advance smart education across the province. Ultimately, they are intended to accelerate the modernisation of education through high-quality digital development.

However, despite the clarity of these goals, the on-the-ground execution is complex and highly decentralised. The implementation of each initiative often requires the collaboration of multiple departments, leading to overlapping responsibilities and coordination challenges. For example, in 2019, the province planned to connect 2,000 previously unconnected schools (including remote teaching points) to the internet. Responsibility for this initiative was distributed across the Technical Equipment Centre, the Information Promotion Office, and local education authorities at all levels (DEoS, 2019). Similarly, the achievement of the "three improvements"—including improving teaching quality through enhanced teacher competence, advancing school capacity for balanced development, and using educational development to support national education modernisation-was overseen by a wide range of departments. These departments include the Information Promotion Office, the Department of Basic Education, the Institute of Educational Sciences, the Audiovisual Education Centre, and various local administrative offices.

Within this governance structure, one body that has played a particularly specialised and strategic role is the Sichuan Provincial Education Informatisation and Big Data Centre (also referred to as the Sichuan Audiovisual Education Centre), operating under the DEoS. It is responsible for managing digital resources, maintaining provincial

digital platforms for education, and analysing educational data to inform decisionmaking. This body is also responsible for technology funding and procurement related to education. Another key actor is the Office of the Education Supervisory Committee of the Sichuan Provincial People's Government, which holds an important role in monitoring and evaluating the progress of digital education initiatives. This office collaborates with the Provincial Editorial Committee, the Provincial Development and Reform Commission, and other member units to conduct supervisory inspections across the province. These inspections focus on the implementation of the EI 2.0 plan and assess the operational conditions of rural compulsory education schools.

Overall, while Sichuan Province demonstrates a strong policy commitment to advancing digital education, the fragmented nature of governance, combined with disparities in fiscal capacity, can limit the consistent and equitable implementation of reform. This complex web of responsibilities, though designed to coordinate and decentralise innovation, often results in bureaucratic overlap, slower decision-making, and inconsistent execution—especially in rural or less-resourced regions. Understanding this political environment is therefore crucial to situating the findings of this study, particularly in analysing how teachers and schools interpret and enact digital reform at the grassroots level.

2.4.3 Digitalisation in the LY municipality

The municipality of LY, where this research was conducted, reflects broader structural challenges facing the implementation of digital education reform across rural China. While local authorities have made visible efforts to improve digital infrastructure, the political and economic context reveals uneven development and persistent inequalities.

For example, the total investment in primary and secondary school educational equipment in LY reached 274.64 million yuan in 2013, followed by an additional 41.5 million yuan in standardising educational equipment and 73.9 million yuan allocated for educational informatization in the first half of 2014 (Sheng, 2014). These figures highlight a significant municipal-level commitment to improving educational infrastructure. However, funding responsibilities largely fall on county governments, as municipal contributions are limited to initial financial arrangements, such as the 7 million yuan allocated for establishing municipal platforms and systems like 'two platforms' and 'three passes and two platforms' for municipal schools directly under its jurisdiction.

Despite these investments, disparities persist across LY's rural schools, as the digitalisation progress is unevenly affected by regional economic development. At the county level, governments have established funding mechanisms to support education informatisation, including a blend of government policy support, enterprise investments, and sustained school usage. Significant investments have been made in educational equipment and informatisation infrastructure. However, as the Sichuan province government reports, rural schools continue to face challenges such as outdated equipment, insufficient funding, and a lack of skilled personnel to manage digital resources (People's Government of Sichuan Province, 2020). These gaps underscore the reliance on local authorities and schools to shoulder financial and operational responsibilities, often with limited resources, resulting in stark inequalities within the same municipality.

To address these challenges, the provincial government has called for the coordinated engagement of the Finance Department, encouraging regions to pool central and provincial funds and increase local investment in education informatisation. Current policy promotes a hybrid funding model where government support is complemented by enterprise partnerships and strategic collaboration with telecommunications providers (The People‘s Government of Sichuan Province, 2019). However, the actual distribution and application of initiatives—such as broadband connectivity and multimedia classrooms—remain inconsistent, and rural schools often lag behind urban schools in infrastructure, digital access, and instructional quality.

Many rural schools depend on external digital content sourced from urban schools to meet educational standards. Although this approach helps bridge some resource gaps, it often imposes financial burdens on rural families and fails to address the need for curriculum localisation and teacher capacity building (Tian et al., 2021). Furthermore, the reliance on external resources underscores the disparities in educational opportunities and highlights the systemic challenges of achieving equity in a rapidly urbanising province.

In line with national directives under the Education Informatisation 2.0 Action Plan, LY has introduced several targeted strategies to promote digital reform. These include developing locally authored IT textbooks for primary and secondary schools, introducing IT proficiency assessments. Especially at the senior secondary level and piloting city-level assessments for junior secondary students. However, unlike provinces such as Zhejiang, information technology has not yet been incorporated into LY’s Gaokao system. Additionally, digital education indicators have been integrated

into provincial government performance evaluations, requiring local authorities to demonstrate active support for informatisation. To promote digital excellence, LY has designated ten primary and ten secondary schools to deliver daily live-streamed lessons, fostering a province-wide network of high-quality classroom sharing. The province has also established alliances between top-performing and under-resourced schools, including those in remote or minority areas. Further initiatives include the development of smart education demonstration zones, evaluations of network learning spaces, and the creation of exemplar digital classrooms (DEoS, 2019, 2021).

Additionally, LY has intensified the competition-based culture of digital education reform. Programmes such as One Teacher, One Quality Lesson and One Lesson, One Excellent Teacher encourage teachers to participate in public lesson demonstrations and lesson-sharing competitions. In 2021 alone, 600 lesson cases were submitted for national-level review. The municipality has also initiated large-scale digital education activities, including IT-integrated teaching exhibitions, student-made computer contests, and vocational college digital teaching competitions, aiming to boost student and teacher digital literacy through diverse and innovative formats (DEoS, 2021).

While these initiatives reflect an ambitious and structured response to national digital education goals, they also expose deeper systemic tensions. The emphasis on competition, performance, and demonstration may promote surface-level engagement with digital tools, prioritising visibility and standardisation over meaningful integration into classroom practice. Rural schools, in particular, may struggle to meet these performative demands due to persistent capacity gaps. The lack of sustained investment,

inadequate teacher training, and fragmented implementation responsibilities raise questions about the equity and sustainability of such reforms.

Furthermore, the practice of showcasing digital excellence through selected model schools risks masking the unevenness of reform across the wider system. While "demonstration zones" and competition-based development may stimulate innovation among some, they risk leaving under-resourced schools behind, especially when not accompanied by systemic support or contextual adaptation. As such, the implementation of digital education reform in LY illustrates not only progress but also the ongoing tension between top-down policy ambition and local-level realities—a theme that emerges strongly in the empirical findings of this study.

2.5 Summary

This chapter has established the critical contextual elements necessary to frame the study of rural teachers' teaching practices in the context of China's educational reform of digitalisation. It outlined how China's administrative and educational structures shape the implementation of education policies and highlighted the persistent challenges posed by the urban-rural divide. These structural complexities in governing and funding allocation have a particular impact on Chinese schooling and students' experiences as they move through China's structured educational promotion system. The disparities in resources, infrastructure, and opportunities between urban and rural schools illustrate the complexity of ensuring equitable education in such a diverse and stratified system.

The discussion on China's political environment illustrated how global digital reform trends influence national policies and how curriculum and teacher development

initiatives aim to modernise education and bridge the urban-rural gap. The integration of digital tools and innovative practices represents a pivotal shift, yet challenges remain, particularly in equipping rural teachers with the necessary skills and support. While education policies are designed at the national level, their success hinges on how well local governments and schools adapt them to their specific contexts. This contextual understanding sets the stage for the subsequent chapters, which delve deeper into the policy analysis, theoretical framing, and empirical investigation of how rural teachers navigate, resist, or embrace the demands of educational reforms within China's education ecosystem.

3. Literature Review

3.1 Introduction

To establish a comparative and contextual foundation, this chapter explores global perspectives on DE. These international comparisons help to identify both universal challenges (such as digital competence gaps and assessment-driven constraints) and context-specific barriers. It then reviews the existing literature on teacher agency in education, providing an overview of its conceptual foundations and its significance in framing this study. Following this, the chapter narrows to critically examine the sociocultural and political structures shaping China's education landscape. Finally, it explores how these structural and cultural factors shape teaching practices in rural China, providing insights into how and why rural teachers engage with educational reform in specific ways. By integrating these discussions, this chapter identifies gaps in the existing literature, informing the study's exploration of how rural teachers

navigate, adapt to, and resist digital reform within the constraints of their professional environments.

3.2 DE Trends Globally

Over the past two decades, digital education (DE) has emerged as a prominent global policy agenda, seen as a vehicle for both pedagogical innovation and economic competitiveness. Across diverse contexts, governments and international bodies have promoted DE as a transformative force—enabling new teaching practices, addressing educational disparities, and preparing learners for future labour markets shaped by technology and globalisation. This section explores key global trends in DE and their implications for teaching practices. It is divided into three parts. Section 3.2.1 examines how digital technologies have reshaped teaching, identifying both opportunities and limitations. Section 3.2.2 moves beyond the instrumental use of tools to frame DE as a socio-cultural and pedagogical practice. Finally, Section 3.2.3 considers the barriers that hinder meaningful DE implementation. The global DE trends discuss below helps this study to situate the focused practitioners within the broader evolution of DE theory and practice.

3.2.1 The role of digital technologies in teaching practices: trends, challenges, and opportunities

The application of technology in education has been a longstanding topic of debate. One of the earliest and most notable discussions centred around the influence of media on educational outcomes (Clark, 1983, 1994; Kozma, 1994). Clark (1983) argued that media technology, as a teaching medium, does not inherently affect teaching results. He also criticised various comparative studies of educational media as being futile. In

contrast, Kozma (1994) highlighted that the interaction between media and pedagogy plays a crucial role in shaping learning experiences. These foundational debates, while rooted in early media studies, continue to inform contemporary thinking about DE and its role in changing education.

Today, the widespread adoption of mobile technologies, online platforms, and artificial intelligence (AI) has expanded learning opportunities beyond traditional classroom settings. Mobile technologies, for example, enable remote learners to participate in realtime learning experiences and collaborate with peers and instructors regardless of location (Timotheou et al., 2023). Furthermore, Cloete (2017) highlights that the integration of technology enhances the quality of education by making it more accessible, flexible, and adaptable to diverse learning contexts. In the Chinese context, researchers such as Wang et al (2019) have suggested digital educational resources provide educators with the opportunity to access high-quality learning materials in underserved areas. The technologies are widely regarded as a potential “solution” to educational inequality. Although these technologies were not invented for education, they can be appropriated for it because researchers have observed their capacity to improve educational access, foster student achievement, and create meaningful learning experiences (Barbour & Reeves, 2009; Hennessy et al., 2005; Mattar, 2018).

These shifts are evident not only in curriculum design and lesson planning but also in how teachers understand their roles and engage with students. Traditionally, the teachercentred approach rooted in behaviourist theory, where the teacher acts as the main authority responsible for delivering content and assessing learning (Ertmer & Newby, 2013; Scheurs & Dumbraveanu, 2014; Serin, 2018). In such models, learning

was largely seen as a stimulus-response process, with limited attention to students' prior knowledge or autonomy in constructing meaning. However, since the early 20th century, education reforms have increasingly embraced constructivist and student-centred pedagogies that challenge the rigid hierarchies of behaviourist models (Tabulawa, 2003). Constructivism, broadly understood, proposes that knowledge is actively constructed by learners who build upon prior knowledge, engage in critical reflection, and co-construct meaning through interaction with content and context (Brooks & Brooks, 1999). Unlike behaviourism, which emphasises repetition and control, constructivist approaches advocate for autonomy, independent thinking, and deeper engagement with learning tasks (Struyven et al., 2010). These theoretical and practical foundations of constructivist pedagogy have become increasingly relevant in the digital age, where technologies have enabled new forms of interactive, personalised, and autonomous learning (Fahnoe & Mishra, 2013; Mattar, 2018). These global trends are particularly relevant to the Chinese context, where educational reforms have increasingly absorbed foreign pedagogical ideas, including constructivism and studentcentred learning, as discussed further in Section 3.5.2.

Researchers suggest that digital tools offer significant opportunities to realise these constructivist ideals. For instance, structured approaches to game-based learning, such as pre-game preparation, gameplay, and post-game reflection, encourage active student participation and promote a shift towards student-centred pedagogies (Hawlitschek & Joeckel, 2017; Li et al., 2024). Meanwhile, digital assessment tools offer immediate feedback and facilitate precise evaluation of key skills such as creativity, communication, and problem-solving (Spector et al., 2016), helping teachers create adaptive learning environments that respond to students' needs.

However, mere integration of technology does not always align with align with constructivist practices (Orlando, 2013), and some (Aflalo et al., 2018; Glover & Miller, 2006) found that technologies—such as interactive whiteboards—are often adopted without meaningful pedagogical change. A growing body of literature highlights teachers' reliance on internet-based tools to prepare lessons, especially among preservice and early-career teachers who report insufficient institutional support (Sawyer & Myers, 2018). Many turn to ready-made materials found online to supplement or replace formal guidance, valuing the speed and convenience offered by these platforms.

For example, a large-scale study in Chile involving 6,932 teachers found that over 90% regularly used the internet to prepare visually engaging resources such as presentations and worksheets (Ibieta et al., 2017). Similarly, Korean teachers frequently adopt thirdparty digital content to enrich classroom delivery (Shin, 2015).

While these practices reflect the practical advantages of digital tools, such as time efficiency, accessibility, and convenience, they also raise critical concerns about the quality, pedagogical coherence, and contextual appropriateness of such materials. Teachers often assume that the popularity of online content equates to its educational value, yet few engage in rigorous evaluation of these materials (Sawyer & Myers, 2018). The absence of official guidelines for assessing digital content leaves teachers to make independent judgments, which can lead to inconsistent quality and over-reliance on unverified resources (van Deursen & van Diepen, 2013). This uncritical use of digital resources risks producing standardised lessons that fail to meet the diverse needs of learners, reducing opportunities for creative and innovative teaching (Ibieta et al., 2017).

Moreover, these challenges extend to students. Research indicates that students often prioritise quick answers over deeper inquiry when using online resources, fostering a culture of 'copy-and-paste' learning and limiting the development of critical thinking skills (Chang et al., 2015; Dias & Bastos, 2014; Rasul et al., 2023). The quality of teachers' chosen materials and their digital competence in supporting students to engage meaningfully with digital content directly affect student performance and develop essential digital literacy skills (OECD, 2015; Spendlove, 2017; The World Bank, 2005). However, the lack of confidence in digital competence among some teachers may limit their capacity to explore innovative resources and restricts them to traditional materials such as textbooks. This lack of confidence, as Comi et al. (2017) argue, highlights how the effectiveness of ICT integration depends on teachers' ability to adopt these tools meaningfully in their teaching processes. These challenges underscore the importance of teacher training programmes that prioritise digital literacy. Equipping teachers with the skills to critically assess and select appropriate digital resources are believed world wild as essential for fostering effective teaching practices.

However, the practical use of technology in classrooms cannot be separated from the broader visions and expectations embedded in global and national education policies. Increasingly, digital education is not only seen as a pedagogical tool but also as a strategic response to global economic, social, and political shifts. Understanding how these wider agendas shape the adoption and interpretation of digital technologies in education is essential for grasping both the promise and the limitations of DE. The next section therefore turns to these policy imaginaries, examining how DE is framed at a global level, and how such framings influence classroom practice in the section after.

3.2.2 Global policy agendas regarding DE

The push for the development of digital education is mainly from the government-led policy initiatives and is considered a critical component of educational reform. Many countries have embraced digital technology in education, seeing it as a vital mechanism to adapt to the demands of a globalised economy. Investments in broadband infrastructure, digital literacy initiatives, and frameworks for competency development reflect global efforts to integrate technology into education systems. For example, the United States emphasises equitable access through initiatives such as the education law of *Every Student Succeeds Act* (ESSA, 2025), which supports the use of digital tools to improve educational outcomes in diverse settings. In Europe, the European Commission's *Digital Education Action Pla*n aims to foster digital transformation by supporting member states in integrating technology into their education systems. This initiative promotes innovation in teaching and lifelong learning while addressing digital literacy and inclusion (European Commission, 2018; 2021). The Asia-Pacific region also demonstrates leadership in digital education reforms. For instance, Singapore has launched the "Transforming Education through Technology" masterplan 2030 with the vision of "Technology-transformed learning, to prepare students for a technology transformed world" (SG Ministry of Education, 2023).

These comprehensive policy initiatives reflect global trends in promoting the transformation of education for a future digital society. As digital skills are increasingly seen as critical for workforce readiness, particularly in rapidly evolving industries such as artificial intelligence and data science (Cantú-Ortiz et al., 2020; Goulart et al., 2022; UNESCO, 2021). Thus, technology for education is believed aligned with the goal of

developing economy, globalisation, and the next generation's job preparation under the digital transformation (Fullan & Langworthy, 2014). While many policies assume that technology will drive pedagogical change, yet research indicates that teachers are the true agents of transformation (Albion & Tondeur, 2018; Voogt et al., 2018). Yet integrating technology into education is not a straightforward process. The actual impact depends on how effectively technology is embedded into teaching practices. This will be further discussed in next section.

Various forms of professional standards for teachers are being considered, developed, and implemented in different countries. Countries such as Australia (AITSL, 2011), the United Kingdom (DfE, 2016), and the United States (U.S. Department of Education, 2012) have introduced frameworks to ensure that teachers are equipped with the knowledge, skills, and professional dispositions needed to integrate technology effectively. International organisations have also addressed this subject and have constructed frameworks to guide teacher professional development. UNESCO, for example, has created the "Global Framework of Professional Teaching Standards" to enhance teaching professionalism (Edwards and Giannini, 2019). These frameworks reflect an increasingly structured approach to teacher development, reinforcing the idea that successful digital transformation requires investment in teachers as much as in technology.

In the global political environment, DE is framed as a solution to educational inequality, economic competitiveness, and workforce development. Within such environment, DE policies position technological advancement as integral to societal progress by bridging educational divides (Rahm, 2023), reflecting Jasanoff & Kim's (2013) concept of

sociotechnical imaginaries. Sociotechnical imaginaries are defined as "collectively held, institutionally stabilised, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology" (Jasanoff & Kim, 2015, p.4). These Imaginaries shape expectations about how digital technologies should be integrated into education, given their central role in broader societal visions. However, when these global trends are implemented at national and local levels, they take on distinct forms, shaped by unique political, economic, and social contexts. The global view on the role of digital technology in improving teaching quality, promoting equity, and preparing learners for the demands of the digital age is similarly evident in China's digital policies. This was discussed in Section 2.3.

While these global strategies acknowledge the critical role of teachers, they often remain focusing on technology access and usage rather than how digital tools are embedded in classroom practice. To understand the true potential and limitations of digital education, it is essential to move beyond questions of access and efficiency and consider how technology interacts with pedagogy, professional identity, and cultural values. The next section explores this shift from literature by rethinking DE as a deeply situated pedagogical and socio-cultural practice.

3.2.3 Beyond tools: rethinking digital education as a pedagogical and cultural practice

While digital technologies have become increasingly embedded in educational environments, their presence alone does not automatically produce meaningful pedagogical transformation. The promise of DE extends beyond the mere introduction

of devices into classrooms, yet in practice, the integration of technology often fails to transcend traditional teacher-centred approaches. Instead of fostering student-centred, inquiry-based learning experiences, technology is frequently used to reinforce didactic teaching models (Cuban et al., 2001; Er & Kim, 2017). This limited use undermines the more radical possibilities that digital tools offer for reconfiguring knowledge construction, learner agency, and classroom dynamics.

This persistent gap between technological potential and pedagogical practice reflects a deeper concern within the literature—namely, the dominance of an instrumentalist logic in digital education (Selwyn, 2010; Perrotta, 2017). In this framing, DE is too often treated as a rational, linear process: one where technology is introduced with the assumption that it will naturally lead to improved outcomes. As Perrotta (2013, 2017) argues, this rationalist perspective underpins many policy and research narratives, treating teachers as passive adopters who will integrate digital tools once barriers such as training, and infrastructure are removed. However, such an assumption overlooks the complex, socially situated nature of teaching practices and fails to account for the diverse cultural, emotional, and political factors that shape educators' decisions in realworld classrooms.

This view of technology-as-solution is also evident in models such as the Technology Acceptance Model (teacher agency M) (Davis, 1989), which positions teacher technology used primarily as a function of perceived usefulness and ease of use. While these models have predictive power, they often flatten the nuanced realities of school life, where institutional constraints, professional identities, and emotional labour all influence practice (Perrotta, 2017; Selwyn, 2011). As Savin-Baden (2015) notes, the

allure of digital tethering—relying on screens and connectivity—may not improve learning in itself but instead risks generating superficial engagement with knowledge, divorced from deep pedagogical aims. This critique resonates with a broader rejection of technological determinism: the belief that innovation flows directly from the introduction of new tools, without regard for context, values, or culture.

Conversely, when used critically and purposefully, digital technologies can catalyse new ways of thinking, teaching, and learning. Scholars (Beetham & Sharpe, 2019; Jenkins, 2006; Laurillard, 2002) advocate for a shift in focus from tools to pedagogical design. Their work suggests that DE should not be measured by the number of devices in a classroom, but by the extent to which these technologies enable active knowledge construction, learner collaboration, and authentic engagement. In this sense, digital pedagogy becomes more than an operational strategy; it is a relational and reflexive practice that redefines the roles of teachers and students in co-creating learning (Garrison, 2015).

This view positions teachers not as neutral implementers of DE, but as key agents whose choices and values determine whether digital tools are used for transformation or reproduction. For DE to fulfil its potential, teachers must be supported to move beyond content delivery and toward the intentional design of experiences that foster learner agency, interaction, and autonomy (Archambault et al., 2022; Lier, 2007; O'Brien & Reale, 2021). This requires the cultivation of digital pedagogical competence—an ability to merge content knowledge, pedagogy, and technology in context-specific ways (Fahnoe & Mishra, 2013).

Importantly, this competence is not static. Selwyn (2013) and Kozma (2011) stress the need for ongoing professional development, reflective practice, and institutional support to ensure that teachers can integrate digital tools in ways that align with their evolving pedagogical beliefs. As Lewin and McNicol (2014) found in their study of European secondary schools, many teachers held a positive abstract view of DE, yet remained uncertain about how to meaningfully integrate technology into specific subject knowledge and classroom activities. This points to a fundamental disconnection: while educators may value the idea of DE, the actualisation of that vision is shaped by wider systemic and cultural forces, including assessment pressures, rigid curricula, and limited autonomy.

From this perspective, DE cannot be isolated from the broader educational structures in which it operates. In short, DE is a relational, socio-cultural practice—one that involves constant negotiation between external demands and internal values. As the literature increasingly shows, simply placing technology in the hands of teachers does not guarantee pedagogical innovation (Facer, 2009, 2011; Perrotta, 2017). Here, it is important to note that effective DE is not solely about access to digital tools or even competence in using them, but about the ability of teachers to critically evaluate, adapt, and reimagine their practices within complex institutional and policy landscapes. It is therefore essential to examine the barriers that influence DE. The next section explores the barriers to meaningful DE integration.

3.2.4 Barriers to the implementation of DE

To explore teacher meaningful integration of digital technology more fully, we should not overlook the challenges faced by teachers when integrating technology into

classroom practices. Schoepp (2005) describes these challenges as "barriers"—conditions that impede progress and prevent educational technology from achieving its intended impact. Studies have classified different barriers that hinder the implementation of DE. This section discusses three barriers drawn from Balanskat et al. (2006) and Bingimlas' (2009) review of barriers to the successful integration of technology in education. They are categorised into three levels: teacher level, school level, and system level. These studies offer an international perspective that is particularly relevant to this research for understanding the challenges in DE implementation.

At the teacher level, a key barrier is teachers' ability to effectively use technology. While Kress (2005) argued that all media-based communication still ultimately relies on writing and language, such a view overlooks the complexity of contemporary digital environments. For example, writing alone cannot decode the credibility of a photoshopped image or help users navigate algorithmically generated video content. In response to this, Buckingham (2007) urged a reconceptualisation of literacy that accounts for the cognitive and ethical demands of engaging with multimedia content. Digital competence is a recurring theme in the literature. It refers to the technical and cognitive abilities required to use digital tools effectively for teaching and learning (Asselin & Lee, 2002; Zhao et al., 2021). Teachers' ability to manage digital resources, integrate online content, and adapt tools for pedagogical purposes is widely recognised as a foundation for meaningful digital practice (Beetham & Sharpe, 2019). Information literacy, in this sense, becomes more than a functional skill—it is about developing critical engagement and the ability to transform information into actionable knowledge (Hepworth & Walton, 2009).

Closely tied to competence is the notion of confidence in digital engagement. Teachers' self-efficacy—their belief in their capacity to use digital technologies successfully—shapes their willingness to experiment, adapt, and innovate (Passey et al., 2018; Andyani et al., 2020). However, high expectations for digital integration can also generate technostress, particularly in under-resourced settings. Technostress arises when teachers are required to use digital tools without adequate support, leading to anxiety, resistance, or superficial compliance (Panisoara et al., 2020; Özgür, 2020). Both Balanskat et al (2006) and Bingimlas (2009) found that teachers hesitate to incorporate technology due to lack of confidence, represents as fear of failure, unfamiliarity with technology, or concerns about losing authority in classroom. This insecurity often stems from limited ICT training and a fear of failure (Beggs, 2000), leading to hesitancy in adopting digital tools for classroom instruction. Similarly, teachers' competence in using ICT remains a critical issue. While some educators have basic technological skills, they often struggle to incorporate digital tools into pedagogically meaningful activities (Bingimlas, 2009). Studies suggest this is often because ICT training focuses on technical skills rather than pedagogical application, leaving teachers uncertain about how to align technology with their subject content and teaching methods (Tusiime et al., 2022; Nii Akai Nettey et al., 2024).

Another persistent barrier is resistance to change. Bingimlas (2009) highlights that when teachers do not feel ownership over digital tools, they are less likely to integrate them effectively into their teaching, particularly if they do not see clear benefits or lack institutional support for innovation. Resistance is not necessarily outright rejection; rather, it often reflects deeper concerns about workload, unfamiliarity, and limited

professional autonomy in decision-making (Schoepp, 2005). Teachers who are not given adequate time to explore, experiment with, and refine ICT-based teaching strategies are less likely to integrate technology effectively (Balanskat et al., 2006). Nii Akai Nettey et al. (2024) suggest that teachers should have a say in selecting ICT tools that align with their teaching methods. This reinforces findings by Johnson et al. (2016), who argue that a lack of flexibility in tool selection can make educators feel restricted and disengaged. However, resistance may not simply demonstrate a lack of ICT skills or a negative attitude, but can be an agentic response to misaligned reforms (Schulte, 2019). Rather than viewing resistance as an obstacle, it should be understood as part of how teachers negotiate and adapt to change within their specific educational contexts. We can see this in later sections where rural teachers' response to educational reforms in Chinese context are explored.

At the school level, a lack of access to resources continues to be a significant barrier, particularly in under-resourced schools. Even when technology is available, issues such as insufficient computers, poor internet connectivity, outdated software, and inadequate maintenance hinder effective use (Pelgrum, 2001). Moreover, a lack of technical support means that teachers often face equipment failures and software issues without immediate assistance, discouraging them from incorporating ICT into lessons (Bingimlas, 2009). Time constraints further exacerbate these challenges; many teachers struggle to find sufficient time to plan and implement digital activities, particularly within rigid school schedules (Ertmer et al., 2009). These barriers are particularly common in rural schools (Danao et al., 2025).

Beyond the school environment, system-level barriers—those embedded within wider educational policies and governance structures—play a critical role in shaping how digital education is implemented (Balanskat et al., 2006). Researchers such as Tusiime et al. (2022) found that without clear ICT policies at the institutional level, teachers may lack direction on how to effectively incorporate technology into their pedagogy. This aligns with Bingimlas (2009), who stresses that ICT integration must be supported by structured policies and long-term strategic planning. The resource access barrier discussed earlier also reflects systemic funding gaps as a key challenge preventing equitable ICT access.

Taken together, understanding how teachers engage with DE reform requires attention to more than just access or skill acquisition. It involves recognising how teachers' confidence, beliefs, and perceived responsibilities intersect with structural constraints and cultural norms. These insights underpin the rationale for introducing the concept of digital agency in Chapter 5, which synthesises these competencies into a broader understanding of how teachers actively and reflexively engage with digital technologies in their professional lives.

3.3 The Statue Quo of DE Reform in Rural China

In the Chinese context, the integration of digital tools into teaching practices reflects a similar trend globally but is also shaped by its specific social-politic. However, despite the policy emphasis on digital transformation, evidence suggests that these reforms often encounter structural, pedagogical, and institutional constraints—particularly in rural contexts where access to resources, teacher training, and pedagogical shifts remain

limited. This section synthesises research on teachers' engagement with digital reforms and the challenges they face, identifying key gaps that inform this study.

3.3.1 From policy vision to reform implementation: structural and systemic challenges

As discussed in Chapter 2, China has a long history of positioning DE as a key mechanism for modernising teaching practices, improving learning outcomes, and addressing educational inequalities between urban and rural areas. National strategies such as the Modern Distance Education Project for the Western Rural Middle and Elementary Schools (MDEPRS) (MOE, 2002; 2011) and the Smart Education China initiative (MOE, 2021) have aimed to expand digital infrastructure and access in underserved areas. These policies reflect a broader vision of leveraging technology to enhance equity and quality in education.

At a surface level, these efforts have made significant progress. By 2019, for instance, over 95% of primary and secondary schools in China had internet access (MoE, 2019), laying a foundation for digital learning even in remote regions. However, empirical research has highlighted a critical gap between access to digital tools and their effective pedagogical use. A historical example is MDEPRS (2003–2007), which aimed to bridge the urban-rural education gap by focusing on technological infrastructure, such as computer classrooms, CD/DVD-based educational resources, and satellite-receiving centres (MoE, 2002). While these efforts provided a foundation for digital access, they failed to bring about pedagogical transformation. As Yu and Wang (2006) point out, early DE initiatives in China were largely technology-centric, prioritising infrastructure over deeper shifts in teaching and learning practices. The assumption that technology

alone would drive educational change reflects an instrumentalist view—one that risks transferring traditional classroom practices into a digital format without fundamentally changing the nature of learning.

Moreover, researchers consistently highlight that a gap persists between the intent of these policies and their implementation on the ground. This is possibly because China's centralized governance structure plays a role in shaping how digital education is enacted at the school level. As will be discussed in section 3.6, China's policy environment is highly top-down, meaning that national directives shape local practices in rigid ways, leaving little room for teacher autonomy in digital pedagogy. This governance model, which prioritises policy compliance over grassroots innovation, further restricts teachers' ability to experiment with student-centred digital practices. Thus, the challenge is not just about providing digital tools but about how teachers interpret, negotiate, and enact DE policies in their own contexts.

For example, Wang (2013) examined differences in computer use between rural and urban students and found that while the access gap had narrowed, there remained a significant divide in how technology was used. In urban schools, students engaged with digital tools for a range of subjects, using them for interactive and inquiry-based learning. By contrast, in rural schools, computer use was largely restricted to basic skills training, with little emphasis on integrating technology into broader subject areas. Similarly, Ji et al (2017) found that rural schools not only lacked high-quality ICT infrastructure but also suffered from a shortage of digitally competent teachers, further limiting the integration of digital technologies into teaching and learning. The challenge, therefore, is not merely providing digital tools but understanding how teachers negotiate

policy expectations, institutional constraints, and their professional agency in enacting DE reforms.

The challenge of translating policy into practice is further reflected in Zhang & Yang's (2019) study, which analysed digital education policy diffusion in rural areas. They used Co-word analysis to evaluate data of digital policies in rural areas from 1992 to 2018, drawing on data from Beida Fabao, a sophisticated legal information retrieval system in China. The study highlights how policy influence is concentrated in central agencies and primarily benefits economically developed eastern provinces. These regions, with stronger infrastructure and human capital, are able to respond more effectively to national policies, whereas rural schools—particularly in central and western China—face persistent delays in DE implementation due to limited resources and inadequate local governance structures (Zhang & Yang, 2019). This pattern suggests that policy diffusion in DE follows existing economic and administrative hierarchies, reinforcing rather than addressing educational inequalities.

As introduced in 2.3, China has renewed its national DE strategy to shift from a technology-driven approach to an innovation-driven model. Policies such as Education Informatisation 2.0 (EI 2.0) emphasise not just digital access, but the integration of technology into pedagogical practices to foster more student-centred learning (Chen et al., 2023). This aligns with global trends discussed earlier in Section 3.2, where many countries are moving beyond digital infrastructure expansion toward pedagogically meaningful digital education.

Despite this shift in policy discourse, research shows that rural schools face many challenges when trying to implement digital policy to practice. Many struggle with digital pedagogy due to a lack of clear guidance and learning opportunities, which reflects a political challenge (Wang et al., 2022). At the same time, poor infrastructure and limited digital content present technical challenges (Sun et al., 2024). Besides, gaps in teacher training and a lack of technical support highlight the human challenges involved (Zhao, 2024). The policy-practice gap is not unique to China. Internationally, similar challenges have been observed. The One Laptop per Child (OLPC) program in Peru, for instance, significantly increased computer access in rural schools but failed to improve learning outcomes in mathematics and literacy (Cristia et al., 2017). Such cases highlight that simply providing technology is not enough. Without teacher support, professional development, and curriculum alignment, technology adoption remains surface-level (Myers, 1992). Like other nations, China is grappling with how to translate ambitious DE policies into equitable practice in classrooms, reminding us that policy learning across borders is valuable for tackling these shared issues.

Another critical theme in existing literature is the contradiction at the heart of Chinese DE policy. Li & Christophe (2024) critically examined how Chinese educational policies construct teacher subjectivities in the digital age, arguing that while teachers are positioned as key agents of digital reform, they are also framed as subjects requiring strict supervision and retraining. This dual positioning leads to conflicting expectations—teachers are encouraged to adopt digital pedagogies autonomously yet are simultaneously subjected to rigid assessment frameworks that limit their professional discretion. Their work provides a crucial lens to inform this research on

how DE policies can be examined, particularly in understanding how DE is framed and how rural teachers are positioned in policy discourses. The way DE is framed in policy documents influences how teachers act in teaching practices (Priestley et al., 2015). In other words, if teachers feel empowered and supported, they are more likely to engage deeply with digital innovation. However, if they experience reform as externally imposed, they may comply superficially, or resist change altogether.

One major challenge in education reform is clarity, specifically, how well teachers understand the goals, principles, and expected practices of a reform. Fullan (2015) stresses the importance of clarity in reform messages, particularly in relation to policy coherence, leadership, and teachers' professional learning. Without this clarity, reform risks becoming misinterpreted, inconsistently enacted, or even rejected. As Gouëdard et al. (2020) emphasise, curriculum reform requires a strong justification and a clearly articulated vision to gain legitimacy, political support, and stakeholder buy-in. When this vision is not shared or interpreted uniformly, implementation becomes fragmented. As empirical research found that the lack of vision, coherent strategy and a sustainable model are the issues that need to be addressed in rural China's informatisation (Liu, 2012).

Moreover, in Wang et al's (2022) study of examing how local DE policy plans were developed and how school leaders and teachers in 25 rural schools in western China, found a widespread lack of updated and clearly defined DE policy frameworks. The vision of DE was often embedded within general school development plans, rather than being treated as a focused and well-supported area of reform. In some cases, relevant policies had not been revised since 2010, due to a lack of guidance. This aligns with

Gouëdard et al.'s (2020) observation that curriculum reforms often fail when the guiding documents lack specificity or when goals are not translated into actionable, context-sensitive strategies.

Ultimately, the success of educational reform depends not only on having a clear vision, but also on how that vision is communicated, supported, and adapted at the local level. Vähäsantanen (2015) argues that teachers continually negotiate their professional identity when engaging with externally mandated reforms, deciding how to adapt, comply with, or resist policy directives. It indicates that policy expectations alone do not determine the success of DE reform. It is important to recognise that teachers are not passive implementers of education reform but active agents who interpret policies through the lens of their professional identity, teaching beliefs, and contextual constraints (Lasky, 2005).

3.3.2 Digital teaching practices in rural China

One key argument emerging in the literature is that teachers' digital engagement in classroom practice directly influences the outcomes of DE reform. Researchers such as Bai et al. (2016) and Wang et al (2019) found that in rural classrooms in China, students benefited most when teachers were committed to comprehensive technology integration in both lesson planning and pedagogical practice. However, such comprehensive integration was rare, as both studies noted several barriers, including teacher workload, exam pressure, limited infrastructure, and a lack of locally relevant digital resources. In such context, rural teachers tend to use digital tools primarily for content delivery, rather than for fostering student interaction or creativity.

Similarly, Li et al. (2019) examined how technology affected teacher–student interaction in rural primary EFL classrooms. They analysed classroom recordings of teachers with high and low levels of technology use. The findings showed that technology often hindered, rather than improved, communication. Teachers who used more technology asked more display questions and gave more directives, but encouraged less spontaneous or authentic student speech in English. Moreover, all teachers gave minimal and nearly identical levels of corrective feedback, suggesting that technology use had little impact on feedback quality. These findings contrast with more ideal models of digital engagement, where technology help teachers explain ideas more clearly, make thinking visible, use different media to represent concepts, and encourage meaningful interaction with students (Leander, 2009). Digital engagement, therefore, is not merely about presenting content on a screen, it asks to improve rural teachers' pedagogical awareness and competence in using technology effectively (Li et al., 2019)

Moreover, despite national investments aimed at narrowing the urban-rural divide, significant disparities persist in both access to technology and teachers' capacity to use it effectively. For example, a recent survey-based study in China found that despite nationwide ICT investments, significant disparities remain in teachers' digital competencies between urban and rural schools (Zhao, 2024). The study found that rural teachers often have lower levels of ICT proficiency and face poorer digital environments, which directly impacts their ability to integrate technology into teaching. This new "teacher digital divide" suggests that policy efforts must go beyond installing equipment to actually building human capacity (Zhao, 2024). Teachers in these contexts often receive minimal training on how to meaningfully integrate digital tools into instruction, leading to surface-level adoption of technology. Studies indicate that rural

teachers primarily use digital tools in ways that replicate traditional content delivery methods, such as displaying PowerPoint slides, recording lectures, or assigning online practice tests, rather than fostering student engagement through interactive or inquirybased activities (Wang & Xing, 2022). Such practices replicate rather than transform traditional teaching models, failing to engage students in deeper learning processes.

Another critical issue identified in empirical studies concerns the structural and cultural barriers shaping DE implementation in rural China. As explores further in Sections 3.5 and 3.7, these barriers are closely linked to broader systemic features of the Chinese education system, including its high-stakes assessment culture and policy-driven accountability structures. Under such conditions, even when teachers are granted access to digital resources, their willingness to adopt new pedagogical approaches is often constrained by pressure to maintain exam performance and meet institutional targets (Yang et al., 2018). Many rural teachers experience digital reforms as top-down directives, leaving them with limited agency or ownership over digital practices (Gong et al., 2021). Despite acknowledging the potential of digital technology, teachers tend to adhere to established routines aligned with institutional expectations, rather than exploring innovative methods (Bai et al., 2016; Wang et al., 2019).

In addition, structural challenges such as the digital divide, alongside cultural factors such as traditional views of teaching and resistance to pedagogical change, continue to limit meaningful technology integration in rural settings (Li et al., 2023). These patterns illustrate how DE initiatives are shaped not only by access to technology, but also by deeply embedded systemic and cultural constraints. Case studies during the COVID-19

period offer especially compelling evidence of implementation challenges. When China rolled out the “suspend classes without stopping learning” policy in 2020 (moving hundreds of millions of students to online learning), the outcomes were unequal. One multi-school case study revealed that the sudden shift to online instruction did not narrow the education gap between regions; instead, it widened inequalities between urban and rural students (Niu, 2024). Students in remote areas often lacked stable internet or parental support, and many rural teachers struggled to adapt lessons for online formats, resulting in rural learners falling further behind. Likewise, a nationwide survey of high schoolers during the pandemic noted stark differences in home equipment and connectivity quality, with rural students at a clear disadvantage (Guo & Wan, 2022). These empirical findings challenge any assumption that technology by itself will change education.

While an increasing number of studies explore how DE is developing in China, most focus on urban schools, especially in well-resourced cities like Beijing, Shanghai, and Shenzhen. These schools benefit from fast internet, smart classrooms, and structured digital training programmes. Such conditions allow teachers to experiment with blended learning approaches that include student interaction, inquiry-based tasks, and personalised instruction (Wang et al., 2019; Zhu & Deng, 2019). In contrast, far less is known about how rural teachers engage with digital technology in their daily practice. Although previous research has documented many contextual barriers, such as weak infrastructure and policy constraints discussed in this section, it is still unclear how teachers negotiate these challenges. Moreover, according to sociocultural theory, teacher engagement is shaped not only by external conditions but also by individual factors

(Grossman et al., 1999). But it is also uncertain how this negotiation is influenced by factors like teacher identity, past experiences, or beliefs about education and students.

The above literature insights signal the need to move beyond models that frame barriers as either technological deficits or personal shortcomings. This broader framing also opens the door to thinking more carefully about how teachers make decisions, navigate constraints, and re-interpret policy in ways that align with their values and situated knowledge in the digital context. As the next sections will explore, teacher agency provides a valuable conceptual lens through which to analyse these dynamics, especially within the layered realities of rural and under-resourced educational settings.

3.4 Teacher Agency

The diffusion of DE in China, particularly its varied implementation in different regions and its difficulties in rural schools, illustrates how technology alone does not change education. In light of this context, it is important that we do not overlook the teachers' roles not only what they do in their practice, but also the conditions, values and perspectives that shape their experience. Moreover, research has shown that the rural and urban digital divide is not only technical but also affects pedagogical and cultural dimensions. In the previous section, research has demonstrated that the rural–urban digital divide is not solely technical; rather, the technical gap often amplifies disparities in pedagogical practice and educational culture. However, there remains limited critical inquiry into how rural teachers approach and enact teaching for a digital society within the constraints of their local contexts. This lack of investigation constitutes a significant gap in the literature, which this research seeks to address.

Given this understanding of the central role of teachers and the contextual complexities surrounding digital education, exploring teachers' practices becomes crucial. To do so, we need to conceptualise teachers' practice. From Biesta & Tedder's (2007) view, the things people do, and their actions always come together with individual efforts and the available resources, contextual and structural conditions, that conceptualised as agency. In this way, agency helps us to understand how teachers, as human agents, can flexibly and creatively contend with social constraints, simultaneously enabled and constrained by their social and physical environment (Priestley et al., 2015). According to Goodson (2003), understanding teachers' agency is an integral part of educational research, as they are a powerful force in the production and reproduction of knowledge and ideology in social and educational transitions (Hill, 2001). Therefore, the concept of teacher agency was applied in this study to understand how teachers enact digital teaching practices and negotiate wider contexts.

As this research is primarily informed by the concept of teacher agency, which remains an evolving and contested topic in educational research, this section briefly explores its various conceptualisations to establish a working understanding. Teacher agency is commonly described as teachers' capacity to make choices and take actions that lead to change (Emirbayer & Mische, 1998; Eteläpelto et al., 2013). However, diverse perspectives persist regarding how agency should be conceptualised, with multiple theoretical traditions highlighting its complexity and centrality in understanding educational reform.

Notably, Priestley et al (2015) summarise three major approaches to understanding teacher agency. The first treats agency as a variable, often in contrast to structure. In

this tradition, the focus lies on the degree to which individual actors, such as teachers, can exert influence within structural contexts (Priestley et al., 2015). This binary framing—agency versus structure—positions agency as something individuals possess in varying amounts, with more agency assumed to correspond to more transformative capacity. While this perspective draws attention to the interplay between individual autonomy and systemic constraints, it has been critiqued for oversimplifying complex realities. In particular, it risks reducing agency to a quantifiable trait rather than a dynamic process (Archer, 2000). Moreover, by framing agency and structure as opposites, it risks ignoring how structures can both enable and constrain action, and how agency operates within, through, and sometimes in resistance to them (Biesta & Tedder, 2007; Priestley et al., 2012). This limits its usefulness in understanding the situated nature of teachers' actions within evolving policy and institutional ecologies.

The second perspective, grounded in social cognitive theory, conceptualises agency along a spectrum—from active to passive, or from manifest to latent forms. Rooted in Bandura's (2001) theory of human agency, this view emphasises the role of internal capacities such as knowledge, self-efficacy, and beliefs. Within this framework, agency is understood as the ability to intentionally influence one's functioning and environment, contingent upon the individual's cognitive and motivational readiness to act. Applied to the teaching profession, this means that teachers require not only the freedom to make choices, but also the confidence and competence to exercise those choices meaningfully (Biesta et al., 2015). While this view usefully highlights the internal conditions necessary for agency to be exercised, it has been critiqued by Van de Putte et al. (2018), who warn that such a framing risks locating responsibility for systemic problems—such as poor student outcomes or failed reforms—within individuals, rather than addressing broader

structural limitations. This perspective can inadvertently frame teachers' lack of engagement as a personal deficit, rather than recognising the contextual constraints that limit what teachers are able to do.

To address these limitations, the third perspective emerges from a socio-cultural standpoint, offered by Lasky (2005). She underscores that each decision a teacher makes is shaped by past experiences, mediated by the present context, and contributes to shaping future possibilities. It situates teacher agency within a broader network of social relationships and cultural norms (Edwards, 2011). From the socio-cultural perspective, teacher agency is intricately linked with an individual's professional interests, values, sense of self, and perceptions of their role within the broader context of their workplace and the wider world (Eteläpelto & Saarinen, 2007; Fenwick, 2007). This underscores Wertsch & Rupert's (1993) exploration of the importance of cultural tools in mediating agency, highlighting how these resources empower teachers to navigate their professional environments and shape their professional practices in meaningful ways.

Moreover, the role of both conceptual and practical tools available to teachers is pivotal in shaping how they navigate and exert their agency. From this perspective, the availability and meaningful use of such tools are fundamental to enabling teachers to enact agency within their specific educational contexts. Wertsch and Rupert's (1993) sociocultural approach to mediated agency highlights the significance of cultural tools—resources that carry authority and shape how individuals act within social contexts. In educational settings, these tools can be both conceptual (e.g., pedagogical

frameworks, professional knowledge, or beliefs about teaching and learning) and practical (e.g., digital technologies, teaching materials, and collaborative networks). Conceptual tools influence how teachers frame problems and possibilities, while practical tools provide the means for action.

This perspective underscores that teachers' capacity to act cannot be separated from the norms, discourses, and social practices that surround them. It is particularly relevant in contexts like China, where deep-rooted cultural values–as discussed in later sectionscontinue to shape educational expectations and teacher identity. While the sociocultural perspective foregrounds key relational and cultural dimensions, it is less explicit in capturing the temporal dynamics of agency—how past experiences, present conditions, and future aspirations interact. As Burrell and Toyama (2009) conclude, cultural differences inform people's decisions and shape their experiences. To build on the strengths of this perspective while addressing its limitations, this research draws on an ecological understanding of teacher agency, which will be elaborated in Chapters 4 and 6. This framework was developed through a review of literature on digital education and reform in China, where teacher agency is best understood as emerging from the intersection of individual capacities and broader structural, policy, and cultural contexts.

To contextualise this study, the following sections will examine how pedagogical practices in China are shaped by cultural norms, political priorities, policy reforms, and structural inequalities.

3.5 Social and educational cultural influences on pedagogy in china

China has long historical traditions that have taken a very functionalist perspective of education, that of teaching to the test. This approach reflects not only deeply ingrained cultural norms but also a political desire to maintain social order and stability. While test-based education is not unique to China, the intensity of competition has heightened as the country has become increasingly integrated into the global economy. Particularly within an unequal socio-economic environment, the field of rural education often holds a strong logic that perceives examination success as the most likely route out of poverty for rural children (Kipnis, 2001; Wu, 2016). While rural teachers with limited circumstances face more challenges in implementing new educational reform, it is useful to examine the underlying logic of educational practice to gain insight into how these factors interact.

To do so, it is essential to examine China's broader pedagogical culture and how it has been constructed over time. This section explores the cultural and educational foundations of pedagogy in China, focusing on how historical traditions, exam culture, meritocratic ideals, and teacher-student hierarchies continue to define teaching and learning norms, particularly in rural settings.

3.5.1 Confucian heritage and pedagogical tradition

China's pedagogical culture is not solely a product of educational policies or institutional frameworks. Rather, it is deeply shaped by cultural norms that define how knowledge is transmitted, how authority is structured, and how education is valued.

China's education system has long been shaped by deep-rooted cultural expectations. Confucianism, which has influenced Chinese society for over two thousand years, continues to frame ideas about knowledge, learning, and social mobility. The traditional saying "万般皆下品，唯有读书高" (all pursuits are lowly; only studying is supreme) reflects the belief that education is the most valuable path to success. The emphasis on uniformity and standardisation aligns with the broader cultural expectations of education as a pathway to stability and social mobility, rather than as a process of intellectual exploration (Tan & Reyes, 2016). This perception can be traced back to the imperial civil service examination system (科举考试, kē jǔ kǎo shì), where memorising Confucian classics was the primary pathway to officialdom and social advancement. Despite decades of education reform efforts, the exam-oriented system remains deeply entrenched, shaping not only classroom practices but also societal expectations. These dynamics will be further explored in the next section.

In such a context, the Confucian Canon, known as the Four Books and Five Classics (四书五经/Si Shu Wu Jing), institutionalised by the imperial examination system (科举制/Ke Ju Zhi), has left a lasting imprint on Chinese learners' cultural beliefs, cognitive processes, and pedagogical norms (Lee, 2019). A key principle in Confucian education

is lifelong self-cultivation (修身/ Xiu Shen), which frames learning as a process of moral and intellectual refinement, guided by five key virtues:

仁 (rén) – Kindness and benevolence: Encouraging students to develop empathy and respect for others.

礼 (lǐ) – Rituals and propriety: Reinforcing appropriate behaviour in social and hierarchical relationships.

孝 (xiào) – Filial piety: Teaching respect for parents, teachers, and elders. 义 (yì) – Righteousness: Instilling a sense of justice and moral responsibility.

信 (xìn) – Integrity and trustworthiness: Emphasising honesty in personal and professional life.

These virtues not only shape individual character development but also place strong emphasis on hierarchical relationships, moral cultivation, and structured knowledge transmission, which are embodied in China's teaching practices. This perspective views knowledge as text-based, transmitted from 'intellectual people' (teacher) to learner, and educators have adopted this pedagogy of 'good teaching' (Tan, 2015). A 'good teacher' in the Confucian tradition is someone who has mastered these textual contents and fulfils the role of "传道授业解惑" (Chuandao, Shouye, Jiehuo)-- propagate the doctrine, impart professional knowledge, and resolve doubts. Fulfilling this role required teachers to memorise texts before passing them on to students, while for students were first expected to recite and internalise them through memorisation before

generating new ideas. This is because reciting classical texts has been viewed as an essential method for internalising knowledge and cultivating intellectual discipline (Li, 2012; Tan, 2015).

This practice reflects one of the most enduring Confucian pedagogical traditions—the emphasis on memorisation as a fundamental learning strategy. From a pedagogical standpoint, this emphasis on structured knowledge acquisition aligns with teachercentred instruction, where teachers guide students through a set curriculum and where mastery of foundational knowledge precedes critical engagement (Guo, 2017). In exam-driven contexts, memorisation and mastery of fixed content are often prioritised over exploratory learning. This exam-driven culture will be further discussed in the next section. Yet, recent research has suggested that memorisation and understanding are not mutually exclusive but rather complementary in Chinese education culture (Li, 2012). This cultural emphasis on knowledge mastery through memorisation has historically influenced teachers' pedagogical choices, structuring how lessons are delivered and how students engage with learning content in China.

Furthermore, traditional Confucianism emphasise the hierarchical relationship between teacher and student (Dong et al., 2008), encouraging filial piety, a measured questioning of authority, and the accumulated wisdom of the teacher to the student over time (Tweed & Lehman, 2002). The teacher is regarded as both an intellectual authority and a moral guide. As observed by Kipnis (2011) during his field work in China, teachers are role models, not only responsible for delivering academic knowledge but also for shaping students' ethical behaviour and social responsibility. This role reinforces the expectation that students should show respect and obedience to teachers, a practice still

observed in many Chinese classrooms. For example, it is common for students to stand and greet teachers upon their arrival, a ritual that reflects the traditional teacher-student hierarchy (Tan, 2015).

However, defining teaching and learning within Confucian traditions as a 'passive recipient' model oversimplifies the complexities of knowledge acquisition in this context. While some scholars argue that Confucian-influenced education limits critical thinking (Fung, 2014), others highlight that memorisation and understanding are not necessarily oppositional (Li et al., 2012). Instead, research suggests that Chinese students combine memorisation with deeper cognitive engagement, using repetition as a means of reinforcing and internalising knowledge before applying it (Chan & Rao, 2009). The expectation that students respect and follow the teacher's guidance does not mean they are entirely passive but rather that learning is framed as an incremental process, where mastery precedes critique (Li, 2012). This perspective challenges the assumption that Confucian pedagogy inherently suppresses independent thought and instead positions it as a structured yet adaptive system that has evolved in response to broader educational demands.

Despite these deeply embedded traditions, China's education system has not remained static. The rapid socio-economic changes of the 20th and 21st centuries have exposed tensions between traditional Confucian ideals and modern educational imperatives, particularly as global influences introduce alternative pedagogical models.

3.5.2 Adaptation of foreign educational ideas

China's educational reforms have long reflected global trends, particularly those associated with modernising pedagogy and fostering 21st-century competencies. As discussed in Section 3.2.1, a prominent global trend in recent decades has been the shift from teacher-centred, behaviourist models toward student-centred and constructivist approaches, which emphasises active learning, autonomy, and knowledge construction. These models stand in contrast to China's long-standing teacher-dominated pedagogy, which prioritises memorisation, external stimulus, and strict classroom authority. However, rather than directly transplanting foreign models, China has historically absorbed and adapted international educational ideas through the lens of local traditions, cultural values, and social structures (Tan & Chua, 2015). This process of selective integration has shaped the reform discourse in ways that are both globally informed and contextually grounded. The following section will briefly review how foreign educational ideas have influenced China's pedagogical culture, as this is directly relevant to the reforms discussed in Section 3.5..

Among the most influential of these foreign educational ideas was the philosophy of John Dewey. Dewey's educational ideas highlight that learning is a social process, and that students should construct their own understanding based on personal experience (Dewey, 2024). His child-centred educational vision (Dewey, 1896), widely regarded as foundational to constructivist thinking, positioned the learner at the heart of the teaching process and called for education to develop critical, reflective, and socially engaged individuals. Dewey's academic lectures during his 1919 visit to China directly influenced the National Government's 'School System Reform Decree' in 1922. A key outcome of this reform was the 'Renshu School System' (School System Reform Order 1922), which adopted the American-style "6-3-3" sectional education, still in use today. Many of Dewey's

works were translated into Chinese at the time, and his pragmatic philosophy was seen as a potential method to promote the Chinese society.

However, this enthusiasm was soon replaced by Marxism, as Dewey's liberal ideals came into tension with China's increasingly centralised and authoritarian political landscape. Scholars have argued that Dewey's emphasis on individual agency and democratic schooling clashed with the political imperative to use education as a tool for ideological transmission, discipline, and social control (Feng, 1995; Tweed & Lehman, 2002). As a result, Dewey's influence waned and was ultimately rejected in mainland China following the establishment of the People's Republic in 1949. Between 1949 to 1976, under Maoist ideology, Western liberal pedagogies were largely suppressed, and education became closely aligned with Marxist-Leninist principles (Zhang, 2019).

Despite this historical rupture, the legacy of foreign pedagogical ideas—particularly Dewey's philosophy—re-emerged in China's post-1978 reform era. The reasons behind this reintroduction and its significance for modern Chinese education will be explored in 3.5.2. Chinese scholars continue to acknowledge Dewey's influence on China's education system, sparking renewed interest in his ideas and the potential relevance for contemporary educational development (Zhong & Tu, 2019). Dewey has even been referred to by his Chinese supporters as a "second Confucius" (Grange, 2004), reflecting the perceived alignment between certain aspects of his educational philosophy and Confucian traditions.

For instance, Confucius' advocacy for individualised teaching (因材施教/yīn cái shī jiào)—the idea that education should be adapted to different students—bears similarities to Dewey's emphasis on differentiated instruction (Tan, 2015b). However, this comparison is not intended to suggest a complete convergence of their philosophies. In fact, their ultimate educational and democratic goals stand in contrast, particularly in their views on education's role in shaping society (Tan, 2015b). The key takeaway, however, is that China seeking a balance between tradition and innovation in

pedagogical reforms, and that recognising the importance of active student engagement does not necessarily mean diminishing the teacher's role.

In recent years, the student-centred approach and constructivism theory is gained increasing recognition in China. Although official policy documents did not explicitly reference constructivist theory, many Chinese scholars and educators recognise its significant influence on pedagogical reform. For example, scholars highlight its role in promoting real-life knowledge application, interdisciplinary problem-solving, and interactive learning (Wang, 2008). Also, it supports formative assessment and student-centred teaching, increasingly shaping teacher training and research in China (Zhang, 2010). This suggests that China is continuing to explore diverse approaches to teaching and learning.

However, the extent to which these principles translate into practice remains complex, as institutional and cultural constraints continue to shape how reforms are implemented. Turuing to DE, technology offers new opportunities to enhance student engagement and promote more autonomous learning. However, if not accompanied by meaningful pedagogical change, it risks reinforcing existing hierarchical structures. These challenges highlight the need for further research into how Chinese teachers interpret and adapt digital pedagogies within their professional contexts.

3.5.3 The cultural ideals and exam-oriented logic in shaping pedagogy in rural China

Although the imperial examination system was abolished, its legacy continues to shape contemporary educational values**,** with academic success widely seen as the most respectable path to upward mobility. This emphasis on academic excellence continues in modern China, encapsulated in the belief that "知识改变命运" (knowledge changes destiny). One reason for this is that during the economic reforms of the 1980s, China

implemented a state-led urban and government job allocation system, where only graduates with higher education qualifications were eligible for stable, well-paying government jobs. This system provided not only employment security but also access to urban residency (户口, hukou) and associated benefits, including better housing, healthcare, and schooling for children (Kipnis, 2011). Thus, higher levels of education are believed to be a key step toward better social status and increased chances of social mobility.

These cultural expectations are further compounded by the structural barriers imposed by the hukou system. The household registration system has long institutionalised a rural–urban divide by assigning lower levels of public service provision, employment access, and social benefits to rural residents. Scholars such as Rozelle and Hell (2020) and Song and Smith (2019) highlight that hukou status continues to exert a profound influence on an individual's life trajectory: it limits geographic mobility, assigns rural residents a lower level of public services and benefits, and effectively creating an institutionalised form of social inequality. For rural students, this means they not only start the educational race with fewer resources but also face ongoing structural exclusion—even if they succeed academically. As a result, academic success becomes not just a personal aspiration but a desperate strategy to overcome systemic disadvantage.

Although Wu (2016) questioned this cultural narrative—particularly its tendency to define success narrowly in terms of formal education credentials while dismissing vocational or non-academic achievements—the perceived link between educational

success and career prospects remains strong. Families, particularly in rural areas, invest heavily in their children's education, often at great financial and emotional cost, in the hope of securing a better future through academic achievement (Wu, 2016). This is shaped not only shaped by cultural beliefs, but also by structural realities, which will be further discussed in section 3.7.

This social and institutional context helps explain the entrenchment of exam-oriented education in rural schools. Teachers and families are under intense pressure to ensure that students perform well in the Gaokao—not necessarily out of a love for academic learning, but because it is viewed as the only legitimate path out of rural poverty. Within schools, this logic is reinforced by public slogans, celebratory displays of exam performance, and a culture that celebrates students who work hard to "escape" their rural origins (Kipnis, 2011; Howlett, 2021). Yet, as Howlett critically observes, this model not only fails to challenge rural–urban hierarchies but reproduces them culturally and symbolically. The very idea that success means leaving the countryside reinforces the notion that rural life is inherently inferior.

Furthermore, although the Gaokao is promoted as an equalising force, deep inequalities in access, preparation, and support persist. Urban students benefit from stronger school systems, access to tutoring, and advantageous university quotas, while rural students—even those who achieve high scores—struggle to access elite institutions (Liu, 2016). In addition, social capital and guanxi networks often play a hidden role in shaping who gains access to opportunities, further disadvantaging rural youth (Kipnis, 1997; Wu, 2016).

Finally, this high-stakes environment has led to a narrow pedagogical model focused on rote learning, direct instruction, and exam preparation (Lam, 2019). In rural settings, where both resources and pedagogical autonomy are constrained, innovation is often stifled. Teachers are expected to deliver content in a highly standardised manner to maximise student performance on tests, leaving little space for critical thinking, digital integration, or contextualised approaches to learning.

Unlike urban students who may have access to a wider range of career options, rural children are often socially and economically constrained. The education promotion process discussed in Chapter 2 represents a structured and transparent system that offers the possibility of geographic and social mobility. University entrance via the exam system is often seen as a shortcut for rural children who are from disadvantaged environments to leapfrog (Kim & Lee, 2011; Xiang, 2020), which not only provides better educational resources but also open doors to urban job markets and higherincome professions. Therefore, access to academic higher education is considered essential. For rural children in particular, this educational process remains the best way to achieve "success" (Xiang, 2020).

In such an environment where marks determine fate, all teaching activities and pedagogy focus on coping with exams as explored in 3.7. This exam-driven approach also interacts with policy frameworks that emphasise performance metrics and accountability. Regarding this research's focus on DE, it is crucial to understand how teachers exercise their agency to push themselves and students beyond a tech-based level to expand understanding of the context in which knowledge is being created, that

have gone unquestioned. The next section discusses how pedagogical traditions interact with contemporary policy initiatives and reform efforts.

3.6 Political desire, governance, and policy implications for education

As China enters the global world, education becomes a key vehicle to respond to the economy. This political desire is then reflected in new educational policies that seek to align schooling with workforce development, particularly by promoting educational reforms including “quality education” and “DE”. While policymakers aim to shift from a traditional test-based approach towards a model that prioritises creativity, innovation, and critical thinking, this transition challenges deep-seated educational ideologies about teaching and learning. This challenge is posed by the rural-urban divide, where more educational resources are made available in the cities. This challenge is not only technical, but also cultural. The poor implementation of reform policies in rural areas impacts how teachers perceive and are able to implement DE.

Given these dynamics, it is essential to examine the role that DE plays—and can play—in bridging these divides. Understanding how rural teachers navigate policy expectations, resource constraints, and pedagogical norms will be crucial in assessing whether DE serves as a vehicle for equity or merely reinforces existing inequalities. This section explores the intersection of political ambition, governance structures, and policy implementation, shedding light on how DE reform may be operationalised within China’s broader socio-political context.

3.6.1 Political ambition and the neoliberal logic of education reform

China's transition from a planned to a market-driven economy has profoundly reshaped its education system. Gruijters (2021) notes that this economic transformation, accompanied by rapid growth, significantly increased both the demand for education and its economic returns. Education is no longer solely a means of personal development but is positioned as a key driver of national economic growth. The education system has been increasingly aligned with workforce development, reflecting a neoliberal logic where schools are modelled as marketplaces and students are viewed as human capital (Carr, 2015). In this context, educational success is measured through quantifiable outcomes, primarily determined by the Gaokao (university entrance exam), which plays a central role in shaping educational practices and institutional accountability (Yu & Suen, 2005).

The Gaokao system serves a dual purpose: screening student talent and functioning as a high-stakes accountability mechanism for schools and teachers. Schools are ranked based on exam performance, and teachers' professional evaluations are tied to their students' scores. The government reinforces this model by establishing cut-off marks to determine students' access to elite universities (Yu & Suen, 2005). This exam-centric focus has transformed schools into competitive institutions geared towards test preparation, prioritising marks over broader educational outcomes. While this model ensures the selection of high-achieving students, it has also attracted criticism for neglecting key 21st-century skills such as creativity, innovation, and critical thinking

(Howlett, 2021).

In response to these criticisms, China introduced “quality education” reform (素质教育/Suzhi) in 1985, aiming to address the limitations of the test-based education model and foster more holistic student development (Ministry of Education, 1999). The reform aspires to cultivate students’ creativity, innovation, and independent thinking by shifting the focus from rote memorisation to broader intellectual and personal growth. This reform reflects Freire’s (2018) notion of a “humanising education,” which encourages teachers to develop new pedagogical practices that challenge traditional exam-driven approaches.

However, the implementation of quality education has been uneven, particularly in rural areas where resource limitations make it difficult to realise the reform’s ambitious goals. Scholars have noted that Suzhi education is often associated with urban modernisation and elite values, focusing on students’ aesthetic sensibilities, artistic skills, and intellectual integrity—qualities more accessible in urban contexts (Howlett, 2021). Rural schools, constrained by limited resources, often remain tied to test-based practices out of necessity, as test preparation provides a predictable path to measurable success.

Wu (2016) highlights the contradictions inherent in these reforms. While schools are positioned as catalysts for social mobility and national progress, they are also sites of tension where conflicting educational ideologies intersect. On the one hand, schools are expected to nurture well-rounded citizens; on the other hand, they remain tightly controlled by state policies and high-stakes accountability systems. For rural schools,

these tensions are particularly acute, as teachers must navigate the state's push for educational transformation while managing the realities of scarce resources and heavy teaching workloads.

3.6.2 Governance, accountability and performative pressures

In China, its complex spatial hierarchy of administration discussed in Section 2.2, where centralised policies are used to control, standardise, and evaluate teaching practices at all levels, significantly affects the implementation of policies in practice. China's current public policy system is basically formed based on a planned economy and is still in the stage of continuous exploration and adaptation to a market economy. Since the early 1980s, the Reform and Opening Up policy transitioned China from a centrally planned economy to a market economy. Also, a process of decentralising educational funding has taken place in the name of creating a more diversified revenue base to adapt to the rapidly changing economic environment (Tsang, 2000).

Based on the party-state structure, China encourages local officials to try new ways to solve the problem and then feed back local experience to national policymaking. The focus is on finding innovative policy instruments rather than defining policy objectives, which are critical characteristics of China's economic transformation (Heilmann, 2008). The purpose of this is to encourage local governments to use multiple channels to improve their public services and resources provided through system reforms initiated by decentralisation and financial diversification (Liu and Dunne, 2009). While this decentralised approach aimed to improve public services, it also introduced significant challenges in implementing national education policies.

Apart from the fact that China's public policy is deeply shaped by political considerations, Chinese researchers believe that China's public policy goal emphasises achieving 'fuzzy consensus', with decision-making often involving bargaining (Xue and Chen, 2005). The decentralised system of policy experimentation and implementation is also accompanied by bureaucratic negotiations and ambiguous political demands, which often result in delays, inconsistencies, or incomplete reforms. Ma and Lin (2012) describe how long-term bureaucratic negotiations can reduce bold initiatives to moderate projects or non-decisions. Similarly, Heilmann (2008) highlights how central directives often leave room for broad interpretation at the provincial level, resulting in fragmented policy execution.

Taking the “quality education” reform as an example, the central government has made enormous changes to the curriculum, pedagogy, and assessment to realise the vision of 'quality-oriented education'. This reform includes granting schools more autonomy to offer extracurricular activities, community projects, and practices (Tan & Chua, 2015; Tan and Reyes, 2016). However, the lack of clear standards and definitions from the central government left local authorities and schools with considerable discretion in interpreting the policy’s goals (Howlett, 2021). For many local policymakers and educators, “quality education” remained an abstract concept, offering little practical guidance for improving exam results.

However, the long-term bureaucratic negotiations that accompany high-level “decisions” often turn these bold initiatives into moderate projects, or even result in policy inaction (Ma & Lin, 2012). This trend has undermined administrative coherence

and led to inefficiencies and misaligned outcomes (Heilmann, 2008). The orders from the centre are often not strictly implemented at the province level as policy formulas at the highest level leave much room for interpretation and lack clear targets or explicit milestones (Schulte, 2018). Under pressure to meet central policy deadlines, local implementers often adapt policy content to align with regional interests and practical constraints (Wu, 2016).

The competitive and hierarchical nature of the education system also shapes the governance and resource allocation at the local level. Local governments bear primary responsibility for implementing education policies, funding schools, and tailoring initiatives to local conditions. However, they operate under the broader guidance of the central government, whose policies often prioritise measurable outcomes, such as exam results. In this environment, schools, especially in rural areas, are under pressure to deliver results despite facing significant resource and infrastructural constraints. In response to these ambiguities, local governments and schools frequently adopt a selective approach to policy implementation, prioritising easily measurable outcomes over less tangible goals (Howlett, 2021; Wu, 2016). This explains why schools often focus on improving enrolment and *Gaokao* pass rates rather than promoting the creativity or holistic forms of education discussed in Section 3.5.3.

For example, Wu (2016) highlights how a comprehensive audit system was introduced to monitor rural school performance, with the prevention of student dropout as a primary objective. Rural teachers and students are subjected to constant audits and performance inspections, creating a high-pressure environment of continuous oversight. This form of educational auditing, another compulsory technique of state control, forces rural schools

to redirect already scarce resources towards fabricating performance outcomes and developing bureaucratic “disciple networks” to satisfy auditors. Strategies such as inflating enrolment figures, superficial compliance with dropout prevention policies, and manipulating performance metrics illustrate how schools perform compliance on the surface while privately resisting or manipulating requirements. This paradoxical blend of visible conformity and hidden resistance challenges the linear assumptions embedded in audit culture (Wu, 2016). This reality highlights the systemic challenges faced by rural schools and teachers, which are pivotal to understanding this research.

The governance of education in China reflects a tension between policy ambition and practical implementation. Policies such as “quality education” reform aim to promote creativity and holistic development, yet the complex administrative structure, economic disparities, and performative pressures often reduce these ambitions to a focus on exam scores and measurable outcomes. Understanding how teachers navigate these governance and accountability systems is essential for evaluating the real impact of educational reform, particularly in resource-constrained rural contexts.

3.6.3 Distributed Leadership and Bounded Autonomy in Chinese Schools

This section builds on prior discussions of governance and accountability in China’s education system by considering how school leadership structures shape the enactment of teacher agency. A growing body of international literature highlights the role of distributed leadership--the idea that leadership is not confined to formal positions but is exercised across different levels of a school organisation (Spillane et al., 2001; Harris, 2013). Rather than concentrating authority in a single individual, distributed leadership

emphasises leadership as a collective, socially distributed process, enacted across multiple actors and embedded within organisational contexts. In theory, this approach aligns well with calls for teacher empowerment and agency in policy and practice. It assumes that leadership capacity exists across different layers of the school and that teachers, as key agents of change, can contribute to institutional transformation through distributed decision-making. This vision resonates particularly in digital education reforms, which often require school-wide collaboration, shared vision-setting, and capacity building around new pedagogical tools and technological platforms.

Adding a valuable cultural lens to this discussion is the work of Cheng Yong Tan, who has examined how cultural values shape the implementation of distributed leadership across Asian education systems, particularly in Singapore. In his 2024 study, Tan identifies four key values: meritocracy, future orientation, system-level coherence, and strategic pragmatism, they guide leadership behaviours in Singaporean schools. He notes that collectivist values and power distance norms lead to nuanced interpretations of distributed leadership, often resulting in meta-strategic leadership, where formal collaboration coexists with hierarchical control (Tan, 2024). While policies may encourage ‘teacher leadership’ or ‘innovation from below’, in practice, leadership remains largely centralised and often aligned with local government directives. This gives rise to what researchers have termed bounded autonomy (Liu & Rani, 2025), a condition where teachers have limited decision-making power within rigid policy frameworks.

This insight is especially relevant for understanding leadership cultures in mainland China, where similar cultural underpinnings, including Confucian notions of hierarchy

and social harmony shape how distributed responsibilities are enacted. In such systems, agency must be understood relationally and contextually. Teachers' professional judgement is often filtered through expectations of standardisation, accountability metrics, and performance inspection. In rural schools, these tensions are heightened by uneven resources, fewer leadership opportunities, and intensified policy pressure, as this chapter reviews.

While distributed leadership remains a prominent discourse in reform initiatives, its realisation in practice is shaped by deep structural and cultural factors. As empirical examples from this study, presented in Chapters 7 and 8, demonstrate how leadership is interpreted and enacted in rural Chinese schools, and how bounded autonomy manifests in teachers' situated responses to digital reform. Integrating this lens into the broader ecological understanding of agency allows for a more nuanced appreciation of how teachers exercise judgement and leadership within institutional structures. It also underscores that professional agency is not solely a matter of individual capacity, but deeply embedded in how leadership is enacted, distributed, and constrained in particular policy ecologies.

3.7 The Structural and Cultural Influences on Teaching Practices in Rural China

Teaching practices in rural China are shaped by a complex interplay of cultural traditions, governance structures, and systemic constraints. As discussed in Sections 3.5 and 3.6, these structural and cultural factors not only shape how teachers approach their profession but also determine their capacity to engage with educational reforms. This section draws on relevant literature to explore these intersecting dynamics, offering

critical insights into how rural teachers respond to, negotiate, and exercise agency in relation to educational reforms within the rural context.

3.7.1 Structural inequality, systemic stratification, and the challenges of rural education in China

The rural–urban divide remains one of the most persistent and significant barriers to achieving educational equity in China. Rooted in a long history of urban-centric policymaking and uneven resource distribution, high-quality educational resources—such as teaching materials, infrastructure, and financial investment—remain disproportionately concentrated in cities (Bao, 2006). Urban schools, especially in economically developed provinces, benefit from stronger government funding, better facilities, and greater access to professional development and technology, enabling them to adopt innovative pedagogical practices and keep pace with reform initiatives (Howlett, 2021; Kamp et al., 2017). In contrast, rural schools face systemic disadvantages that severely limit their ability to implement educational reforms. These include inadequate infrastructure, outdated materials, limited internet connectivity, and chronic underfunding (Kamp et al., 2017). Such material constraints often force rural teachers to rely on traditional, exam-focused teaching methods, reinforcing a narrow view of education defined by test performance rather than holistic learning.

Compounding these disparities is the structure of China's educational promotion system, which is deeply stratified and exam driven. As discussed in Chapter 2, this system not only determines access to higher education but also shapes the organisation of schools and the delivery of teaching and learning at all levels (Pires & Duarte, 2019). Within this hierarchy, key-point schools (重点学校) represent the pinnacle of

educational prestige. These institutions are granted priority access to funding, facilities, and highly qualified teachers, and are explicitly designed to produce high-achieving students destined for elite universities (Ye, 2024).

At the secondary level, admission to key-point schools is fiercely competitive, often determined by performance on school-administered entrance exams. Unlike the unified Gaokao system for college entry, these localised exams vary widely, creating significant

inequities in student access to quality education (Lo, 2017). As Jia & Li (2021) note, the government's classification of elite universities using cut-off Gaokao scores further intensifies the stakes of early academic performance. Data from Ye (2024) confirms that attending a key-point senior high school significantly increases a student's likelihood of entering higher education, even after controlling for the selective nature of admissions.

This competitive culture has deeply permeated the compulsory education stage. Primary students who perform well are channeled into better-resourced lower secondary schools, reinforcing the view that academic success must be achieved early. Consequently, test-based instruction dominates even the earliest levels of schooling, subordinating the broader goals of education—such as civic engagement and critical thinking—to the singular aim of university preparation. This emphasis on hierarchy and credentialism aligns with traditional Chinese conceptions of knowledge as a structured and examinable pathway, as described by Hayhoe (2016), but it also narrows the scope of educational purpose.

Within this context, rural teachers face compounded challenges. Many works in professional isolation, disconnected from networks of collaboration and ongoing development opportunities (Collins, Goforth & Ambrose, 2016; Wang & Gao, 2013). A significant proportion have not received formal subject-specific training and lack certification in the areas they teach (Li, Shi & Xue, 2020). Although professional development initiatives have been launched by the government, including the use of online training platforms and state-mandated in-person workshops, their effectiveness

remains limited. Rural teachers often struggle with poor digital infrastructure, time constraints, and a lack of training tailored to their local needs (Chen, 2013; Duncan-Howell, 2010).

Efforts to recruit and retain rural teachers—such as the tuition-free teacher education programme that requires graduates to teach in rural schools for a designated period—have had only short-term success (GOSC, 2007b). Research by Luo and Mkandawire (2015) finds that many teachers leave their rural placements as soon as contractual obligations expire, seeking better pay and professional environments in urban schools. This high turnover disrupts continuity in rural classrooms and undermines long-term efforts to improve teaching quality.

Finally, the exam-driven system itself plays a role in reinforcing educational stratification. While formal entrance exams for key-point schools have been officially prohibited at the compulsory education level, informal and selective practices persist. These mechanisms sustain a hierarchy of access to high-quality education, entrenching advantage among urban and elite groups and further marginalising rural students. While policies may aim to promote equity and modernisation, the reality for many rural schools remains shaped by resource scarcity, narrow pedagogical models, and systemic exclusion. Understanding these dynamics is essential for interpreting how rural teachers and schools navigate both everyday educational practice and top-down reform agendas.

3.7.2 The pressure of accountability and the persistence of exam-oriented teaching

In addition to resource limitations, rural teachers must navigate the pressures of a highstakes accountability system. The introduction of performance evaluation policies, such as the merit pay system in 2009, aimed to improve teaching quality by tying teachers' salaries to their performance (Fan & Fu, 2011). While these policies have been shown to increase teacher motivation, particularly in rural areas where financial security is unstable, they have also created significant pressure on teachers (Liu & Onwuegbuzie, 2012). Liu and Liu (2018) argue that these evaluation systems operate as part of a centralised, supervisory-based appraisal framework, which reduces teachers' professional autonomy and prioritises compliance over pedagogical innovation.

The persistent focus on measurable outcomes reinforces the dominance of examoriented education, particularly in rural schools. Although Suzhi education reform seeks to promote creativity, critical thinking, and holistic student development, the exam system remains central to how educational success is defined (Tan & Reyes, 2016). The Gaokao examination continues to dominate educational practices, as it serves not only as a selection mechanism for university admissions but also as a tool for maintaining social stability and state control (Li, 2013; Liu & Wu, 2006; Schleicher, 2011).

In this context, teaching in rural schools is structured almost entirely around exam preparation. Howlett (2021) and Lam (2019) note that rural teachers focus on helping students memorise textbook content and pass exams, often at the expense of fostering

creativity, inquiry, or student agency. This rigid, teacher-centred approach is reinforced by limited resources and professional isolation, making it difficult for rural teachers to adopt the student-centred practices encouraged by national education policies (Serin, 2018; Rong, 2015).

3.7.3 Teachers' strategic adaptation and resistance

To fully understand how the systemic pressures manifest in classroom practice, it is also important to examine the teachers' internalised beliefs and pedagogical values. This is because teachers' beliefs play an important role in not only form the basis of decision-making in their daily teaching and shape how teachers respond to educational reform, but also reflect deeper cultural and systemic influences (Biesta et al., 2015). This perspective also informed this research's exploration of teacher agency in rural China with specific structural and cultural context.

As previously discussed in Sections 3.5 and 3.6, the high-stakes examination system embedded within the national education framework plays a powerful role in shaping teachers' pedagogical beliefs and practices. Standardised testing remains the dominant measure of educational success, incentivising teaching approaches that are tightly focused on exam preparation and mark improvement (Wang, 2004). In rural schools, this examination-driven culture is often even more pronounced. As highlighted earlier, socio-economic disparities and the widespread belief among rural families that education offers the most viable route to upward mobility contribute to an intensified emphasis on academic performance (Kipnis, 2001; Wu, 2016). Consequently, teaching in these contexts is frequently teacher-centred and textbook-driven, with a strong focus on delivering content aligned with examination requirements (Li, 2014).

Despite these constraints, rural teachers are not passive recipients of policy. Instead, they demonstrate considerable agency in navigating the tensions between top-down reform and local teaching realities. Several studies have highlighted a recurring pattern of selective adaptation, whereby teachers' appropriate elements of reform in ways that are pragmatically and culturally coherent within their own contexts (Tan, 2016; Wu, 2016). For example, Kipnis (2001) and Wu (2016) highlight that rather than fully adopting national educational reforms, rural teachers selectively implement aspects that align with local conditions and performatively respond to policy requirements. The teachers often return to traditional approaches once external scrutiny diminishes, as they believe the required teaching methods do not fit their school conditions and their students' needs (Wang, 2011).

These culturally and structurally entrenched beliefs form part of teachers' pedagogical habitus—a term used by Bourdieu (1997) to describe the durable, yet dynamic dispositions shaped by an individual's social history. Teachers' ideas about effective pedagogy are not isolated preferences, but products of accumulated experience, reinforced by institutional norms and wider societal expectations (Perrotta, 2017; Timmermans & Tavory, 2012). These orientations are further sustained by performative pressures in the education system, where schools and teachers are held accountable for measurable student outcomes (see Section 3.6.2). Although habitus tends to favour continuity, it is not immutable and may evolve in response to new contextual influences, such as policy changes or shifts in school environments (Grenfell, 2014). External factors such as educational policies and school environments play a crucial role in shaping and potentially transforming teachers' pedagogical beliefs. Understanding

these complex interactions is essential for grasping the lived realities of rural educators and the uneven implementation of educational reform in diverse settings, as explored in this study.

In light of such context, it is important we do not overlook teachers' roles not only in what they do their practice, but also the conditions, values and perspectives that shape their experience. Nevertheless, local conditions are often unknown, and there is no effort in pursuing immersive research projects, which results in a lack of insights into user needs based on local practices (Oreglia, 2013). This raises questions about rural teachers' digital experiences, including how their lived realities and the broader socialpolicy environment shape their understanding of DE and pedagogical practices. Therefore, it is crucial to conceptualise teachers' agency in DE, focusing on how they understand, interpret, and adapt national policies in local contexts. Such an approach will shed light on the broader sociocultural and policy-driven dimensions of DE, offering a more nuanced understanding of rural teachers' experiences and informing future policy and practice.

3.8 International Framing and Research Gaps

The preceding sections have provided a critical review of digital education reform, teacher agency, and pedagogical cultures in China, with particular attention to the challenges faced in rural contexts. These discussions have highlighted the interplay of policy ambition, cultural norms, structural inequality, and professional practice within the Chinese education system. However, these national dynamics do not exist in isolation. Rather, they are entangled with broader global trends, including the rise of data-driven governance, the promotion of teacher digital competence, and the tension between top-down reform and local pedagogical realities.

As such, it is necessary to situate China's digital education reforms within a wider international literature base that has examined similar dynamics across diverse contexts. From international policy frameworks, such as OECD (2021) advocating for digital transformation and lifelong learning, and UNESCO's global competencies agenda (UNESCO, 2022) illustrate the global momentum toward DE. At the same time, critical scholarship has raised concerns about the performative demands and managerial pressures these reforms often impose on educators (Ball & Grimaldi, 2021; Selwyn, 2011, 2022). These tensions are mirrored in the Chinese context, where teachers face increasing accountability metrics and expectations for innovation, yet operate within rigid institutional hierarchies. Likewise, debates around teacher agency, distributed leadership, and culturally bounded autonomy resonate beyond China, suggesting both shared challenges and distinctive national patterns.

Globally, the concept of teacher agency, too, has gained prominence in international research, as scholars explore how educators navigate reform agendas, negotiate professional identities, and exercise discretion in diverse policy environments (Biesta et al., 2015; Priestley et al., 2012; Eteläpelto et al., 2013). While cultural, institutional, and systemic factors vary across countries, there is growing recognition that teachers' engagement with digital innovation is shaped not only by access to resources but also by their capacity to make meaningful pedagogical choices within often constrained settings.

Thus, this study builds on these insights by situating rural teachers' engagement with DE in China within a wider comparative discourse. It foregrounds how rural teachers, as both implementers and interpreters of reform, navigate complex tensions between policy mandates, infrastructural realities, and cultural expectations. In doing so, it contributes to global conversations on teacher professionalism, digital reform, and the politics of educational change. First, it supports the study's analytical aim of understanding rural teachers' digital engagement not only as a local phenomenon, but as part of a transnational policy trend that reshapes the roles, expectations, and identities of educators. Second, it enables theoretical insights generated from the Chinese context to contribute to global conversations on digital reform, teacher professionalism, and the politics of educational change.

Yet despite the growing international literature, several important research gaps remain, particularly regarding rural settings and teacher agency in the context of digital reform. First, most empirical research has focused on urban schools or macro-level policy analysis, leaving the experiences of rural teachers largely unexplored. Much of research examines infrastructure challenges, policy directives, and external factors such as internet access and teacher training programmes (Gao & Cui, 2022; Larke, 2019), but gives little attention to how rural teachers themselves interpret and respond to DE reforms. Particularly how they negotiate these reforms within their unique social and institutional contexts. This gap leaves a significant knowledge void about the agency of rural teachers in integrating digital practices into their daily teaching routines.

Second, existing studies often overlook the performative dimensions of DE implementation. Teachers may comply with reform rhetoric while retaining traditional teaching practices. In rural areas especially, pressures from high-stakes exams and bureaucratic accountability systems shape how teachers selectively adopt or perform digital practices (Bai et al., 2016; Wang et al., 2019). Yet, the nuanced ways in which teachers navigate, reinterpret, or selectively implement digital policies in response to these pressures remain underexplored. What is often missing from the literature is an understanding of how teachers perform compliance outwardly, while maintaining more traditional practices in the classroom—strategically balancing policy demands with their own values, constraints, and professional realities.

Third, while there is increasing interest in teacher agency in DE, few studies examine how agency is enacted across structurally unequal contexts. There is an urgent need to explore how rural teachers exercise agency in enacting DE policies. Existing studies (Gong et al, 2021; Wang & Xing, 2022) suggest that teachers' engagement with digital tools is shaped by their institutional contexts, digital competence, and professional discretion. Yet how these factors interact in the daily realities of rural classrooms remains under-researched. Much of the available literature adopts qualitative case studies or small-scale interventions (Gao & Cui, 2022; Larke, 2019), which provide important insights but limit the generalisability of findings. Mixed-method approaches are needed to offer a more comprehensive understanding of how rural teachers navigate the complexities of digital reform, blending qualitative insights with broader quantitative data to capture diverse teacher experiences.

Finally, the rural–urban digital divide is often framed as a technical issue, when in fact it reflects a wider practice divide. Teachers' engagement with DE is shaped not only by tools and training, but also by the policy narratives, community expectations, and institutional logics they encounter. This study responds to these limitations by conceptualising digital agency as both a personal capacity and a contextual process—shaped by structures, cultures, and professional histories.

3.9 Summary

This chapter has reviewed literature on teacher agency, global trends in DE, and the broader socio-cultural and political contexts shaping education in China. It highlighted how China's historical tradition of exam-oriented education, combined with deeply ingrained cultural values and contemporary political ambitions, influences current pedagogical practices. A key theme emerging from this review is the tension between policy expectations and teachers' lived experiences. In particular, it identified the significant influence of rural-urban disparities, noting that rural teachers often operate within contexts shaped by limited resources, strong examination pressures, and entrenched pedagogical traditions. These insights suggest a complex interplay between policy ambitions and the realities of teachers' everyday practices. Recognising these complexities provides a strong rationale for examining teacher agency in the DE context. As discussed, these factors mediate teaching practices, may also affect how teachers interpret, negotiate, and enact digital reform in their classrooms.

To further situate this research within the international field, the next chapter presents a systematic review of empirical studies on teacher agency and digital education. This review identifies key patterns, conceptual developments, and methodological

approaches that informed the analytical framework and fieldwork design of the present study.

4. Systematic Review of Teacher Agency in Digital Contexts

4.1 Introduction

While teacher agency is widely acknowledged, it is often discussed implicitly or in fragmented ways—particularly in non-Western and under-resourced contexts. At the same time, as discussed in Chapter 3, much DE research focuses on infrastructure, tool usage, or digital competence, often overlooking the agentic dimensions of teachers' decision-making and adaptation. This disconnect highlights a conceptual gap: teacher agency is frequently analysed without adequate attention to how digital contexts reshape teachers' capacities and choices. To offer a nuanced, multi-dimensional approach to understanding teachers' engagement with digital reform as socially and structurally embedded, a systematic literature review was conducted. By presenting the results of the empirical research on teacher agency within the context of DE, this chapter provides a structured synthesis of how teacher agency has been conceptualised, studied, and operationalised in relation to digital reform efforts. The review also contributed to establishing the conceptual framework for this study, introduced in Chapter 6, by identifying key conceptual blind spots, including the limited integration of digital agency as a theoretical construct.

In the following sections, Section 4.2 outlines the review methods, including data selection, extraction, and analysis procedures. Then, Section 4.3 provides an overview of empirical

findings across individual, institutional, and systemic levels. Then, Section 4.4 maps how teacher agency has been framed in DE research, focusing on key influences and constraints, and Section 4.5 identifies conceptual trends and gaps in the literature, laying the groundwork for the integrated framework presented later in Chapter 6.

Method

The process and methodology adopted in this study adhered to the PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) as outlined by Moher et al. (2010). For the purpose of maintaining rigour and reducing biases in the evaluation of data, a senior academic acted as a second reviewer during the literature selection and analysis stages (Stoll et al., 2019). To achieve the study's objectives, the following questions were developed to guide the review:

1. What forms of teacher agency are manifested in digital contexts?
2. How might the different dimensions of Digital Agency (digital agency) be used to capture the complexity of teachers' behaviours and decision-making in relation to digital integration?

A scoping review was conducted to develop inclusion criteria for selecting studies that would answer these questions (Newman & Gough, 2020). This involved reviewing three international literature reviews focused on specific areas of teacher agency: teacher agency for inclusive education (Li & Ruppar, 2021), research approaches used to study teacher agency (Deschênes & Parent, 2022), and theories and key themes of teacher agency (Cong-Lem, 2021). Based on these existing reviews and the review questions, criteria were developed to select relevant literature. The detailed criteria for

data selection are discussed in the next section, followed by data extraction and the methods used for data analysis.

4.2.1 Data selection

Initially, the data screening phase involved a systematic search across three electronic databases: Web of Science (WoS), ERIC, and China National Knowledge Infrastructure (CNKI) to compile an extensive list of potential studies. To filter this initial list, the criteria below were meticulously applied:

1) **Focus on Teacher Agency:**

Studies must focus on teacher agency, with the term "teachers" referring to both pre- and in-service teachers unless otherwise specified.

2) **Focus on Digital Education:**

Research must focus on "digital education," incorporating technology-integrated elements based on prior definitions of the term. This criterion was clarified through a broad search term, detailed in the later discussion of the keywords.

3) **Empirical Research:**

Studies must present results based on the collection and analysis of primary data. This criterion ensures that the review juxtaposes empirical findings with prevailing conceptual definitions to elucidate the complexities of teacher agency within the digital context.

4) **Language of Publication:**

Given the PhD project's focus on China and the inspiration from Xu (2022) to improve intellectual diversity and address English-dominated academic inequalities, studies published in both English and Chinese were included.

5) **Publication Type:**

To ensure high-quality papers, the search was filtered to include only peerreviewed journal articles.

To generate the initial set of literature for the review, this study utilised adjusted search strategies based on the search instructions of the selected databases. **Table 4.1** shows the search strategies applied in this review. The initial search was limited to the most specific and relevant terms, with more general terms added later to evaluate their effect on the number of hits. Although this review draws on a range of conceptions, its focus is on analysing literature that specifically addresses the integration of teacher agency within the context of digital education. The key terms “agenc” and “digital education” are therefore prioritised, rather than broader or alternative conceptualisations of agency. Thus, the concept of agency was included by referring to the search terms “Teacher Agency” OR “Digital Agency”. The theme of “Digital Education” was addressed by searching various alternative thesauruses to create a sensitive and comprehensive search strategy.

Table 4.1 Search Strategies

key terms	Alternative words/phrases
Teacher Agency	**English:** "Teacher agency*" OR "Digital agency*"
	Chinese: "教师能动性"
Digital Education	**English:** "digitalisation of education" was addressed by searching for "Technology-integrated Teaching" OR "Digital classroom" OR "ICT (Information and communication technology) for education" OR "technology uses in education" OR "Educational technology" OR "Technology integration" OR Digital* OR Information* OR "Web-based Education" OR "Internet-based Education" OR "Digital teaching" OR "Computer assisted instruction" OR "digital pedagogy" OR "digital curriculum"
	Chinese: "数字教育" OR "教育信息化" OR "技术" OR "教育技术" OR "信息通信技术(ICT)" OR "数字化" OR "互联网教育" OR "云教育" OR "智慧课堂"

*Note: the * symbol used in these searching exercises was for variable endings of the searching terms (e.g., agent, agents or agentic); the "" symbol was to group words into phrases.*

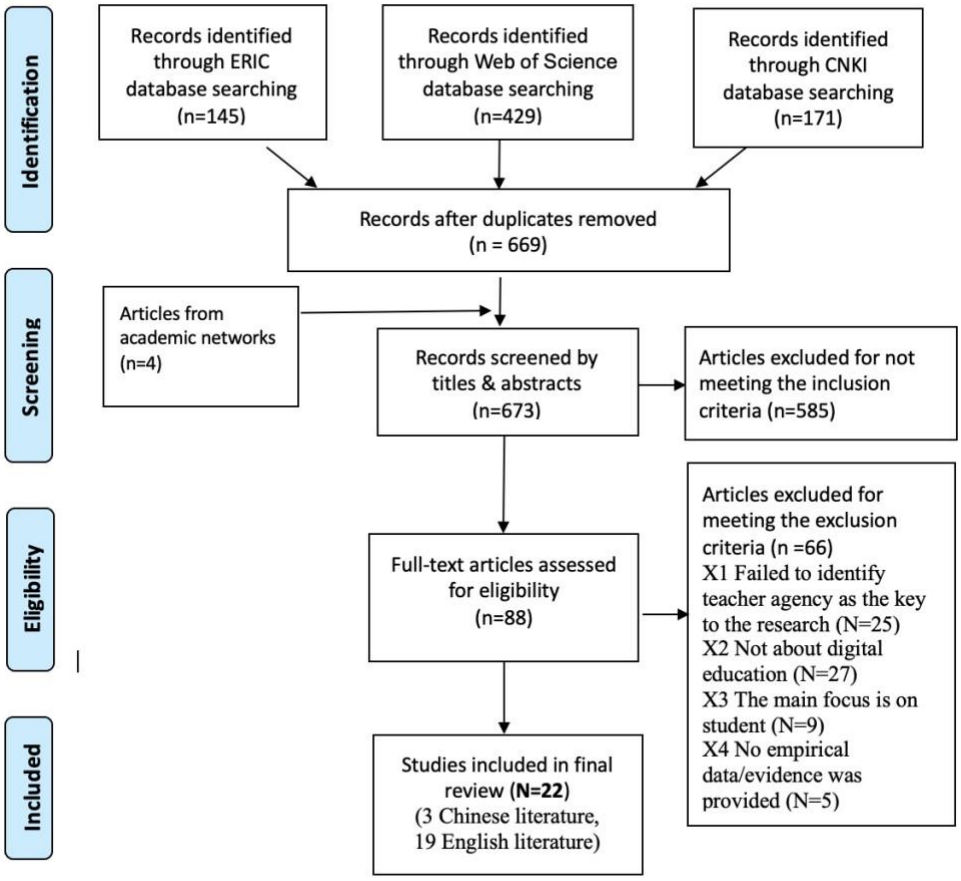
The English search terms were synthesised from three thesauri: the UNBIS (United Nations Bibliographic Information System) Thesaurus; the UNESCO (United Nations Educational, Scientific and Cultural Organisation) Thesaurus; and the ERIC (Education Resources Information Center) Thesaurus. Regarding Chinese-language literature, the

Chinese vocabulary “教师能动性”(Jiaoshi Nengdongxing) was used as a keyword aligned with "teacher agency", which is drawn on Chinese literature review articles on this concept (Zhu & Zhan, 2022). In addition, “教育信息化” was considered the most relevant keyword regarding “digital education” in the Chinese context, which was drawn from the researcher’s analytical work on China's “digital education” policy (in the process of journal review). Thesaurus terms were searched in a hierarchical tree structure, allowing for the inclusion of narrower terms beneath more general ones. These terms were combined with operators such as “AND” and “OR” to refine the search with more relevant results. All relevant variations of these narrower terms were also searched as free-text keywords in subjects, titles, and abstracts to ensure comprehensive coverage.

By systematically applying these search strategies and criteria, a comprehensive set of literature was gathered. The searches yielded 574 results of English-language journal articles from the WoS (N=429) and ERIC (N=145). In addition, four English literature from academic networks that met the inclusion criteria were also included. Regarding Chinese literature, 171 results were generated from CNKI. Although WoS has literature in different languages, it did not yield relevant Chinese literature in this database. In total, 749 academic articles were generated and exported to the reference management software Zotero for selection. Then two phases of literature selection were then conducted, and the second reviewer was involved in spot-checking at each phase to minimise the risk of bias. Firstly, initial selection was completed according to the use of inclusion criteria in titles and abstracts, and 585 irrelevant articles were excluded. Then, the remaining 88 articles were grouped as “candidate papers” and their full text were reviewed for final selection. Through this phase, 66 entries were sorted in “final

exclusion" as they were deemed as inappropriate for this review for several reasons, like failed to identify teacher agency as the key concept to the research, or not focuses on leveraging technology in teaching and education. Finally, twenty-two journal articles were selected for analysing. The flow diagram of article retrieval in **Figure 41.**

Figure 4.1. Flow diagram of article selection



4.2.2 Data extraction

The data extraction process for this review used a standard form (see example in Appendix A) that included all relevant fields, such as study characteristics (e.g., author, year, study design), participant demographics (e.g., sample size), a narrative description of the results, and critical outcome measures. This process followed a qualitative evidence synthesis approach (Noyes et al., 2023) to improve understanding of

intervention complexity, contextual variations, and implementation of teacher agency in the digital context. In this approach each included article was summarised in a narrative way through a detailed review of the full text of the selected studies. Throughout the data extraction process, rigorous measures were taken to ensure accuracy and consistency. The extracted data were double-checked to ensure completeness and correctness. Random checks and audits were conducted by the second reviewer to identify potential errors or bias. Extracted data were stored and organised in a structured manner. Microsoft Excel and Word were used to store the basic information about the selected papers and the extracted data contents. Separate tables and files were properly labelled and categorised for each study to facilitate data analysis and synthesis. The traceability of the data extraction process was ensured through a comprehensive audit trail, which recorded the date of extraction, any changes made during the extraction process and the source of the extracted data. This traceability facilitates the repeatability of the systematic review process. By following this systematic and rigorous approach to data extraction, the researchers ensured that the results of the systematic review were robust and reliable.

4.2.3 Limitations of the Review Protocol

While this systematic review was conducted with careful attention to methodological rigour and transparency, several limitations should be acknowledged in relation to the review protocol.

First, although the review utilised systematic searches across three major academic databases (Web of Science, ERIC, and CNKI), it did not incorporate complementary search strategies such as backward and forward citation tracking, hand-searching key

journals, consulting grey literature databases, or reaching out to domain experts. This limitation was primarily due to time and capacity constraints. As a single PhD researcher managing an extensive fieldwork-based study alongside this review, expanding the search to include multiple supplementary methods was not feasible within the project timeline. While database searches provided a structured and replicable foundation, it is acknowledged that additional strategies may have increased the comprehensiveness of the review and captured relevant studies that were not indexed or published in mainstream academic outlets.

Second, although a senior academic acted as a second reviewer during the selection and coding processes, the review did not formally calculate or report inter-rater reliability. This decision reflected both the qualitative nature of the review and the practical limitations of involving a full research team. Regular consultations, spot checks, and cross-verifications were carried out to enhance consistency and minimise bias, but the lack of systematic inter-rater reliability reporting remains a recognised limitation in terms of reproducibility and methodological transparency.

Third, the review focused exclusively on peer-reviewed journal articles, excluding unpublished studies such as dissertations, conference proceedings, or reports. This decision was made to ensure academic quality and alignment with institutional expectations for doctoral research. However, this exclusion may have introduced publication bias, potentially omitting valuable practitioner insights, emergent findings, or regionally relevant perspectives—particularly from non-English-speaking or underrepresented research communities.

These limitations reflect the realities of conducting a systematic review within a doctoral research context, where methodological rigour must be balanced with resource constraints. Nonetheless, they suggest important areas for future research. Broader and more inclusive review protocols could be developed in collaborative research teams, allowing for triangulated coding, multi-source literature inclusion, and expanded validation procedures.

4.2.4 Data Analysis

In this review, we adopted thematic analysis as delineated by Braun & Clarke (2012; 2017). At the initial phase, text data were organised and categorised into initial codes. Each piece of literature was systematically dissected to identify significant concepts, phrases, and instances. After the first reviewer generated a diverse array of initial codes, these were then reviewed and refined in consultation with the second reviewer. This process was enhanced by exporting the codes and illustrative quotes to an Excel sheet for collaborative review. The initial codes were further examined to refine and classify them into different categories/themes based on their pattern (Bearman & Dawson, 2013), with a focus on how these patterns informed the dimensions of teacher agency and their interaction with digital agency. This categorisation process was guided by an integrated approach, utilising both a priori categories, grounded in the theoretical framework of the review, and inductive themes emerging directly from the data. Our thematic analysis was deeply rooted in the theoretical underpinnings provided by Priestley et al. (2015) and Biesta et al. (2015), which articulate the dimensions of teacher agency, including the iterational, projective, and practical-evaluative aspects. This theoretical lens facilitated a dynamic exploration of how these dimensions of teacher agency are shaped in digital ecosystems.

4.3 Overview of the Empirical Insights

This review draws on insights from 22 empirical studies to explore how teacher agency manifests in the realm of DE and the factors that impact it. The collection of studies, predominantly published within the last five years, reveals a growing scholarly focus on teachers' agentic role paralleling the rise of digital education—a trend substantiated by global policy shifts (OECD, 2019; UNESCO, 2021). The findings show a gap in the focus on teacher agency and digital integration in disadvantaged areas. Only one study from Australia by O'Mara et al. (2023) explored how teachers demonstrate their agency in disadvantaged schools. Regarding the subject of studies, participants were often teachers teaching in specific subjects, like science teachers (Andrée & Hansson, 2021; Deed et al., 2014) or language teachers, who received particular attention from Chinese scholars (Chen, 2022; Gao & Cui, 2022; Gong et al., 2021; Wei(魏) et al., 2022). **Table 4.2** presents the descriptive characteristics of these studies. Based on the selected articles, the systematic review identifies key conceptual, methodological, and thematic trends in teacher agency within digital education settings.

Table 4.2. Characteristics of included studies

Author(s) and year	Study setting (region/country)	Language and level of education & participant	Study design
Arantes, J & English Buchanan, R (2022)	Australia	K-12 teachers (have used or are using commercial apps and platforms)	Qualitative research using semi-structured interview

Deed et al., (2014)	English	Australia	Junior secondary college, one teacher in a class (and students)	Qualitative research using case study, interview & classroom observation
Domenach, F., Araki, N., & Agnello, M. F. (2021)	English	Japan	Primary school teachers	Qualitative research using participatory action research methodology
Knussen, L., & Agnew, A. (2022)	English	Not specified	Early career teachers who are graduates from teacher education programs	Qualitative study using literature review and semi-structured interviews
Kristiawan, D., Carter, C., & Picard, M. (2022)	English	Indonesia	Senior High Schools, EFL teachers	Qualitative study using a Participatory Action Research approach
Perrotta, C. (2017)	English	England and Six countries	Secondary school teachers within European theory, involving interviews and focus groups	Qualitative research grounded
Vandeyar, T. (2021)	English	South Africa	Primary school teachers	Qualitative research using instrumental case study design
Dong (董) et al., (2019)	Chinese	China	High school teachers	Quantitative cross-sectional study using surveys/questionnaires
Shi (石), 艳东 (2020)	Chinese	China	Teachers from different grades and subjects, teaching in key schools across China.	Qualitative study using interviews

Wei (魏), 海苓 ; Liu (刘), 建达; & Tian (田), 璐 (2022)	Chinese	China	Hhigher education, teachers	Mixed method with explanatory sequential design
Andrée, M., & Hansson, L. (2021)	English	Sweden	Compulsory schools, Science and technology teachers	Qualitative research using focus group methodology
Carlsen et al., (2016)	English	Not specified	Early education, kindergarten teachers	Qualitative observational study
Chen, M. (2022)	English	China		
Damşa et al., (2021)	English	Norwegian	Higher education, teachers	Qualitative case teaching study Chinese as a second language
			Higher education, academic teachers	Qualitative study using a cross-sectional research design
Digón-Regueiro et al., (2021)	English	Spain	Primary school teacher	Qualitative research with an intrinsic case study
Gao, Y., & Cui, Y. (2022)	English	Beijing, China	Higher education, EFL teachers	Qualitative exploratory case study
Gong, Y., Fan, C. W., & Wang, C. (2021)	English	Macau, China	Higher education, teachers teaching using instrumental case study design	Qualitative research Chinese as a second language
Larke, L. R. (2019)	English	England	Primary school teachers (and students)	Qualitative research using ethnographic case study
Lim, W.-Y., Lee, Y.-J., & Hung, D. (2008)	English	Singapore	Primary school teacher	Qualitative case study
O'Mara et al., (2023)	English	Australia	Primary school teachers	Qualitative case study

Reinius et al., (2022)	English	Helsinki	primary and secondary school teachers	Qualitative research using semi-structured interview
Stenalt, M. H., Johnson, M. W., & Aagaard, J. (2023)	English	Denmark	Higher education, social sciences teachers	Qualitative exploratory study

Most of the studies included in this systematic review adopt qualitative approach to teacher agency as shown in Table 4.2, due to its ability to capture the complexities of teacher decision-making, policy negotiation, and emotional engagement with digital technologies. Quantifying teacher agency remains methodologically challenging due to its fluid, situated, and socially mediated nature (Gao & Cui, 2022). These methodological insights also informed this study's research design, which explores how rural teachers enact agency in response to DE, as will be detailed in Chapters 5 and 6.

4.4 Mapping the Landscape of Teacher Agency in the Digital Context

This section presents the empirical patterns identified in the reviewed studies, focusing on how teacher agency is enacted within the digital context. Based on a systematic synthesis of the literature, these patterns are organised across three interrelated levelsindividual, institutional, and systemic-illustrating that teachers' capacity to act is influenced not only by access to technology and training, but also by broader social, cultural, and policy conditions.

4.4.1 Teacher agency at the individual level

At the individual level, teacher agency is demonstrated through teachers' actions in the classroom, their ability to adapt and innovate, and their efforts to overcome challenges

in digital education (Arantes & Buchanan, 2022; Chen, 2022; Damşa et al., 2021; Digón-Regueiro et al., 2021; Domenach et al., 2021; Gao & Cui, 2022; Larke, 2019; Stenalt, 2021; Vandeyar, 2021). This includes how teachers make decisions about using digital tools, adapt their teaching strategies to meet students' needs, and develop confidence in navigating digital platforms. For instance, in the study by Arantes & Buchanan (2022), they examined the agency of teachers in deploying digital technologies in K-12 classrooms and sought to understand the role of *teacher influencers* [2] in integrating commercial apps and platforms into their educational practices. Three main ways were identified-sharing, enabling, and freelancingdemonstrated the agency of teachers in their use of digital technologies. Their expertise in digital tools empowered them to share knowledge, enable peers, and, in some cases, pursue freelancing opportunities through EdTech products or services for financial gain. These agentic behaviors capture how teachers navigate digital tools, demonstrating their capacity to use, share, and negotiate technology and digital for better educational practices even for personal interests.

Additionally, the review identified a theme of 'adaptive pedagogical strategies', which demonstrates teacher agency in the integration of technology. A significant insight from studies (Chen, 2022; Damşa et al., 2021; Shi(石), 2020; Wei(魏) et al., 2022) is that teachers adapted their teaching methods in innovative ways, using digital tools to

[2] Teachers who are typically early adopters of technology, who in disseminating their practice on social media have amassed large followers, and therefore have substantial but informal influence within the education sector (Shelton & Archambault). In Arantes & Buchanan's (2022) research, identified teacher influencers as teachers who have used or are using commercial apps and platforms within 12 months of the interview.

enhance learning despite external challenges such as COVID-19 pandemic. Evidence from Damsa et al. (Damşa et al., 2021) suggests a spectrum of teacher responses to the integration of digital technologies into pedagogical practices in the context of Norwegian higher education during Covid-19 lockdown. Some teachers exhibit what might be considered an 'occlusive agency,' where they are constrained by inadequate technical infrastructure and underdeveloped digital competence. This limited form of agency correlates with an iterational, non-transformative stance, in which teachers may resist change and replicate traditional teaching practices in an online format without significant innovation or adaptation. Similar patterns were observed in the Chinese context by Shi (Shi(石), 2020).

In contrast, others display the 'practical-evaluative agency,' characterised by teachers who tried out new methods and technologies, evaluated their effectiveness, and made adjustments based on experiences. These teachers showed a willingness to change and improve their teaching practices but did not indicate explicit plans for future transformation (Damşa et al., 2021). Teachers' proactive adaptation to online teaching, as shown by Stenalt (2021), further underscores their commitment to maintaining educational continuity, reflecting significant digital competence and pedagogical innovation agility. These instances align with Biesta et al.'s (2015) discussion on capacity and situational judgment, and illustrate the "practical-evaluative" dimension of teacher agency (Priestley et al., 2015), where teachers assess their immediate context and make informed decisions that directly impact their instructional approaches.

Teachers exhibit agency through the development and application of digital skills to improve student engagement and educational outcomes. These studies (DigónRegueiro

et al., 2021; Domenach et al., 2021; Gao & Cui, 2022; Larke, 2019; Vandeyar, 2021) reveal that teachers are not passive recipients of technology, but active participants who engage with digital tools to forge meaningful educational experiences. Teachers develop digital competence that allows them to integrate technology into their pedagogy effectively (Domenach et al., 2021). This competence is crucial for navigating the challenges posed by curriculum constraints (Larke, 2019) and restrictive policies (Vandeyar, 2021). The mastery over digital tools also supports the development of teachers' professional identities, influencing how they perceive their roles and capacities within educational settings.

Moreover, teachers engage in self-initiated professional development to enhance their digital skills, directly impacting their pedagogical practices. As exemplified in studies (O'Mara et al., 2023), external support-such as technology-integrated workshops, professional training, participating in the development and implementation of digital curriculum initiatives-provided teachers with opportunities to exercise their agency in the classroom. However, professional development is more effective when aligned with teachers' specific contexts, as it allows them to engage with pedagogical practices while enhancing their technological, pedagogical, and content knowledge (TPACK), as shown in Kristiawan et al. (2022). This enabled teachers to demonstrate agency and supported them in more confidently developing their own material and activities, resulting in better integration of digital technology in teaching.

The evidence suggests that teachers exercise their agency when they actively engage with technology and recognise its role of technology in their daily teaching practices. For example, in Andrée & Hansson's (2021) study, teachers reported using various digital media

formats-such as films, TV programs, YouTube clips, and digital calendars-as part of their teaching. They integrated technology-based resources as additional materials, study aids, or for their own background reading, showcasing their agency in utilising technology to enhance teaching practice.

Additionally, teachers not only respond to immediate needs but also integrate digital tools in ways that reflect their pedagogical beliefs and values (Digón-Regueiro et al., 2021; Gao & Cui, 2022; O'Mara et al., 2023). Digón-Regueiro et al. (2021) described how a teacher, despite perceiving herself having limited digital competence, believed that it was important to introduce technological resources to keep up with the society that her students live in and motivated to integrate ICT into her classroom. The teacher exercised agency by employing a project-based learning approach supported by technology. However, the teacher's deterministic, instrumental, and optimistic view of technology hinders critical reflection and led to the imposition of technology use without full awareness of the contextual factors affecting teaching.

Researchers have noted that a teacher's values and agency are shaped not only by their individual beliefs, goals, knowledge, and skills, but also by broader institutional logics, professional relationships, and dominant cultural norms. These institutional-level factors can either support or constrain teachers' ability to act with autonomy and purpose (Perrotta, 2017). In contrast, studies such as those by Deed et al. (2014) and Andrée and Hansson (2021) provide examples of teachers exercising agency by actively critiquing and selecting digital resources—rather than adopting them passively—in order to support students' problem-solving and learning continuity. These cases demonstrate that agency involves more than simply following institutional

directives; it also includes critical evaluation and professional judgment in response to available digital tools.

Taken together, these findings illustrate the complex and evolving role of teachers in digital education contexts. Teachers are not passive recipients of reform. They are active agents who engage with, adapt, and negotiate digital technologies in ways that serve not only pedagogical goals but also their own professional values and interests. Viewed through an ecological lens (Priestley et al., 2015), this agency is shaped by an interplay of factors—including past experiences, digital beliefs, and current working conditions. These factors influence both how teachers make sense of digital practices and how they act upon them. This interaction reflects the iterational (informed by past experiences) and practical-evaluative (responsive to present conditions) dimensions of agency, highlighting the situated and dynamic nature of teachers' engagement with the digital world.

4.4.2 Teacher agency at the institutional level

At the institutional level, teacher agency is shaped by collaboration within schools, professional learning opportunities, and the broader school culture regarding digital education (Andrée & Hansson, 2021; Deed et al., 2014; Knussen & Agnew, 2022; Larke, 2019; Lim et al., 2008; Reinius et al., 2022). Teachers often rely on peer support, professional networks, and leadership initiatives to develop their digital teaching practices. Andrée & Hansson (2021), for example, illustrate how a teacher's agency evolved through a combination of failure, resource constraints, and social capital.

Initially, the teacher faced resistance when integrating digital learning into the lessons, particularly due to prevailing beliefs that technology-based learning was only beneficial

for high-achieving students. However, by refining this teacher's technology skills through institutional training, seeking recognition beyond her school, and engaging in collaborative discussions with colleagues, she gradually influenced change within the school.

This teacher's successful transformational experience, as described by Andrée and Hansson (2021), was found to inspire the teacher's identity as a researcher, strengthened the belief in the power of technology, and challenged traditional teaching methods, initiating a shift towards student-centred learning with technology integration. The presence of structural affordances, such as the action research programme, teaching low-achieving students with technology, and the recognition through awards, provided the necessary context for teacher agency to manifest and thrive. This case emphasises the importance of a supportive professional environment in promoting effective technology integration in schools.

The fostering of collaborative forums and mentoring partnerships catalyzes this integration, enabling educators to innovate despite resource limitations (Chen, 2022; Damşa et al., 2021) and systemic support issues (Vandeyar, 2021), highlighting support networks are pivotal at this level. As noted by Knussen and Agnew (2022), expert teachers can catalyse digital transformation by taking on mentorship roles that enhance the agency of less experienced colleagues. These networks do not merely support digital skill development but also foster a culture of shared learning and innovation that is critical for sustaining digital integration efforts across educational institutions. In addition, (Reinius et al. (2022) showed that when teachers were supported by school leaders and the Education Department in providing resources, time and support for

teachers' professional activities, their transformational professional capacity, including their use of technology was enhanced.

Moreover, teacher-student collaboration demonstrates an important aspect of teacher agency. Deed et al. (2014) demonstrated the interdependent relationship that exists between teachers and students in the context of an open, technology-supported classroom. Both parties contribute to the creation of a learning environment that promotes personalised learning. From the teacher's perspective, supporting student agency requires teachers to intentionally challenge traditional approaches by coregulating learning and creating a culture that supports student independence, thereby enabling dynamic and engaging learning experiences. Co-regulation involves a collaborative approach in which both teachers and students actively participate in the teaching and learning process. The research underscores the need for teachers to harness contextual dynamics to design purposeful tasks and implement effective teaching practices. This collaborative process not only fosters community and shared knowledge but also enhances the collective digital competence of the faculty, thereby supporting broader educational practices. This reflects the values of digital education - using technology for pedagogical change is not only about using technology for teaching and learning, but also about using digital tools to strengthen connections in extended learning communities (James & Pollard, 2011).

This synthesis suggests that enhancing teacher agency at the institutional level requires not only individual competencies but also supportive institutional structures that foster collaborative practices and provide the necessary resources and autonomy to innovate. From an ecological perspective, these findings emphasize the "practical-evaluative" dimension of

teacher agency, where structural and shared practices influence current actions and future planning. As Priestley et al. (2015) suggest, iterative reflection on past interactions with digital tools shapes teachers' readiness to engage with technology, thus enhancing their agency in mediating between institutional policies and classroom needs.

4.4.3 Teacher agency at the systemic level

At the systemic level, teacher agency interacts with broader cultural and structural elements that define the educational landscape. For instance, Andrée & Hansson (2021) and Larke (2019) demonstrate that the systemic factors play a significant role in shaping teachers' ability to integrate digital technologies effectively. Developing digital confidence through experience, and participating in policy and curriculum planning to foster digital accountability, are key factors influencing how teachers integrate digital technologies into their pedagogical practices.

It also underscores the profound impact of structural and policy environments on teachers' ability to exercise agency. For instance, Domenach et al. (2021) examined the challenges teachers faced in Japan's digital education reform, particularly the introduction of programming education. Their findings revealed that unclear government directives, a lack of resources, and inadequate teacher training resulted in uncertainty and anxiety among teachers. This highlights a disconnect between policy intentions and classroom realities, which can constrain teacher agency. This gap then caused teachers' concerns and anxiety about the digital teaching practices (Domenach et al., 2021). Participation in teacher training workshops helped reduce teachers' concerns and anxiety. Teachers began to recognise the benefits of teaching both programming and English, and found alternative ways to approach the curriculum

reform during its implementation. This underscores the importance of systemic support, showing that while national policies set the direction for digital transformation, their success depends on how well they align with teachers' realities and professional development needs.

O'Mara et al.'s (2023) exploration of digital curriculum implementation in disadvantaged Australian schools' further attests to the gaps engendered by the digital divide and its entanglement with the situated, professional, material, and external contexts. Their study found teacher's agency is influenced by and connected to the context of disadvantage, where teachers navigate structures and practices with limited control but still demonstrate professionalism and strive for positive outcomes. Similarly, research shows that through interventions such as professional development and opportunities to engage in practice and curriculum design-that focus on improving technological literacy-can enhance teachers' sense of agency in digital contexts (Knussen and Agnew, 2022; Damşa et al., 2021; Chen,2022). In certain conditons, teacher and student agency can overcome the structural barriers embedded in external contexts. Thus, the research emphasises the importance of understanding and responding to contextual factors to support curriculum implementation and enhance agency in disadvantaged schools. Despite numerous policy and structural constraints in implementing digital education, our review identified teachers exercise agency within and against systemic structures.

In summary, analysis of teacher agency across individual, institutional, and systemic levels reveals the deep interconnections among personal action, organisational support, and structural conditions. Teachers' ability to exercise agency is not only shaped by

personal competence but also by the institutional and policy environments in which they operate.

4.5 Conceptual Trends and Gaps in the Literature

The previous section 4.3 offered a detailed synthesis of the empirical and methodological trends within the literature on teacher agency in digital contexts. This synthesis highlighted a growing research interest in how DE reforms intersect with teachers' professional practices, particularly in relation to individual capacities, institutional cultures, and systemic constraints. However, a critical gap remains in the conceptualisation of agency itself—specifically, how traditional understandings of teacher agency can be rethought to account for the complexities introduced by digital transformation.

4.5.1 Teacher agency is widely acknowledged but unevenly theorised

The most common conceptual approach in the reviewed literature was rooted in the socio-cultural perspective, introduced in Chapter 3.4. Within this perspective, the ecological approach to teacher agency (conceptualised in Section 6.3.1) was the most widely used framework, emphasising how teacher agency is shaped by structural affordances, pedagogical beliefs, and institutional constraints (Priestley et al., 2015; Biesta & Tedder, 2006). Several studies (e.g., Kristiawan et al., 2022; Andrée & Hansson, 2021; O'Mara et al., 2023; Chen, 2022; Deed et al., 2014; Digón-Regueiro et al., 2021) explicitly adopted this triadic structure, applying it to contexts of reform or innovation in which teachers must negotiate external expectations and their own pedagogical values.

Across the reviewed literature, Priestley et al.'s (2015) ecological approach to agency was applied to explain the interactions between teachers' professional beliefs, school culture, and systemic policies (Perrotta, 2017; Andrée & Hansson, 2021). However, most studies were guided by diverse and sometimes overlapping conceptions of teacher agency and its relationship to technology use. While some research discusses teacher agency implicitly, it often lacks a clear theoretical grounding (e.g., Wei et al., 2022; Gong et al., 2021; Domenach et al., 2021)-a gap that is particularly evident in studies focusing on the Chinese education context.

Other studies drew on complementary sociocultural or practice-based perspectives, conceptualising agency as contextually embedded and relational. For example, Vandeyar (2021) and Lim et al. (2008) situate teacher agency within local cultural norms and institutional constraints, using frameworks such as Sutton & Levinson's (2001) policy appropriation model or Swidler's (2001) cultural toolkit theory. Perrotta (2017) juxtaposes instrumentalist views of action (e.g., teacher agency M models) with more sociological approaches, ultimately advocating for a nuanced, culturally sensitive understanding of teachers' technology use that accounts for both rational decisionmaking and symbolic or emotional practices. Postdigital theory, as discussed in Arantes & Buchanan (2022), also features in several studies as a conceptual tool for understanding how teacher identities are reshaped in datafied, and platform-driven educational spaces.

Despite this conceptual richness, many studies do not clearly define or operationalise agency. A number of papers—particularly those set in the Chinese context (e.g., Wei et al., 2022; Gong et al., 2021)—refer to agency in general terms, drawing from a range

of domestic and international sources, but often without anchoring their discussion in a cohesive analytical framework. This reflects a broader trend: while teacher agency is widely acknowledged as important, there remains a lack of conceptual rigour in its application, especially in empirical studies from non-Western settings. Moreover, although some studies (e.g., Digón-Regueiro et al., 2021; Larke, 2019) apply multilevel frameworks to explore agency at macro, meso, and micro levels, few explicitly analyse how these levels interact to shape teacher decision-making. This limits the explanatory power of their findings and obscures the structural dynamics that underpin individual actions.

4.5.2 Emerging but underdeveloped concept of digital agency

While teacher agency has received growing theoretical attention in relation to educational change, its intersection with digital education remains comparatively under-theorised. As discussed in the preceding sections, most of the reviewed literature engages with teacher agency in general terms (often drawing on sociocultural or ecological models). While references to digital competence and confidence often framed as individual capacities rather than elements embedded in institutional cultures or policy ecologies.

Emerging from this gap is the concept of digital agency, developed by Passey et al. (2018) (see Section 6.3.2), as distinct yet overlapping with teacher agency. While Knussen & Agnew (2022) are the only researchers who explicitly ground their study in this concept, other studies implicitly reflect its core components. For instance, Lim et al. (2008) and Gong et al. (2021) examine how teachers develop technological

competence, integrate digital tools into their teaching, and navigate institutional support structures to enhance their professional autonomy. Similarly, Perrotta (2017) highlights that teacher agency in digital education is closely linked to digital literacy, infrastructure availability, and institutional support. The tripartite view of digital agency complements the ecological understanding of teacher agency by situating teachers' technological practices within broader social and institutional contexts. It acknowledges that digital engagement is not just technical but deeply embedded in cultural values, power relations, and pedagogical beliefs (Selwyn, 2011; Starkey, 2017).

While some elements influencing digital agency have been identified, the depth and nature of these interactions are still under-researched, as highlighted by Passey et al. (2018). Furthermore, as noted by Stenalt (2021), discussions around digital agency often overlook its implications within the educational context. This critique underscores a broader issue within the field: the predominant focus on the digital agency of students or learners (e.g., Aagaard & Lund, 2020; Goriss-Hunter et al., 2022; Stenalt, 2021), with comparatively less attention paid to teachers. Moreover, studies such as Knussen & Agnew (2022) and Damşa et al. (2021) explore elements of digital competence and confidence, yet do not frame them within a coherent concept of agency. Other work (e.g., Arantes & Buchanan, 2022) highlights the social and commercial dynamics of teachers' digital practices, but stops short of theorising how teachers' decision-making power is shaped or constrained by these environments.

In this sense, structural constraints and affordances shape digital agency, much like they do with broader teacher agency. Prior research suggests that teachers' beliefs, confidence, and autonomy significantly influence how they integrate technology into

pedagogy (Ertmer et al., 2012; Tondeur et al., 2017). Teachers with higher digital confidence are more likely to experiment with new tools and transform their teaching practices, whereas those with lower confidence may struggle with implementation or use digital tools in a more limited, performative manner. This aligns with Priestley et al.'s (2015) ecological model, where structural constraints, cultural expectations, and individual digital biographies collectively determine the extent to which teachers can exercise digital agency.

Moreover, digital agency foregrounds the dynamic and evolving nature of agency in the digital era. As Selwyn (2013) argues, digital technologies are not just instrumenting but part of the socio-material context in which teaching and learning occur. Teachers are continually required to adapt to new platforms, policies, and expectations; meaning their agency must also evolve accordingly (Philpott & Oates, 2017). In this sense, professional development becomes a key site for nurturing both teacher and digital agency. Collaborative learning environments—where teachers co-create digital resources, exchange practices, and reflect on their technological use—have been shown to boost digital confidence and pedagogical ownership (Kafyulilo et al., 2015; Voogt & Tondeur, 2015). These opportunities feed directly into the iterational dimension of agency, as teachers draw on professional learning to inform future decisions and shape their digital teaching identities.

However, digital agency remains conceptually fragmented and under-theorised in most studies. Most studies conflate digital agency with confidence or skill, failing to account for accountability, contextual pressures, or policy discourses. This gap has therefore

informed the development of an analytical framework tailored to the research aims in this study. This gap will be further discussed in Section 6.3

4.6 Summary

This systematic review has critically explored the manifestations of teacher agency in digital contexts. It illuminates how teachers actively shape their professional identities and pedagogical approaches through engagement with digital technologies. Significantly, the findings underscore the critical role of digital competence in enhancing teachers' ability to effectively utilise technology, thereby reinforcing their agency in educational settings. The interdependence of digital confidence and accountability highlights how empowered teachers navigate digital transformations, advocating for responsible and ethical technology use. Moreover, this review offeres a detailed synthesis of the empirical and methodological trends within the literature on teacher agency in digital contexts.

Importantly, the conceptualisations of teacher agency and digital agency offer a more contextually grounded and theoretically robust lens for analysing how rural teachers engage with DE reform. The transformation of education through digitalisation has fundamentally reshaped teaching and learning, requiring a deeper examination of teacher agency within this evolving context. As digital technologies become embedded in classrooms, teachers are no longer just implementers of policy but active agents navigating, adapting to, and shaping digital education practices. In this sense, agency extends beyond teachers' traditional professional judgment to encompass their digital engagement, decision-making, and capacity to integrate technology meaningfully into pedagogy. To fully explore these dynamics, this study draws on the concept of Digital

Agency, as conceptualised by Passey et al. (2018), which offers a nuanced framework for understanding how teachers negotiate their roles in digital environments. Building on these insights, this study developed and adopted a conceptual framework to underpin this study, which will be introduced in Chapter 6.

This study also recognised that this review faced several limitations, including language restrictions to English and Chinese. This narrowed the global perspectives and potentially overlooking valuable research in other languages that could offer additional insights into teacher agency in different cultural contexts. Additionally, the limited number of studies reviewed may not fully represent the complexity of digital transformations in education globally. Future studies should also explore how systemic barriers, particularly in disadvantaged settings, interact with teacher agency. In addition, critically analysing policies that impact teacher agency and teaching practices may provide further insights into digital integration. Another key limitation of this systematic review lies in its temporal scope. The review was conducted in 2023 and completed in early 2024 as part of the broader doctoral research project. As such, the literature reviewed reflects research published up to that point. While it captures the major conceptual and empirical trends relevant to teacher agency in digital education, more recent studies published thereafter are not included in the review itself. To partially address this limitation, Section 6.3 integrates selected recent publications that extend and update the insights presented here, particularly in relation to emerging discussions on digitally mediated teaching practices.

5. Research Methodology and Research Design

5.1 Introduction

This chapter outlines and justifies the methodological choices made in this study, which investigates how rural teachers in China engage with DE reform and exercise agency in navigating policy demands, school-level expectations, and resource constraints. It details the philosophical orientation, research design, and qualitative methods employed. It begins by outlining the philosophical and theoretical foundations of the research design, followed by a detailed explanation of the research methods used, including document analysis, semi-structured interviews, and classroom observations. It then presents ethical considerations and reflections from the pilot study are presented, respectively. The chapter concludes by linking these design choices to the structure and aims of the data collection and analysis presented in Chapter 6.

5.2 Methodology and Research Design

This section outlines the philosophical foundations, reflexive stance, and research design that guided this study. It is organised into three interrelated parts: (1) research paradigm, (2) researcher reflexivity and positionality, and (3) research design. Together, these provide the methodological justification for exploring teacher agency in the context of DE reform in rural China.

5.2.1 Research paradigm

This research was designed to address the following research questions (detailed in Chapter 1):

RQ1: How is DE framed in Chinese educational policies, and what are the implications for educational practices?

RQ2: How is DE Implemented in Rural China and how do rural teachers experience and respond to DE reform in practice?

RQ3: How does teacher agency manifest in integrating digital technology within rural schools, and what factors influence it?

These questions required a research design capable of interpreting meaning, capturing lived experiences, and interrogating the structures shaping practice. To do so, I adopted an interpretivist paradigm with a critical and ecological orientation, which positions knowledge as socially constructed and context-dependent (Guba & Lincoln, 1994; Tisdell et al., 2025). This paradigm assumes that reality is shaped by people's experiences within cultural, structural, and historical contexts (Schwandt, 2014; Cohen et al., 2018). This view aligned closely with the ecological framework of teacher agency (Priestley et al., 2015), which considers teacher action as situated within and influenced by past experiences, institutional settings, and future goals.

From an epistemological perspective, the interpretivist paradigm holds that knowledge is constructed through human interaction—between individuals and their contexts, and between researchers and participants. This view rejects the idea of neutral observation; instead, it recognises that meaning is co-produced within a particular time and space (Creswell & Creswell 2017; Mertens, 2005). The interpretivist approach made it

possible to explore how agency was shaped through teachers' engagement with these factors in their day-to-day work. Aligned with this paradigm, I approached the study with the understanding that participants' experiences were not simply waiting to be discovered as objective facts. Rather, they became meaningful through processes of interpretation and reflection (Cohen et al., 2018).

5.2.2 Research design

Guided by the above paradigm, I adopted a multi-method qualitative design, followed an abductive logic of inquiry (Timmermans & Tavory, 2012), which enabled interative movement between theory and data. As described by Morgan (2020), moves between inductive insights from the field and deductive reflections based on existing theory. This approach has proven valuable in this study, where field encounters often surfaced unexpected practices or perspectives, prompting a revisiting of earlier assumptions and a refinement of conceptual categories. For example, teachers' accounts of their use of digital technology revealed tensions between policy rhetoric and classroom realities—an interpretive space that could not have been fully anticipated in advance. The qualitative research design was therefore well suited to exploring the depth and complexity of teachers' lived experiences. As Braun and Clarke (2022) emphasise, qualitative research, particularly when approached reflexively, enables rich exploration of meaning-making processes situated in specific contexts. While Braun and Clarke (2022) do not specifically address teaching, their methodological guidance on qualitative inquiry and reflexive thematic analysis is applicable to the study of meaningmaking in educational contexts. In this study, such an approach proved effective for analysing how teachers negotiate digital reform within their localised professional

realities.

The study began with a critical policy analysis to address RQ1, followed by fieldwork using multi-case studies (Yin, 2018) to explore RQ2 and RQ3. This structure enabled a layered understanding of how rural teachers interpreted, adapted to, and shaped digital reform agendas. The policies often act as tools of soft governance—subtly guiding behaviour in line with Foucauldian notions of disciplinary power (Ball & Grimaldi, 2021). These policy representations may influence how teachers understand their professional identities and roles, while impact their practices. Importantly, this discourse of empowerment is not ideologically neutral. Rather, it serves broader state interests while often overlooking the structural and professional challenges that rural educators face (Grimaldi, 2012). This results in a complex interplay between stateimposed ideals and lived teacher identity—what Bernstein (1996) terms official pedagogic discourse. These discourses shape not only the way teachers are talked about but also how they think, act, and are evaluated in practice. In this way, policy operates not merely as background context, but as an active and causal mechanism influencing classroom practices and decision-making. This critical reading of policy was closely tied to the ecological approach to teacher agency adopted in the study. Through this lens, policy is not just a directive but a structuring context that interacts with teachers' personal histories, professional values, and local school cultures (Priestley et al., 2015). In other words, policy is not external to agency, it is part of the ecology in which agency is enacted.

The critical analysis of policy texts therefore served three key purposes in the research design. First, it provided a macro-level lens for situating school and classroom practices within broader systemic agendas. Second, it helped uncover the discursive assumptions and normative ideals that shape how teachers are expected to act, particularly in rural contexts. Third, it created a foundation for triangulating findings from interviews and classroom observations, allowing for a deeper understanding of how policy ideas are taken up, reinterpreted, or resisted in practice. As Robinson (2012) has shown, teachers' professional agency often emerges not through passive compliance but through subtle acts of negotiation and adaptation, even when working within systems characterised by top-down accountability pressures.

Following the policy analysis, I conducted fieldwork in rural schools. This was informed by the understanding that social and cultural factors, as well as the local environment, form part of the ecology from which agency emerges (Priestley et al., 2015). Understanding these factors was essential to exploring rural teachers' agency. My own rural upbringing and researcher identity supported this process, helping me navigate relationships in the field and interpret participants' experiences within their historical, cultural, and institutional settings (Bryman, 2016).

During the fieldwork, I employed semi-structured interviews, classroom observations, and collected contextual school data to build a nuanced understanding of teachers' decision-making processes. These methods were particularly valuable for exploring how teachers made real-time judgements in light of competing demands. To allow a comparative analysis of different teaching contexts, a multi-case study method was adopted (Yin, 2018; Stake, 2006). This approach does not aim for statistical

generalisation but relies on replication logic, where each case is treated as an opportunity to explore theoretical propositions (Yin, 2009). Comparing cases across different schools allowed me to examine how diverse structures, leadership styles, and policy environments shaped teachers' digital engagement and professional agency. This approach aligned well with the ecological framework, which emphasises contextually embedded and differentiated expressions of agency (Priestley et al., 2015).

Thus, each case represented a distinct real-life setting, what Simons (2009) describes as the investigation of a specific project, policy, institution, or system from multiple perspectives to illuminate its complexity and uniqueness. This allowed the research to generate authentic accounts of digital teaching practices in the social-political context. Ultimately, structuring the research in this way enabled a multi-layered analysis of how DE reforms were interpreted and enacted in rural schools. This approach provided a holistic understanding of teacher agency, capturing both the structural constraints imposed by policy and the ways teachers actively responded to them.

5.2.3 Researcher reflexivity and positionality

Reflexivity is a central tenet of qualitative research, particularly within interpretivist and critical paradigms. It demands that researchers consider how their own backgrounds, beliefs, and positionalities influence the research process and knowledge produced (Berger, 2015; Dwyer & Buckle, 2009; Gair, 2012). This study, grounded in a critical, interpretivist, and ecological framework, required continuous reflexive engagement, particularly given my personal connection to the field as a researcher with rural origins in China. As many scholars have highlighted that the personal position of

the researcher is not merely a backdrop to data collection but actively shapes the dynamics of interaction, the framing of questions, and the interpretation of meaning (Berger, 2015; Dwyer & Buckle, 2009). My dual identity—as someone who grew up in a rural Chinese family and later became a doctoral researcher trained in a Western academic institution—positioned me simultaneously as both insider and outsider during fieldwork. This hybrid status influenced how I entered the field, built relationships, and co-constructed meaning with participants.

In the context of interviews and observations, my rural upbringing enabled a deep level of cultural familiarity and shared understanding with participants. Kanuha (2000) defines insiders as those who study communities to which they themselves belong. By sharing my own experiences of navigating rural schooling and social mobility—from a farming background to becoming a researcher—I was able to establish rapport and trust. Teachers often opened up about the significance of academic achievement as a means of upward social mobility, a theme that resonated with my own life journey. In many cases, this shared background encouraged participants to be more candid and reflective about their personal experiences, challenges, and professional motivations. For example, several teachers recounted their journeys from rural hardship to becoming educators, framing this transition as a form of social mobility. When I shared parts of my own story, they often responded with warmth and mutual recognition. These moments of connection broke down barriers and fostered a research environment grounded in empathy and mutual respect.

However, this insider status was also a double-edged sword. After conducting the first few interviews, I became acutely aware that shared experience could lead participants to assume a common understanding without elaborating their own perspectives. One teacher remarked, “You’ve had a similar experience—you know how I feel”. While this confirmed rapport, it also risked flattening the diversity of participants’ views. Their assumptions about my understanding occasionally led to less detailed narratives or unspoken meanings. This echoed Berger’s (2015) caution that researchers must “carefully self-monitor the impact of their biases, beliefs, and personal experience on their research” (p. 220). To mitigate this, I consciously adjusted my interview style to include more probing follow-up questions, encouraging teachers to express their experiences in their own terms. I also became more restrained in disclosing my own perspectives, especially when participants began asking me questions like, “What do you think?” or “What would you do if you were me?”. I avoided providing direct answers in these moments to prevent influencing their views. As Berger (2015) notes, the researcher’s position can “affect the information that participants are willing to share” (p. 220), making it crucial to maintain awareness of relational dynamics throughout fieldwork.

Alongside my insider status, I also occupied the role of an outsider listener—what Letherby (2003) calls the friendly stranger. This position, unlike that of a real friend, exists purely within the scope of the research relationship and often creates a safe, nonjudgmental space for participants to express private or sensitive thoughts. Several teachers found comfort in talking to a non-judgemental stranger who listened without the social expectations or consequences that come with personal relationships. In this

sense, I acted as a temporary confidante—offering a space for reflection and voice, while assuring anonymity and non-intervention.

This dual positioning as both insider and outsider enhanced the richness of the data while also presenting interpretive challenges. As Gair (2012) argues, insider-outsider positioning is not static but continuously negotiated and requires the researcher to remain aware of shifting boundaries and their implications. Throughout the research process, I kept a reflective journal to track these dynamics and the effect they had on interview responses, power relations, and emerging themes.

Beyond the practical dynamics of fieldwork, reflexivity was also embedded in the critical orientation of this study. I understood that participants' experiences were not neutral data points but contextually situated narratives, co-constructed through our interactions. These narratives were then further interpreted through my theoretical lens—shaped by my academic training, political commitments, and conceptual assumptions. I was constantly aware that my framing of questions and my analysis of findings were acts of interpretation, not mere reporting.

This reflexive awareness was closely tied to the critical stance I adopted to move beyond surface-level descriptions of teacher behaviour or attitudes toward digital technologies. Rather than viewing data in isolation or taking participants' accounts at face value, I sought to situate their experiences within broader structural, institutional, and policy contexts. This approach was informed by Bhaskar's (2013) critical realist ontology, particularly his notion of a stratified reality: comprising the empirical (what is experienced), the actual (what occurs, whether observed or not), and the real (the underlying generative mechanisms). In this framing, the teacher interviews and

classroom observations granted access to the empirical and actual layers of reality, what rural teachers say and do in practice. Meanwhile, the policy analysis and theoretical framing were designed to uncover deeper structural forces, what Bhaskar (2013) would call the 'real', such as national policy discourses, performative accountabilities, and systemic inequalities. This multi-layered perspective enabled me to ask not only what teachers did, but why they acted as they did, and how broader pressures shaped their pedagogical decision-making and sense of professional autonomy.

My reflexive engagement also involved acknowledging the limits of representation. The process of analysing and writing about teachers' agency was inherently mediated by my own interpretations, theoretical commitments, and the discursive tools available to me. I was aware that teachers' voices were being translated and reframed through the lens of academic critique, which carries risks of both amplification and misrepresentation. To mitigate this, I made conscious efforts to preserve participants' contextual meanings and situated reasoning, particularly when their accounts diverged from policy narratives or conventional understandings of innovation and agency.

Finally, my reflexivity extended to the ethical and political dimensions of this research. As rural teachers are often marginalised in education policy discourses, I was sensitive to the risks of reifying deficit narratives or positioning them as merely passive recipients of reform. My goal was to highlight the complexity, creativity, and strategic agency embedded in their practices, while remaining attentive to the structural constraints they face. This reflexive and critical lens underpinned not only the analysis but the entire research design, and it was central to constructing a contextualised understanding of teacher agency in the evolving landscape of DE reform.

5.3 Research Methods

This section introduces the qualitative methods used in the study. It starts with an overview of the critical policy analysis approach, which helped examine how national DE policies in China. It then explains the methods used during fieldwork, and how these helped explore rural teachers' experiences and professional agency. These methods were selected for their ability to provide in-depth, context-based insights and to fit with the study's ecological and interpretive approach.

5.3.1 Policy analysis

To critically understand how rural teachers engage with DE reform, it was first necessary to examine the policy environment that frames their work. This study adopted documentary policy analysis as a core qualitative method to explore how DE policies define problems, shape expectations, and position teachers as agents of reform. The analysis was informed by a critical perspective, drawing particularly on Bacchi's (2009, 2012) "What's the Problem Represented to be?" (WPR) approach (see Section 6.6.1), which foregrounds how policies construct specific representations of problems and prescribe particular kinds of solutions.

In total, I analysed thirteen central policy texts published between 2010 and 2022. A full list and explanation of the selection criteria for these documents is provided in Section 6.4.1. These documents were selected based on their relevance to the national digital education agenda, rural education equity, teacher professional development, and broader structural reforms in China's education system. The documents include official strategies, action plans, white papers, and guidance documents issued primarily by the

Ministry of Education and related national authorities.

In addition to national-level policy documents, I also collected a second layer of documents during fieldwork in Sichuan Province (Bowen 2009). As Ball et al. (2011) emphasise, policy must be understood not merely as text, but as something enacted interpreted, negotiated, and re-contextualised within specific institutional settings. With this in mind, I gathered local government notices, school-level digital teaching plans, internal training materials, and informal enactments of policy directives. These documents were critical in constructing a more ecologically grounded understanding of how policy is lived and experienced in context. They provided valuable insights into the structural, cultural, and professional conditions that shaped teacher agency under localised DE reform. Importantly, they allowed me to trace how national policies were being translated into school practices, highlighting moments of both alignment and dissonance between official expectations and everyday teaching realities.

5.3.2 Semi-structured interviews

Semi-structured interviews were a key method in this study, used to explore how rural teachers in China responded to DE reform and how they exercised agency within their working contexts. This method allowed for guided yet flexible conversations (Cohen et al., 2018), allowing teachers to describe their experiences in their own words while also allowing me to follow up on points of interest and clarify responses where necessary. Such interviews are well-suited to qualitative research, particularly when the goal is to understand participants' perspectives in depth (Silverman, 2005; Flick, 2009).

In total, I conducted two rounds of interviews: primary interviews with rural teachers within the LY municipality in Sichuan Province and pos-class interviews with teachers whose classes were observed in this study. In the primary interviews, 26 participants took part, most of whom were interviewed face-to-face. A few interviews were carried out via a Chinese communication software WeChat, due to geographical distance or logistical constraints. Participant selection followed the sampling procedures outlined in Section 6.2, and their profiles are presented to ensure diversity in school type, teaching experience, and subject taught.

In addition to the main interviews, I conducted post-class interviews with the seven teachers who took part in the classroom observations (introduced in the section below). These follow-up interviews were held immediately after the lessons and were all face-to-face. They provided an opportunity for teachers to explain the thinking behind their teaching choices, reflect on the challenges they had encountered, and comment on how their classroom practices related to policy expectations or their own beliefs about teaching.

All interviews followed a semi-structured format, with questions organised into broad themes that reflected key aspects of the theoretical framework (see Section 6.3). The interviews were guided by the method of hierarchical focusing (Tomlinson, 2006), which allowed for a structured yet flexible approach. This approach was chosen for its effectiveness in qualitative research, providing structure while allowing flexibility for respondents to expand on their experiences (Lincoln et al., 2011). Through this method, I was able to explore how teachers' past experiences influenced their current perceptions and teaching practices. Additionally, semi-structured interviews facilitated

an in-depth understanding of why teachers held certain beliefs, attitudes, and values, particularly in relation to their use of digital technologies in the classroom (Briggs et al., 2012). This approach was particularly useful as it permitted me to ask follow-up questions, thereby eliciting richer responses and deepening my understanding of teachers' experiences and agency (Bryman et al., 2008). The interview process is detailed in Section 6.4.2.

5.3.3 Observations

While primary interviews offered insights into teachers' perceptions and reported practices, observations allow researchers to see these practices in action, providing a richer and more nuanced understanding of the actual implementation process (Merriam 1998; Hammersley and Atkinson 2019). Therefore, to gain a deeper understanding of how teachers in rural educational contexts implement DE, and how they exercise agency and factors impact their agency, I employed non-participatory classroom observations alongside post-class interviews.

The non-participatory approach allowed me to document teaching practices without directly intervening in the lessons, thereby preserving the natural flow of classroom interactions. This was particularly important for capturing the complex relationship between teachers' stated beliefs and their enacted practices in the context of DE. It also provided an empirical lens to assess how policy prescriptions translated into actual teaching practices in rural schools. As Jewitt (2012) notes, observations can help generate research subjects' accounts of an event, offering insights into their perspectives while also highlighting structures and expectations embedded in the teaching environment. Each observation was followed by a post-class interview as introduced in Section 5.3.2, which served as a reflective dialogue between me and the

observed teacher. This process helped to uncover the practical-evaluative dimension of teacher agency (Priestley et al., 2015), providing a valuable counterpoint to the classroom data. The full overview of observed classes and the selection of cases are presented in Section 6.4.2.

In line with the ecological approach to teacher agency (Priestley et al., 2015), I paid attention not only to classroom practices but also to the broader institutional and cultural settings in which teachers worked. I documented posters and displays, infrastructure layout, and interpersonal dynamics, which often communicated implicit values and school priorities—elements difficult to access through interviews alone (Ball et al., 2011). For example, school mottos, slogans promoting digitalisation, and images of 'model' teaching practices offered clues about how digital reforms were understood and encouraged locally.

5.4 Ethical Considerations

This study was guided by the ethical principles set out in the British Educational Research Association (BERA) Ethical Guidelines (2018) and the ethical procedures of Durham University's School of Education. Ethical approval was obtained prior to the commencement of the pilot and main study through the university's formal ethics application process. Ethical approval for this project was under the title "*Exploring Teachers' Digital Teaching Practices in China, Utilise Digital Agency Framework and Bourdieu's Theory*" (Reference no. *EDU-2023-02-09T09_56_49-dmmt45*, 08 March 2023). While the project has since undergone conceptual and methodological refinement, particularly with a shift from Bourdieu's theoretical lens to an ecological approach to teacher agency, the core focus on rural teachers and their experiences of digital engagement remains unchanged. These developments occurred in response to

field insights and supervisory team changes, and the research continued to uphold all original ethical commitments. Throughout the research process, including the pilot study, fieldwork, data analysis, and writing, I prioritised the well-being, privacy, and rights of all participants and was particularly mindful of the ethical challenges associated with working in rural school settings.

5.4.1 Pilot study and use of public media data

The pilot study involved the use of publicly available videos from the media-sharing platform Bilibili. These videos were selected as part of an initial exploration of teachers' digital practices in publicly shared classroom contexts. As noted in the growing body of literature on media data ethics (Derry et al., 2010; Patterson, 2018), there is ongoing debate about how to handle consent, privacy, and representation in publicly posted video content. Markham (2012), for example, argues that issues of data protection and confidentiality are not always appropriate for media that has been voluntarily made public.

In line with this view, and following precedent set by previous research (e.g., Chen, 2020; Qiyang & Jung, 2019; Zheng & Tong, 2017), I treated these publicly accessible videos as valid and ethically acceptable data sources. The terms of use and user agreements of the Bilibili platform prohibit plagiarism and unauthorised commercial use but do not restrict non-commercial, academic use. No identifying IP addresses or personal data were collected. Videos were accessed only in the public domain, and no attempts were made to contact or trace individuals. The observations drawn from these videos focused on classroom-level practices that had already taken place, and no interventions or disruptions were imposed by the researcher. As such, the video analysis posed no risk to participants.

5.4.2 Interviews, classroom observations, and school access

During the main fieldwork phase, I conducted semi-structured interviews and classroom observations in selected rural schools in Sichuan Province. Ethical engagement with participants was essential throughout this process. Access to schools was gained with the formal permission of school leaders, who acted as local gatekeepers (Heath et al., 2007). These gatekeepers were fully informed of the study's aims and were supportive in facilitating contact with potential participants. Teachers were invited to take part voluntarily.

Informed consent procedures followed standard protocols. A debriefing sheet (Appendix B) and information sheets (Appendix C1 and C2) were shared in both English and Chinese. These documents outlined the purpose of the study, the voluntary nature of participation, data confidentiality, the right to withdraw, and contact information for the researcher. Written informed consent (Appendix D) was obtained from all participants before any data were collected, including consent for audio recording of interviews. Participants were made aware that they could withdraw from the study at any time up to the start of data analysis, without penalty or obligation.

Classroom observations focused on teachers' instructional approaches and integration of digital tools. As the observations were non-intrusive and no student data were collected, the ethical risks were low. Nevertheless, I took care to minimise disruption, obtained prior approval from headteachers and relevant staff, and ensured that no identifiable information about students was recorded or shared. Observations were used to supplement interview data and to deepen understanding of teachers' real-time decision-making in response to policy and technological pressures.

5.4.3 Confidentiality, anonymity, and data security

Although the existing ethical guidance provides some guidelines for undertaking research with human participants, most guidelines are general principles. In addition to adhering to standard ethical procedures, the ethical issues related to the cultural sensitivity in the external/ecological dimension should be taken into account. I have learnt this from my master dissertation research. I am fully aware of teachers' sensitivities to institutional and governmental dynamics in China's institutionalised environment (Wu, 2021), and I recognise the importance of ensuring confidentiality, not merely anonymity.

Pseudonyms were used for all participants, schools, and locations, and all identifying details were either removed or altered in transcripts, fieldnotes, and written outputs. Particular attention was paid to non-traceability, especially in small communities where individuals may be more easily identified (Wiles et al., 2005). As Wu (2021) notes, Chinese teachers often navigate sensitive institutional dynamics, therefore, I sought not only to protect anonymity but to ensure confidentiality, respecting the trust placed in me by participants. Their involvement was independent of their institutions, helping to reduce the pressure of hierarchical or administrative influence on their decision to participate.

To manage data securely, all digital files were password-protected and stored on encrypted university drives. Hard copies of consent forms and field notes were stored in a locked cabinet. All data will be securely deleted after the completion and examination of the thesis in line with UK GDPR and institutional data retention policies.

5.5 Pilot Study

The pilot study aims to address the validity and reliability of this research (Cohen et al., 2018). The useful functions of a pilot study in qualitative research have been widely acknowledged (Yeong et al., 2018; Kim, 2011; McCormick et al., 1994). It not only helps to identify potential issues in research design, but also strengthens the validity of the findings by testing the practicality of the planned methodologies (Morin, 2013). In this study, the pilot phase was particularly crucial as it informed the development of classroom observations and semi-structured interviews, shaping the main fieldwork in rural China. However, my research was to some extend impacted by the Covid-19 Pandemic. During that period, China imposed servere travel restrictions and isolation requirements, including limited flights, unaffordable ticket prices, and hotel quarantine costs. Given additional safety considerations, it was not possible to conduct in-person fieldwork for the pilot study.

Therefore, the pilot study was conducted in two phases: a video analysis to explore classroom practices and digital technology use in rural China, and a small-scale online interview with two rural teachers.

5.5.1 Using video analysis to inform classroom observations

Before conducting fieldwork, I used video analysis as a preliminary step to make sense of rural classroom in China. Research that uses existing videos as data for analysing classroom activities is increasingly common (Jewitt, 2012). Also, methodologists suggest that exploring classroom instruction is crucial for understanding whether and how educational reforms are effective (Raudenbush & Sadoff, 2008). The classroom recordings shared by the teachers documented the classroom instruction by providing a temporal and sequential record. Thus, this approach allowed me to observe teaching

practices, classroom structures, and the integration of digital tools before entering the field, helping to refine the classroom observation framework and interview questions. The Video selection process is further explained in the next paragraph.

China's compulsory education programme typically allocates around 40 minutes per lesson (Kumpulainen et al., 2018). Therefore, to collect full-length class video recordings, I relied on my personal experience as a Chinese internet user and, after comparing several streaming media platforms (SMPs), selected *Bilibili (*哔哩哔哩*)* for long videos. An overview of the platform is provided in Table 5.1. *Bilibili* is a video-sharing platform featuring user-generated content in China and openly accessible to the public. For the purpose of ethics application, existing research supports the use of Bilibili to identify relevant videos for analysis (e.g., Chen, 2020).

Table 5.1. A Chinese Social Media Platform: Bilibili.com

Platform Type	Video Content Sharing Social Media
Video Length*	Medium – Long

*Length Definition: Short (shorter than 5 Min), Medium (5-30 Min), Long (Longer than 30min)

The classroom recording for the pilot study was a Chinese lesson for year 2 students, taught by a young female teacher. From the brief introduction on the video page, it was indicated that this was an open class (with other teachers and heads of the school observing), and this video was posted on Bilibili by the teacher herself. The information

on the creator's home page also showed that it was from a nine-year compulsory school in a town school in China. The video was filmed from the back of the classroom, with the teacher facing the students and the camera, and the students sitting properly in their seats with their backs to the camera (as shown in figure 4).

Figure 5.1. Screenshot of V1 classroom recording (pilot study)

During the pilot study, I watched the video and created a content log, which is akin to the field notes, which provide an outline of the events in the video (Goldman et al., 2007). By pausing and repeating clips that I considered relevant to the study, I transcribed them in a pre-prepared Excel sheet in line with the relevant modes to capture the narrative in the video and for subsequent comparative analysis. These transcriptions were originally in Chinese. After the transcriptions, those identified as relevant to the themes were translated into English for further coding. I made careful observations and notes of the classroom, especially the technology, to understand the teacher's teaching environment. For example, I noted a total of seven rows of seats can be seen from the camera angle, three rows on the left and four rows on the right, and an aisle left in the middle. One student was sitting in the first row of the aisle, leaving a mere space for passage, requiring the teacher to turn sideways each time she passed. This presents the

issue of rural classrooms in terms of the class size and links to the literature on the impact of classroom size on teachers' teaching practices.

Through video analysis, I gained a more detailed understanding of classroom infrastructure in rural China. During fieldwork, ethical considerations (as discussed in Section 5.8) prevented me from sharing the pictures of observed classrooms. However, the video analysis provided a visual reference for what a typical rural classroom, as illustrated in the above figures. As I progressed through my research, I found that the classroom environments I observed closely resembled those in the publicly available classroom recordings. In almost every instance, rural classrooms were characterised by crowded seating arrangements, limited physical space, and basic teaching equipment. Unlike traditional blackboards, a sliding blackboard (comprising four panels) was mounted on the classroom wall. The middle panels could be pushed aside to reveal a touch screen resembling a television. From the transcription of the pilot video and literature reading, I have noted the major events that took place in the classroom recording and this helps me to develop a sense of the corpus of data and facilitate the classroom observation. Therefore, observing these classroom dynamics before fieldwork had significant implications for refining the research design. Rather than entering the field with broad, exploratory observations, I was able to structure the classroom observation framework around specific areas of interest as discussed in 5.5.3.

Beyond informing classroom observations, video analysis also played a pivotal role in shaping the approach to post-class interviews. This was because observations alone would not have been sufficient to capture the underlying reasons behind teachers'

pedagogical choices or their perspectives on DE. While watching the classroom recordings, it became apparent that digital technology was often used in a performative manner, particularly during observed lessons. This raised important questions about whether teachers felt genuinely confident in integrating technology or if they were merely conforming to external expectations. This insight led to the refinement of postclass interview questions as discussed in 5.5.2, encouraging teachers to reflect on their own agency in using digital tools and the constraints they faced in embedding them meaningfully into their teaching practices.

5.5.2 Pilot interviews: refining the interview protocol

The pilot interviews were conducted to refine the interview protocol and ensure the collection of valid information to address the research questions (Yeong et al., 2018). The pilot study was aimed to shed light on important issues for in-depth exploration in the main study. Two teachers who were working in different town schools in Sichuan Province were invited to participate in the pilot study. The interviews were conducted online via WeChat, a free Chinese social networking app. The aims of the pilot interviews were to evaluate the clarity and relevance of the interview questions in capturing teachers' experiences with DE and identify any technical challenges that might arise during interviews, such as recordings or reluctance to share sensitive opinions. In addition, as reflected in 6.3.3, rural teachers tended to be defensive towards overseas researchers due to Chinese policy and associated sensitivities. The pilot interviews also served to assess the level of trust and openness between the researcher and rural teachers.

The pilot interviews provided valuable feedback that led to important refinements in the main study's interview design. Network instability affected the flow of conversation, with lagging audio and video causing disruptions. Participants suggested that the online environment made them feel physically and psychologically distant from the researcher and led to a lack of security and trust. These issues made online interviews less ideal for in-depth discussions, reinforcing the importance of conducting face-to-face interviews during fieldwork whenever possible.

The pilot phase also tested the effectiveness of combining classroom observation with interviews. The two pilot interviews benefited from prior analysis of classroom (video) transcripts, which helped to verify and cross-check participants' interpretations. Moreover, information from the video allowed me to be more specific in my questions to the interviewees and helped me better understand the teachers' descriptions. For example, during interviews, I asked the participants to describe their working environment, followed by questions about whether they had a blackboard with an integrated screen and how they used it. This was learned from the video about the current infrastructure of classrooms in rural China. When teachers described the function and use of the facility, I was able to connect these with what I had previously observed in the video, which helped me grasp their explanations more clearly.

Overall, the pilot interviews conducted prior to fieldwork highlighted several important considerations. Firstly, the interviews exceeded the intended one-hour timeframe, often stretching to around 80 minutes. Although the extended duration allowed for rich responses, it also led to participant fatigue, particularly in the later stages. Feedback from pilot participants indicated that some questions were perceived as overly abstract

and required additional explanation to be fully understood. These insights led to several adjustments: redundant or repetitive items were removed, abstract questions were reworded for clarity, and the overall structure was refined to improve flow and accessibility. Following Bell's (2005) guidance, a structured schedule was retained to facilitate consistency across interviews while still allowing flexibility for deeper probing.

5.6 Summary

This chapter has outlined and justified the methodological and philosophical foundations of the study. Adopting a critical-constructivist interpretivist paradigm with an ecological orientation, the research design was developed to explore how rural teachers in China engage with DE reforms and exercise agency within complex structural and cultural contexts. The chapter discussed how knowledge was constructed through interaction and interpretation, acknowledging the researcher's reflexive role in meaning-making.

It detailed the rationale for using a qualitative approach, drawing on interviews, classroom observations, and policy document analysis. The research design was informed by an integrated theoretical framework combining Priestley et al.'s (2015) ecological model of teacher agency and Passey et al.'s (2018) concept of digital agency, enabling a multi-level examination of how teachers negotiate digital reform. The data collection methods, including policy document analysis, semi-structured interviews, and classroom observations, were introduced, and their relevance to the research questions was justified. Ethical considerations were discussed in detail, alongside reflections from the pilot study which helped refine the research tools and procedures.

The chapter also clarified the study's abductive approach to data analysis, which allowed movement between empirical insights and theoretical interpretation. In doing so, this chapter lays the methodological foundation for the empirical work presented in Chapter 7 and the analysis and discussion that follows.

6. Conducting the Research and Data Analysis

6.1 Introduction

Building on the methodological framework outlined in Chapter 6, this chapter describes the sampling strategy, fieldwork activities in two rural schools in Sichuan Province, and the practical challenges encountered during data collection. It then outlines the steps taken to ensure triangulation and data integration, followed by an explanation of the analytical approaches used for policy documents, interview transcripts, and classroom observations. These methods were applied to generate insights that directly respond to the study's research questions concerning teacher agency, digital engagement, and the implementation of Digital Education reforms in rural China.

6.2 Sampling

This study focused on rural teachers in Sichuan Province. As introduced in Chapter 2, Sichuan's socio-geographical characteristics provided a rich context for examining teacher agency in the face of DE reforms. Given the study's emphasis on teachers' lived experiences and digital teaching practices, rural teachers in public schools within the province were identified as the target population. This study employed a two-stage

sampling process to ensure a comprehensive understanding of rural teachers' agency in DE while allowing for in-depth case study analysis. The initial stage involved recruiting a broad sample of teachers across different rural schools, followed by a focused selection of participants for classroom observations and post-class interviews.

The first sampling strategy combined purposive and convenience sampling to ensure both relevance to the research questions and practical feasibility. Purposive sampling was employed to ensure the inclusion of teachers with varied DE experiences, teaching different subjects and grade levels (Ary et al., 2018). Participants were selected based on the following criteria:

a) Experience with digital technology – Teachers who had engaged with digital tools in their teaching, whether frequently or sporadically, were included to capture a range of digital practices.

b) Willingness to participate – Due to the sensitivity of educational research in China, participation required a degree of trust and willingness to share experiences.

c) Diversity in subject areas and grade levels – Teachers from different disciplines and educational stages (primary and secondary) were recruited to explore variations in digital pedagogy and agency.

Convenience sampling played a role in accessing participants. Many were recruited through personal and professional networks in Sichuan, using snowball sampling (Cohen et al., 2018). This approach was particularly useful given the initial difficulty in securing school participation, as discussed in Section 5.5.4 on fieldwork challenges. This combination ensured the study could be carried out efficiently while still engaging

with relevant participants. The final sample included 26 teachers and 2 headteachers from rural primary and secondary schools across Sichuan Province. Their profiles are shown in Table 6.1. These participants provided valuable insights into the broader implementation of DE in rural settings.

Table 6.1. Teachers' profiles

Teacher Code	**Pseudonym**	**Gender**	**Years of Teaching Experience**	**Academic Background**	**Additional Responsibility(s)**	**Subjects Currently Taught**	**Subjects Previously Taught**	**Classroom Observation**
P01	Li Hua	Female	12 years	English Education (University)	None	English, and Moral Education	None	No
P02	Wang Fang	Female	5 years	Advertising Design (Non-education)	Form Teacher	Chinese language and literature, and Arts	None	No
P03	Chen Mei	Female	25 years	Chinese language and literature (Specialist College)	None	Mathematics	Moral education; Arts	**Yes**
P04	Zhao Jing	Female	10 years	Music Education (Normal University)	None	Music	None	No

P05	Xu Lan	Female	17 years	Chinese language and literature (Normal University)	Deputy Director of Academic Affairs Office	Mathematics	Chinese language and literature	No
P06	Sun Yi	Female	10 years	Computer Design (University)	Director of Academic Affairs Office	Chinese language and literature	Mathematics; Arts	**Yes**
P07	Zhou Lei	Male	4 years	Information Technology (Normal University)	None	IT; Mathematics	None	**Yes**
P08	Liu Qiang	Male	8 years	Industrial Design, Environmental Art Design (University)	None	Art	None	No
S09	Yang Bo	Male	7 years	Physical Education (University)	None	Physical Education	None	No
S10	Deng Xia	Female	6 years	English Education (Normal University)	Form Teacher	English	None	No
S11	Zhang Min	Female	6 years	Public Administration (University)	None	Chinese language and literature	None	No

S12	Gao Rui	Female	10 years	Dance (University)	None	Music	None	No
S13	He Wei	Male	27 years	Chinese language and literature (Technical Teacher Training Specialist College)	None	Ideology and Morality	Chinese language and literature; Mathematics; Chemistry; Music; Physical education; Geography; History; Art	No
S14	Feng Tao	Male	9 years	Chinese Literature (Normal University)	Vocational Education Committee Member	Chinese language and literature	None	No
S15	Lin Ning	Female	5 years	English Education (Normal University)	After Class (Service) Lessons	English	None	**Yes**
S16	Guo Xin	Male	2 years	Geography Science (Normal University)	None	Geography; IT	None	No

S17	Hu Rong	Female	2.5 years	Chinese language and literature (Normal University)	Form Teacher	Chinese language and literature; Biology	None	**Yes**
S18	Luo Chuan	Male	8 years	Physics Education (Teacher Training Specialist College)	Form Teacher	Physics	None	No
S19	Ren Xue	Female	3 years	Chinese Language Education and Chinese Literature (Normal University)	Form Teacher	Chinese language and literature	None	No
S20	Xie Mei	Female	11 years	Dance (University)	School Safety Director, Academic Affairs Office	Biology; Music	Geography	No
S21	Gong Liang	Male	1 year	Mathematics and Applications (Normal University)	School Cafeteria Manager, IT 2.0 Initiative Leader	Mathematics; IT	Mathematics; IT	**Yes**

S22	Tan Qiang	Male	23 years	Chinese Literature and Language (Open University)	Administrative Management	Chinese language and literature	Geography	No
S23	Huang Jie	Male	15 years	Physical Education (Normal University)	Principal's secretary; After school (service) lessons	Physical education	Physical education	No
S24	Wu Zheng	Male	Over 20 years	Music (Specialist College)	School administrative affairs and logistics support	Music; Political ideology and moral education	Music, Political ideology and moral education; Chinese language and literature	No
S25	Qian Rui	Female	10 years	Fine Arts (University)	Form Teacher	Geography	None	No
S26	Zheng Bin	Male	Over 20 years	Education (Specialist College)	Administrative Duties	Mathematics	Chinese language and literature, Moral Education, Geography	**Yes**

P-HT	Chen Gang	Male	15 years	Chinese language and literature (Normal University)	Occasional teaching	Multiple subjects if staffing constraints	Mathematics and Chinese language and literature	No
S-HT	Li Peng	Male	25 years	Chinese language and literature (Normal University)	Occasional teaching	Multiple subjects if staffing constraints	Normal Education, Chinese language and literature, Mathematics	No

The number of participants in this study was guided by data saturation—the point at which new data no longer introduced additional insights or themes (Fusch & Ness, 2015). Through semi-structured interviews and classroom observations, the study reached a saturation point where key patterns in teachers' agency, digital practices, and school cultures consistently emerged. Data collected included contextual factors such as curriculum policies, school structures, teachers' roles, relationships, and resource availability.

Also, in line with Stake (2000), random sampling is not necessary in qualitative case studies; thus, the cases in this study were selected to allow for in-depth exploration of key research questions. To capture the complexity of teacher agency within different institutional ecologies, detailed classroom observations and post-class interviews were conducted with seven teachers from two rural schools: Yang Guang Primary School and

Xing Long Secondary School. From the initial 28 participants, seven teachers were selected for detailed classroom observations and post-class interviews. Participant profiles are presented in Table 6 .

The selection of these two schools and classroom observations was shaped by several interrelated factors. Firstly, beyond individual teacher's consent, classroom observations required school-level permissions, which posed both logistical and relational challenges, as reflected in Section 6.4.3. These two schools were the only ones where both teacher willingness to participate in classroom observations and approval for school visits were secured. Secondly, these schools reflect the structural organisation of China's compulsory education system, introduced in Chapter 2, which comprises two key stages: primary (Years 1–6) and secondary (Years 7–9) education. Including both stages enabled the study to capture a broader range of teacher experiences across the compulsory schooling spectrum, and to explore how teacher agency manifests across different institutional ecologies. Thirdly, the classroom observations included diverse subjects to reflect a more holistic picture of DE reform in the rural schooling context.

In sum, this multi-layered approach to sampling—first recruiting a broad set of rural teachers across different schools, then narrowing the focus to two case study schools—allowed for a comprehensive analysis of DE in rural China. It also ensured that findings were both deeply contextualised within individual schools and broadly relevant across similar educational settings. The following sections provide further detail on the data collection process.

6.3 The Conceptual Framework: Integrating Teacher Agency and Digital Agency

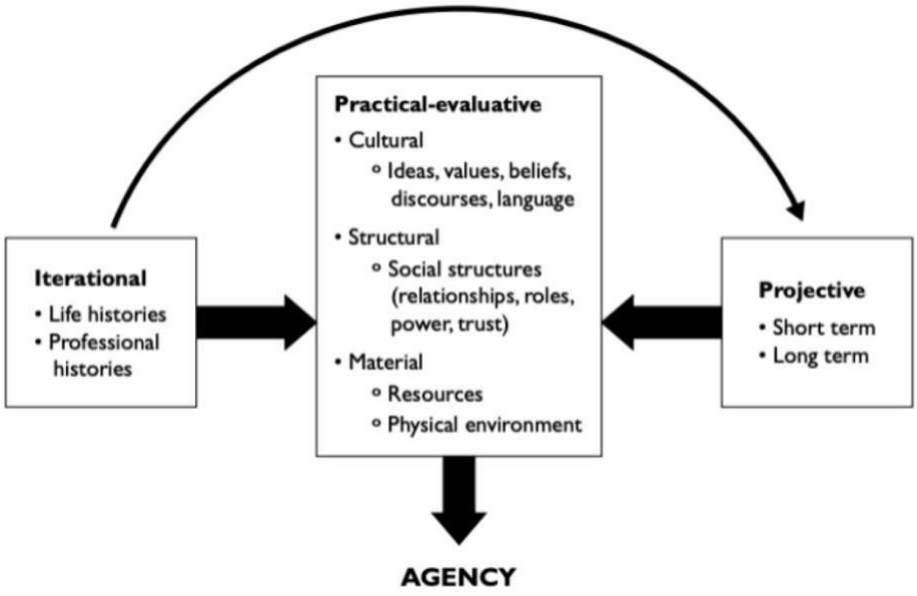
This study adopts the ecological approach to teacher agency (Priestley et al., 2015) as a core theoretical lens to examine how rural teachers in China engage with DE reform. However, my systematic review in Chapter 4 highlighted that digital reform introduces not only new tools and practices, but also new expectations, pressures, and accountabilities that reshape teachers' professional possibilities. To fully capture the complexity of agency in the context of digital reform, it was necessary to incorporate a digitally informed lens. Therefore, I incorporated the concept of digital agency, defined by Passey et al. (2018) as the ability to engage with digital technologies confidently, competently, and responsibly.

6.3.1 An ecological approach to teacher agency

From an ecological approach, teacher agency is a 'situated achievement'—the result of the interplay between past experiences, present conditions, and future intentions (Priestley et al., 2015). This conceptualisation aligns with Lasky's (2005) socio-cultural approach discussed in Chapter 3.4, which also foregrounds the relational and contextual dimensions of teachers' professional identities and practices. Moreover, both Lasky (2005) and Priestley et al. (2015) conceptualise teacher agency as a triadic process, drawing on Emirbayer and Mische's (1998) theory of agency as a 'chordal triad', in which three distinct but interwoven dimensions operate simultaneously.. These dimensions - iterational, projective, and practical-evaluative - represent how teachers' past experiences, future aspirations, and present decision-making interact to shape their professional actions. These three dimensions are used in Priestley et al.'s (2015)

ecological framework as shown in Figure 6-1, to understand teacher agency and emphasise its temporal and relational aspects.

Figure 6-1. Teacher agency model (from Priestley, Biesta & Robinson, 2015)



The iterational dimension encompasses teachers' past experiences, including both personal and professional histories, all of which influence their current and future actions (Priestley et al., 2015). It comprises their education and training, knowledge and skills, attitudes, values, beliefs, and their professional habitus. Teachers develop habitual patterns of thinking and practice over time, drawing on established repertoires when responding to challenges in their work. This echoes Emirbayer and Mische's (1998) concept of the 'chordal triad of agency', where the iterational dimension corresponds to habit and past experiences. However, while past experiences provide stability and continuity, they can also act as constraints, particularly when long-standing pedagogical norms conflict with new educational policies or educational reforms.

The projective dimension relates to teachers' capacity to imagine and shape future possibilities in their professional practice. This encompasses both personal aspirations and broader educational goals, such as improving student learning outcomes, expanding professional roles, or adapting to policy changes (Priestley et al., 2015). Emirbayer and Mische (1998) associate this dimension with imagination, highlighting how teachers' agentic engagement is directed towards shaping desirable future states. However, these future-oriented actions are often mediated by institutional realities and structural constraints, meaning that while some teachers embrace digital innovation proactively, others may modify their aspirations in response to external pressures.

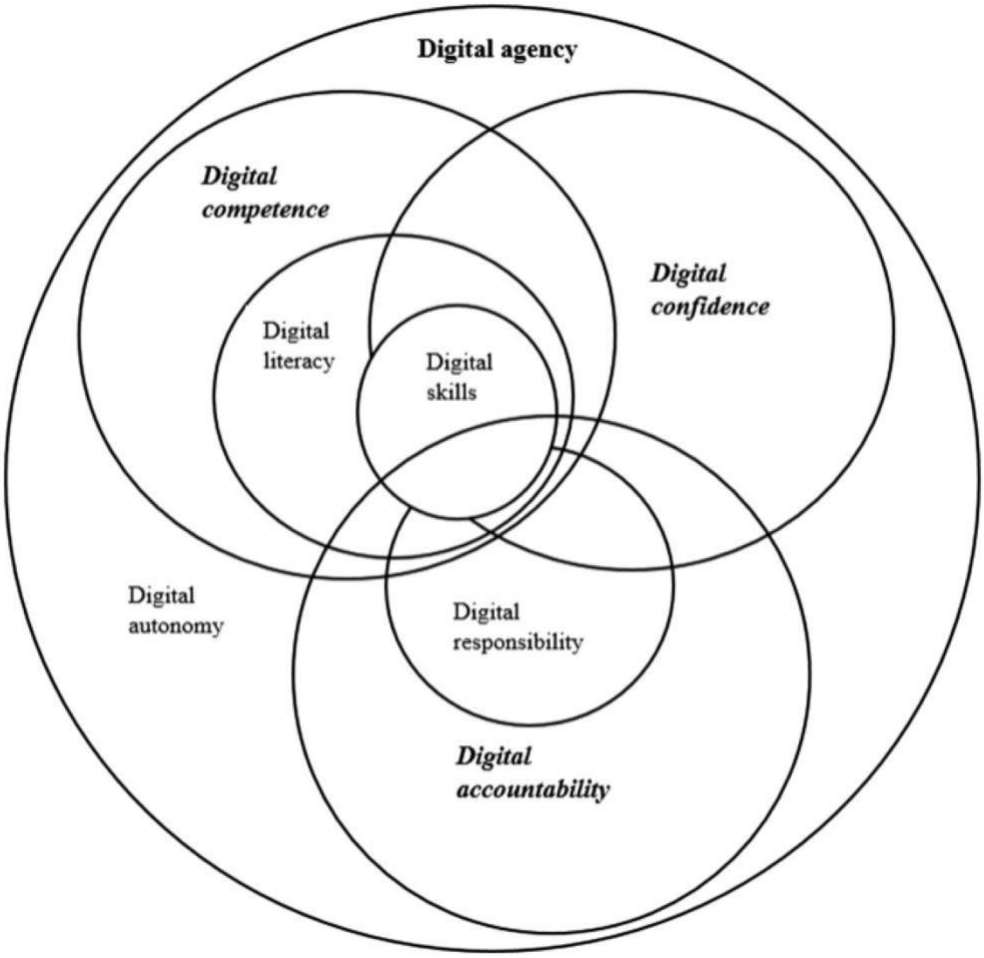
The practical-evaluative dimension focuses on teachers' present decision-making processes and how they navigate their working environments. It involves balancing competing demands, negotiating structural constraints, and exercising professional judgement in response to immediate challenges (Priestley et al., 2015). Emirbayer and Mische (1998) link this dimension to judgement, emphasising that while agency is informed by past experiences and future aspirations, it is ultimately enacted in the present. Biesta and Tedder (2007) similarly argue that agency is always exercised within a specific moment in time, meaning that teachers' actions are continuously shaped by available resources, school cultures, and policy constraints.

6.3.2 Digital agency

An important emerging concept in this field is digital agency, as proposed by Passey et al. (2018). Passey et al. (2018) define digital agency as "a way of empowering people to deal with new technologies so that they feel they have roles in how they adopt, adapt to and use them wisely and responsibly" (p.427). It aligns with the dual nature of digital

technology as both a tool for empowerment and a potential vector for technological determinism. According to Passey et al. (2018), digital agency intertwines with various concepts related to digital **(Figure 6-2)**, and they concluded it encompasses elements of digital competence, digital confidence, and digital accountability. Digital Competence lays the groundwork through traditional literacy, numeracy, and critical thinking; Digital Confidence goes beyond mere skill to include the capability and autonomy to use digital tools across various domains; and Digital Accountability extends to ethical dimensions of digital engagement, emphasising responsibility and informed decision-making. Digital agency could thus capture teachers' ability not only to use technology but also to critically engage with it, adapting digital tools to their pedagogical beliefs and professional needs rather than simply conforming to policy mandates (Passey et al., 2018).

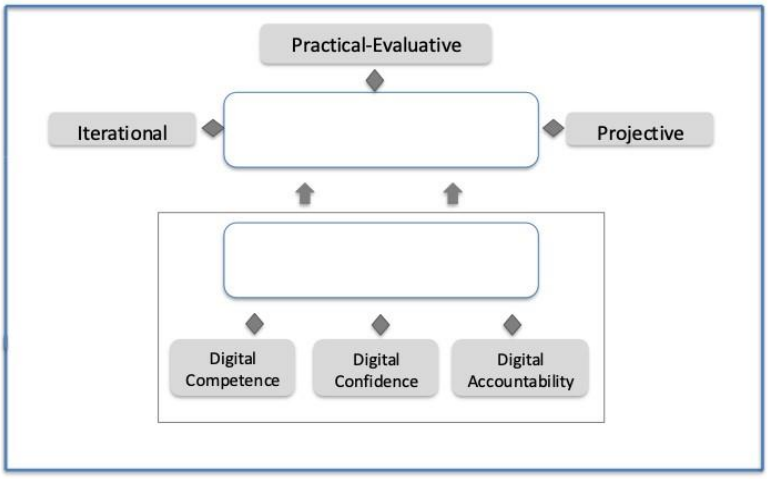
Figure 6-2. Proposed relationships of terms related to digital agency (from Passey et al., 2018)



6.3.3 The integrated conceptual framework

The conceptual framework illustrated in Figure 6-3 positions teacher agency as the core analytical unit, shaped through its three dimensions (iterational, practical-evaluative, projective), and mediated by digital agency. These complements and extends the ecological model by acknowledging how digital tools and cultures mediate teacher practice and influence professional agency.

Figure 6-3. The Integrated Conceptual Framework



The following section explores the integrated analytical framework, which illustrates how teachers exercise agency and identifies the key factors that influence it. At the core of this framework is teacher agency, which is understood through three interrelated dimensions (Priestley et al., 2015):

Iterational Dimension (Past Experiences & Training)

Teachers' prior experiences, professional training, and pedagogical beliefs influence how they engage with digital education. Their digital competence—including familiarity with technology and their confidence in using it—shapes their willingness and ability to integrate digital tools into their teaching.

Practical-Evaluative Dimension (Current Decision-Making)

In their day-to-day practice, teachers must navigate digital challenges, respond to school expectations, and balance state-mandated reforms with classroom realities. This dimension captures how they make real-time pedagogical decisions—whether they passively comply with policy requirements, adapt digital tools to fit student needs, or critically evaluate and reshape digital practices within their classrooms.

Projective Dimension (Future Aspirations & Innovation)

Beyond immediate constraints, teachers also envision their future roles in digital education. Some experiment with new teaching methods, seeking to shape digital pedagogy in ways that align with their professional values. Others aspire to enhance their digital competence and confidence, preparing themselves to engage more meaningfully with technology as it evolves.

These dimensions help unpack the diverse ways in which teachers exercise agency, highlighting the continuum between compliance, adaptation, and innovation in their digital teaching practices. The three key components of digital agency—digital competence, digital confidence, and digital accountability—interact dynamically with teachers' professional autonomy, influencing how teachers understand, engage with, and potentially reshape digital teaching practices.

Firstly, digital competence encompasses teachers' ability to integrate technology meaningfully into teaching (Beetham, 2009; Zhao et al., 2018). It encompasses technical skills and digital literacy, enabling teachers to navigate platforms, critically assess resources, and use technology to support teaching (Passey et al., 2018). As highlighted in Section 3.2.3, gaps in digital competence remain a significant barrier to effective DE implementation, particularly when training focuses on operational rather than pedagogical skills (Tusiime et al., 2022; Nii Akai Nettey et al., 2024). Without adequate competence, teachers may struggle to engage meaningfully with digital education, limiting their capacity for innovation.

Digital confidence is closely tied to competence but not identical – it involves the teacher's self-efficacy and belief in their ability to use technology effectively (Passey et al., 2018). This influences their willingness to experiment with new digital tools and pedagogical approaches. Teachers with high digital confidence may be more likely to explore creative ways to integrate technology into their lessons, while those with lower confidence may limit their digital engagement to mandated requirements or avoid technology altogether (Bingimlas, 2009; Becta, 2004). The emotional burden of "technostress" (Panisoara et al., 2020; Özgür, 2020) further complicates this, particularly when teachers feel overwhelmed by the expectations of reform but unsupported by institutional structures.

Lastly, digital accountability underscores the knowledge of the digital world, ethical and responsible use of digital technologies (Passey et al., 2018). It involves making informed decisions about technology use, ensuring security and privacy, and promoting digital citizenship among students. This component is barely discussed in prior literature.

The integration of these two concepts aligns with international literature that recognises digital agency as a fundamental element of teacher professionalism in post-pandemic education (Siddiq et al., 2023; Korhonen et al., 2022). It also resonates with Chinese empirical studies, such as Zhang et al. (2023), who shows that rural teachers' agency was shaped by multiple layers of influence—from national curriculum policy and ICT infrastructure at the systemic level, to school support and community expectations at the institutional level. Teachers who successfully adapted digital tools to meet local needs demonstrated creative forms of agency, such as sourcing online resources to

supplement a rigid curriculum. This reinforces the idea that understanding teachers' implementation of DE reform requires attention to both their ecological environment and their digital capacity.

Thus, this integrated framework allows for a deeper analysis of how teachers negotiate both digital and pedagogical challenges. It uncovers both barriers to meaningful technology use discussed in Section 3.2.3 and strategies teachers employ to assert their professional autonomy in digital environments discussed in Section 3.3. Adopting digital agency alongside the ecological perspective enabled me to capture the contextual factors shaping teachers' digital engagement, the institutional structures supporting or hindering their autonomy, and the personal experiences and beliefs influencing their confidence in using digital tools.

6.4 Conducting the Fieldwork in Rural China

6.4.1 Documenting policies

China's digital reform of education unfolds through two distinct stages, with the "19th National Congress" as the dividing line (Du, 2018; Wu & Wu, 2018). The initial phase, referred to as "Education Informatisation 1.0 (EI 1.0)", was not initiated by a specific policy document, but presented as an overall description of the first stage of China's digital reform. The Vice Minister of Education Zhanyuan Du (2018) pointed out that the 1.0 era was the stage before 2016. This era includes significant initiatives like the "Modern Distance Education Project for Rural Primary and Secondary Schools" (MDEPRS), a cornerstone project aimed at enhancing rural education in Western China through digital means (Yu & Wang, 2006). The MDEPRS, representing the largest

effort towards rural education digitalisation, offers critical insights into the early policy directions aimed at leveraging technology to uplift rural education.

The transition to the current phase—the 2.0 era—was marked by the launch of the 'Education Informatisation 2.0 (EI 2.0) Action Plan' by the Ministry of Education in 2018. This plan is a new comprehensive document for "Education Informatisation" issued at the national level. This plan, reflective of a broader national strategy for embracing a digital society and economy, aligns with key strategic documents like the "National Medium and Long-Term Education Reform and Development (2010-2020)" and the "Thirteenth Five-Year Plan for the Development of the National Education" (The State Council of China, 2017). The selection of policies for this study encompasses both these foundational and contemporary stages of China's DE reform, providing a broad perspective on the evolving policy landscape and its implications for rural education and teachers.

In addition, the selection aims to trace the progression of policy representations of the "problem" (Bacchi, 2019). Official policy documents were sourced primarily from government websites, including the Ministry of Education (MoE) and the State Council. This ensured that the policies selected were authoritative and representative of nationallevel planning. Documents were chosen based on their explicit focus on DE, teacher development, and rural education policy, allowing for an analysis of how teachers' roles were framed within the state's vision for digital transformation. A detailed list of analysed policy documents is presented in Table 6.2, categorising key policies from both Education Informatisation 1.0 and 2.0 phases.

Table 6.2. The policy materials for analysing

No.	Policies	References (policy issuer)
1	关于实施《农村中小学现代远程教育工程试点工作方案》的通知 （Circular on the implementation of the Pilot Work Programme for the Modern Distance Education Project for Rural Primary and Secondary Schools）	Ministry of Education, National Development and Reform Commission, & Ministry of Finance (2003)
2	关于印发《2006—2020 年国家信息化发展战略》的通知 (Circular on the issuance of the National Informatisation Development Strategy 2006-2020)	The State Council of China & General Office of the Chinese Communist Party (2006)
3	关于印发《教育信息化十年发展规划（2011-2020 年）》的通知（“Ten-Year Development Plan for Education Informatisation 2011-2020”）	Ministry of Education (2012)
4	教育信息化“十三五”规划 （“the ‘13th Five-Year Plan’ for Education Informatisation”）	Ministry of Education (2016a)
5	教育信息化 2.0 行动计划 （“Education Informatisation 2.0 Action Plan”）	Ministry of Education (2018)
6	国家中长期教育改革和发展规划纲要（2010－2020 年） "National Medium and Long-Term Education Reform and Development (2010-2020)"	The State Council of China (2010)

7	国务院关于印发国家教育事业发展“十三五”规划的通知 （Thirteenth Five-Year Plan for the Development of the National Education"）	The State Council of China (2017)
8	教育部关于启动实施全国中小学教师教育技术能力建设计划的通知 (Notification of the Ministry of Education on the Launching and Implementation of the National Programme for Building the Educational Technology Capacity of Primary and Secondary School Teachers)	Ministry of Education (2005)
9	教育部办公厅关于印发乡村教师培训指南的通知 (Notification of the General Office of the Ministry of Education on the Guidelines for the Training Programme for Rural Teachers)	Ministry of Education, (2016b)
10	国务院办公厅关于印发乡村教师支持计划（2015—2020 年）的通知（Circular of the General Office of the State Council on the issuance of the Rural Teacher Support Plan (2015-2020)）	The State Council of China (2015)
11	中共中央 国务院关于全面深化新时代教师队伍建设改革的意见(Opinions on Comprehensively Deepening the Reform of	CPC & The State Council of China (2018)
	Teacher Construction in the New Era)	

12	关于实施全国中小学教师信息技术应用能力提升工程 2.0 的意见 (Guidance on School-based Application Assessment for the National Primary and Secondary School Teachers' Information Technology Application Ability Enhancement Project 2.0)	Ministry of Education (2019)
13	教育部等六部门关于加强新时代乡村教师队伍建设的意见(Opinions on Strengthenting the Rural Teacher Construction in the New Era)	Ministry of Education, National Development and Reform Commission, Central Organisatiion Department, Central codification Office, Ministry of Finance, & Ministry of Human Resources and Social Security (2020)

These national policies set the stage for understanding the broader structural conditions influencing teacher agency in rural DE. However, policies do not exist in a vacuum—they are reinterpreted and implemented at the local level, where institutional cultures and school realities shape how reforms unfold. Therefore, the second stage of policy collection focused on how these national directives were translated into local practice. To understand how national DE policies were being implemented at the local level, this study also examined local government notices, school-issued guidelines, and informal policy enactments during fieldwork in Sichuan Province. This was crucial for capturing how teachers, schools, and local education authorities navigated digital reforms in practice. However, the contextual documents collected during fieldwork are not included in this formal dataset but were analysed separately as part of the fieldwork phase.

Unlike national policies, which are publicly available on government websites, local policy documents were collected through different approaches. At the Municipal and county-level, data were mainly collected by reviewing education bureau notices, and government news through local government websites. However, county-level in my research siting has no official educational website. Data were collected through internal school documents, obtained from headteachers and teachers, detailing county and school-level expectations for digital integration, professional development, and teacher performance evaluations. Additional sources included training materials and assessment frameworks, such as the ITAC (Information Technology Application Capacity) standards, which outlined the competencies rural teachers were expected to develop. These local documents were particularly revealing because they showed how national policy directives were translated into everyday expectations for teachers. During fieldwork, on-site engagement with teachers and administrators also uncovered implicit policies—the unwritten rules and norms that shape DE in practice (Bourdieu, 1990). The detailed analysis will be explained in section 6.6.1.

6.4.2 Collecting data in the rural China

6.4.2.1 The primary interviews

During my fieldwork, I conducted 26 primary interviews to generate data for this research, providing insight into how rural teachers in China understand, experience, and respond to Digital Education (DE) reform. An interview schedule (see Appendix E) was carefully designed and progressively refined through both a pilot study and during the course of fieldwork to ensure that it captured the key aspects relevant to the research questions. The development of the interview guide was informed by multiple sources: the literature review, the theoretical framework introduced in Chapter 4, and

the findings from the pilot study—including early video analysis and informal consultations with teachers.

In line with Gillham's (2003) suggestion for structured yet flexible qualitative interviewing, the interview questions were grouped into thematic categories. These categories were designed to support a systematic approach to data collection and later analysis, while also enabling meaningful comparisons across different teacher narratives. At the same time, the interview format allowed flexibility for teachers to direct the conversation in ways that reflected their personal experiences, providing space for rich, contextually grounded insights.

The schedule began with introductory questions about the teacher's background, including their academic qualifications, years of teaching experience, and subject specialism. These opening questions served multiple purposes: they helped set the participants at ease, initiated rapport, and provided necessary context about their career trajectory. These background insights also supported exploration into how teacher identity and personal history influenced their engagement with digital practices. Subsequent sections of the interview addressed more targeted themes aligned with the ecological model of teacher agency (Priestley et al., 2015) and digital agency (Passey et al., 2018). These included:

Beliefs and Values in Rural Education: Questions invited teachers to reflect on the purpose of rural education and their personal values as educators. This provided insight into the iterational dimension of teacher agency—how their beliefs, cultural influences, and professional histories shaped their current orientations.

Use of Digital Technology in Personal and Professional Life: Participants were asked how they used technology both in daily life and in teaching. This enabled an understanding of digital confidence and competence, and the relationship between informal familiarity with technology and formal pedagogical application.

Perceptions of Digital Education Policy: Teachers were encouraged to share their views on DE reforms, including training opportunities, institutional support, and the autonomy they felt in implementing digital tools. These questions probed the practicalevaluative dimension—how teachers navigated current constraints and opportunities in their decision-making.

Autonomy and Innovation: Participants discussed how they responded when school norms conflicted with their own teaching philosophies, especially in relation to digital practices. These discussions were valuable for exploring teacher identity, perceived role, and self-efficacy.

Aspirations for the Future: The final questions looked forward, asking teachers about their visions for digital education and their roles within it. These responses helped illuminate the projective dimension of agency—how teachers imagined future changes and their potential to shape them.

A key aim of the questions was to explore how teachers experienced digital reform across three interconnected dimensions of agency: how their past experiences shaped their views (iterational), how they made decisions within their current context

(practical-evaluative), and how they envisioned and prepared for the future (projective).

During the fieldwork interviews, I remained flexible, adjusting the depth and sequence of questions as needed. This allowed teachers to speak freely, while still ensuring all key areas were covered. Following Bell (2005), the structure of the interviews also helped to identify themes during the analysis stage. All interviews were conducted in Mandarin, audio-recorded with participants' consent, and supported by written notes. The combination of main and post-class interviews allowed for both broad and detailed insights into how teachers navigated digital reform. These conversations formed a vital part of the data, offering grounded perspectives on teachers' beliefs, decisions, and the realities they faced in their school settings.

Interview data are referenced throughout the finding's chapters using pseudonyms to ensure confidentiality (e.g., Interview, Mr Deng). At the end of each interview, I asked teachers if they would be willing to participate in classroom observations. Based on their responses and further discussion with school leaders, I selected seven teachers across the two schools for observation. These cases are discussed in the following sections.

6.4.2.2 Observations and post-class interviews

Building on insights from the primary interviews, classroom observations were conducted to explore how teachers' stated beliefs and professional values were enacted in practice. As introduced in Section 6.2, seven teachers were selected for observation across two rural schools. Each teacher was observed teaching two lessons, providing a

snapshot of their pedagogical routines and responses to DE reform. An overview of these observed lessons is presented in Table 6.3 below.

Table 6.3. Overview of observed classes

Teacher (Pseudonym)	**Subject**	**Year Group**	**Number of Pupils**	**Lesson Type**
Mr Feng	Mathematics	Year 8	49	Regular Lesson
Miss He	English	Year 8	42	Regular Lesson
Miss Hu	Chinese Language & Literature	Year 7	49	Regular Lesson
Mr Chen	Mathematics	Year 9	42	Regular Lesson
Mrs Huang	Chinese Language & Literature	Year 2	39	Open Class
Mr Zhao	IT	Year 3	41	Open Class
Mrs Zhang	Mathematics	Year 4	49	Regular Lesson

*Regular Lessons: Standard classroom sessions as part of the teacher's usual teaching schedule. *Open Classes: Lessons observed by other teachers or administrators, often as part of professional development or demonstration purposes.

Informed by the literature on digital education, this study recognises how national and international narratives position digital education as a transformative force—intended to enhance learning experiences, increase student engagement, and shift pedagogy from teacher-centred to student-centred approaches. These expectations, embedded within policy discourse and professional development initiatives, create an implicit framework for how digital education should be enacted in classrooms. To capture whether and how these DE expectations are realised, my classroom observations examined pedagogical approaches, teacher-student interactions, and the integration of digital tools. This focus is particularly important as the pedagogical approaches also reflect teacher agency (Priestley et al., 2015).

To systematically document these dynamics, a structured observation form was developed (see Appendix F) and applied to each classroom visit. The form captured key elements influencing teacher agency in digital education, aligning with the integrated analytical framework (see Section 6.3). The process of data collection involved systematically observing classroom interactions to describe the ways teachers implementing DE and how agency emerges within the rural context. Considering some elements may not always visible or identical, Bezemer's (2012) multimodal approach - based on the assumption that meaning is created through multiple modes of representation and interaction - informed my notetaking during classroom observations.

Firstly, the regular patterns of resource usage illustrated how representational resources and their applications are interconnected (Bezemer, 2012). By observing classroom interactions, I described how teachers in rural educational contexts utilised digital elements, such as interactive whiteboards and educational software, to facilitate

learning. Secondly, multimodality posits that resources are socially shaped over time into meaning-making tools, reflecting the social, personal, and emotional needs of different communities (Bezemer, 2012). Examining the most frequently used digital elements and the ways in which teachers interacted with these technologies helped uncover shared cultural understandings within rural education. For example, certain digital tools might be preferred because they resonate with the local cultural context or are more available. This investigation also looked at how teachers organised and employed these resources to achieve educational goals and create meaningful learning experiences (Bezemer & Kress, 2008, 2015).

Moreover, from a social semiotics perspective, socially and culturally shaped interactions are represented in different modes. All communicative acts are influenced by the norms and rules in place at the time of symbol production, as well as by the motivations and interests of people in a given social context (Bezemer, 2012). For example, the teaching norms discussed in Chapter 3 are often taken for granted as conventional ways of speaking and acting. The observed teachers' actions not only reflect their teaching practices but also reveal their dispositions by demonstrating how they maintain or challenge these norms (Priestley et al., 2015). By observing the teacher's positioning, speech patterns, interactions with students, bodily gestures, and other classroom modalities, I aimed to understand how pedagogical culture shapes digital teaching practices. Teachers' use of body language, movement, and positioning relative to digital tools also provided valuable insights into their confidence, engagement strategies, and pedagogical intent.

To mitigate potential observer effects—where teachers may modify their teaching behaviour due to being observed—I scheduled visits in a way that teachers felt comfortable and encouraged them to teach as they normally would. However, I remained mindful that formal lesson observations often involve performative elements, particularly in the presence of school leaders or external evaluators (Ball, 2003). To address this concern, each classroom observations were followed by post-class interviews, allowing teachers to reflect on and explain their decisions in the observed lesson.

The post-class interviews aimed to provide a reflective space in which teachers could articulate the pedagogical intentions behind their lesson, interpret the successes and challenges of using digital tools, and discuss contextual or institutional factors that may not have been directly visible during the lesson itself. This approach aligns with the understanding that teacher agency is best examined through both observed behaviour and personal reflection (Priestley et al., 2015). The interview questions were guided by the overarching conceptual framework of the study but also informed by the specific dynamics observed during the lesson. By observing classroom interactions beforehand, I was able to identify contextually relevant themes, which helped refine the interview prompts and formulate probing questions tailored to each teacher's practice.

For example, to prompt teachers to reflect on their use of technology during the lesson, I use probe questions such as "*How confident did you feel using the digital tools during today's lesson?*" or "*Have any past experiences shaped your confidence in using technology?*" provided insights into their self-efficacy and the emotional dimensions of their professional agency (Ertmer & Ottenbreit-Leftwich, 2010). Also, to explore how

teachers make decisions in using technology, interview prompts included: *"How do you decide when it's appropriate to use a digital resource?*" and "*What steps do you take to ensure safe and inclusive use of digital tools in your classroom?*". In this way, the interviews unpacked the "why" behind the "what" of the classroom observations, reinforcing the integrated analytical approach.

In the finding's chapters, data from classroom observations were cited using the abbreviations followed by the teacher's pseudonym and the observed subject—for example, CO-Miss He, English. Quotations from the subsequent post-class interviews were referenced as PC-Interview-Miss He.

6.4.3 Challenges of conducting fieldwork in rural China

As this research was designed to explore teacher agency within specific school ecologies, gaining access to classrooms was essential. Also, the rapid pace of change in China's rural education system meant that I needed to be physically present to truly understand the evolving social, cultural, and educational landscapes. However, conducting research in rural China presented significant challenges, both logistically and emotionally. Prior to my arrival in China, most of my research invitations to schools went unanswered, and only teachers with whom I had existing relationships agreed to participate. This outcome diverged significantly from the diverse sample I had originally intended, and gaining permission for classroom observations proved even more challenging.

Initially, school gatekeepers agreed to my visits; however, after I sent formal consent forms, two schools withdrew permission entirely, and another permitted interviews but

subsequently ceased all communication. I later learned from informants that this reluctance stemmed from a deep-seated mistrust of an unknown researcher based abroad. School leaders feared potential political consequences, an anxiety deeply rooted in China's social and political culture (Wu, 2016; Wang, 2019). Fortunately, during my fieldwork in Sichuan Province, I was granted access to two schools within the same municipality through the help of local informants. This access was not immediate—it was gradually negotiated through trust-building within local networks. Over the course of three months, I travelled across four towns in different counties, navigating poor infrastructure and limited accommodation options. In some cases, I stayed in staff dormitories at the schools, while at other times, I lived with teachers in their county homes, experiencing their daily commutes to rural schools.

By living alongside teachers in their dormitories, I witnessed firsthand the realities of their lives: basic ensuite rooms without kitchens, makeshift outdoor stoves, communal dining in school canteens, and a near-complete absence of digital amenities. Unlike urban counterparts with access to high-speed internet, teachers in these schools relied solely on their mobile phones for entertainment and external communication, often struggling with weak network signals. Living with teachers in their county homes provided a different perspective—one of long daily commutes, balancing rural and urban lifestyles, and the broader economic constraints that shaped their teaching conditions.

Beyond logistical difficulties, the psychological pressure of conducting fieldwork in rural China was immense. I frequently encountered scepticism about my identity, with many assuming I was a Foreign-affiliated researcher sent to report on China's rural

education system. This experience mirrors that of Jinting Wu (2021), a Chinese researcher studying in the US, who was expelled from a rural community in southwest China after being accused of espionage. Wu (2021) describes how, within a week, her status shifted from a welcomed visitor to the subject of official investigation, as local officials and security forces interrogated villagers about her activities. Her interactions with teachers became tense, with participants self-censoring and avoiding any discussion that might contradict government narratives.

This phenomenon is not unique to Wu or to me. In China, field researchers are often perceived as potential informants for external entities, a perception influenced by historical experiences with state surveillance (Cornet, 2013; Hansen, 2006). This leads to an atmosphere of caution and self-censorship, particularly among rural teachers who already navigate a delicate relationship with local authorities. Many of my interviewees avoided discussing topics that might be perceived as politically sensitive, reflecting a broader tension between teachers and government policies.

Throughout my fieldwork, nearly every person I met expressed doubts about my identity—from research participants to gatekeepers and even acquaintances. Many struggled to understand why a Chinese doctoral student based in the UK would choose to return to China to research rural education. Even those who dismissed suspicions of espionage often remained uncertain about the purpose and implications of my research. Repeatedly explaining my research, justifying my presence, and defending my intentions became exhausting. The constant questioning and social rejection took a significant emotional toll, at times making me reluctant to engage further. However, support from family and close friends helped me persist through these challenges.

The mistrust and reluctance of rural communities towards researchers is not unfounded. As Wu (2021) argues, rural teachers and communities are deeply embedded in historical, social, cultural, and political contexts that shape their responses to outsiders. My experience reinforced the importance of immersing myself in their world—not only through formal interviews, but also through everyday interactions and shared experiences.

Rural teachers in China occupy a marginalised position within global educational and social hierarchies. As a researcher, it was essential to understand their perspectives from within their social reality, rather than imposing an external analytical lens. Spending time in their communities, experiencing their living conditions, and witnessing their struggles firsthand enriched my understanding of how teachers exercise agency in DE reforms. These experiences also reinforced the need for careful, context-sensitive research approaches when working in politically sensitive and socially complex environments.

Although conducting research in rural China was challenging, these obstacles provided valuable insights into the lived realities of rural teachers, the constraints shaping their agency, and the delicate interplay between policy, institutional structures, and personal experiences. My fieldwork experience became not just a means of data collection, but a process of deep engagement with the rural education landscape, allowing me to capture voices that are often marginalised in educational research.

6.5 Triangulation and Data Integration

Triangulation enhances the credibility and depth of qualitative research by drawing on multiple sources of data to examine a phenomenon from different perspectives (Cohen et al., 2011; Denzin, 1978). In this study, triangulation was achieved by combining policy analysis, classroom observations, post-lesson interviews, and additional interviews with teachers from other rural schools. A two-phase research design was adopted to develop a comprehensive understanding of teacher agency in the context of digital education, and to systematically address the research questions.

Phase one focused on policy analysis, offering insight into how digital education reform is conceptualised and communicated through national and provincial frameworks. Phase two employed a multiple case study approach, using semi-structured interviews and classroom observations to explore how teachers interpret, respond to, and implement digital education policies in their everyday practices. This approach aligns with Yin's (2018) recommendation for drawing on diverse sources to deepen case study analysis.

Although this study does not aim for statistical generalisation, the integration of additional interview data allowed for analytic generalisation, whereby the findings from specific school contexts are interpreted in relation to broader theoretical concepts and frameworks (Yin, 2014). This strengthened the validity of the research and offered a richer, more nuanced account of teacher agency in rural digital education reform.

The interview data provided supporting evidence that the observed practices were not isolated but reflected wider trends in rural Chinese education. Flyvbjerg (2006) argues that

case studies, when enriched with additional data, can inform broader theories and offer valuable insights into the phenomena under investigation. In this study, interview quotes and insights were interwoven with case observations to highlight how shared and divergent experiences shape teachers' interactions with digital technologies. This approach not only added depth to the case study analysis but also facilitated a more comprehensive discussion of DE in rural contexts.

6.6 Data Analysis

Qualitative data were generated through multiple sources. These included data from policy documents, interviews and classroom observations. The analysis of policy data adopted a critical approach, examining the policies underpinning China's "Education Informatisation" initiative, particularly as they relate to rural education. Interview data and other written transcripts (e.g., observation and field notes) were coded using an interpretivist approach (Corbin & Holt, 2005), which enabled a process of open coding followed by the application of relevant theoretical frameworks. The methods, approaches, and procedures used to analyse the data—including the rationale for these choices—are explained in detail in the following sections.

6.6.1 A critical approach to policy analysis

To address research question 1, the "What's the Problem Represented to be?" (WPR) approach (Bacchi, 2009; 2012) was employed to critically analyse how policies construct the digitalisation for rural education. Specifically, the analysis was guided by two sub-questions aligned with RQ1:

(a) How do these policies construct the 'problem' of education in rural China within the discourse of DE?

(b) In what ways do DE policies articulate the role of rural teachers in addressing the identified educational challenges?

The WPR approach, developed by Carol Lee Bacchi and grounded in a Foucauldian post-structural framework, was instrumental in this study's examination of China's "Education Informatisation" policies. Unlike traditional views that regard policies as solutions to pre-existing societal issues, the WPR approach explores how policies themselves construct these issues (Bacchi, 2009). The fundamental concept in WPR is that solutions suggested in policies implicitly define the "problems" they aim to address. Policies, thus, are seen as acts of problematisation, containing implicit representations of problems that require critical examination for a comprehensive understanding (Shore, 2012). This perspective is crucial for understanding the nuanced ways in which policies are crafted and the power dynamics they embody, offering a pathway for potential policy reform through a critical examination of the discourses and texts that frame them (Bacchi & Goodwin, 2016). Accordingly, the WPR enables a critical examination of policy narratives, exploring how "problems" are constructed and how these constructions shape behaviour and societal structures.

In educational policy research, the WPR approach has been employed across various contexts to critically analyse how education policies frame and address issues. For instance, studies have used WPR to explore policy discourses around digital competence in Sweden (Hanell, 2018) and teacher education reforms in Australia (Bourke et al., 2020). These applications highlight how policies implicitly define what constitutes a "good" teacher education or a "competent" teacher, revealing the values and norms shaping these definitions. In the Chinese context, the WPR approach has

been applied to analyses of vocational education reform policy (Liu & Hardy, 2021) and higher education policies (Woo, 2023), revealing how these reflect broader societal values and contemporary educational challenges. Despite its widespread application, most studies have focused narrowly on specific policy documents and singular 'problem' representations, prompting a reconsideration of the limitations of overly rigid analytical framing (Dredge & Jamal, 2015). With this in mind, this research broadens the application of the WPR approach by examining a wider range of policies related to "education informatisation" in rural China and the role of teachers.

Moreover, the policy texts serve not only to set directions for reform but also act as vehicles for promoting the state's political and educational objectives. As Tawell and McCluskey (2022) argue, WPR is particularly valuable in identifying how different policy discourses converge or diverge, and how such representations affect the construction of professional roles and responsibilities. Within this context, the WPR approach is particularly valuable for uncovering how different policy discourses converge or diverge, and how these representations shape the construction of professional roles and responsibilities, particularly those of teachers. In beginning the analysis, I remained attentive to the possibility that a single policy document might contain multiple, and at times conflicting, problem representations (Bacchi & Bonham, 2014).

To navigate these complexities and maintain a consistent critical lens, I adapted the questioning framework developed by Bacchi & Goodwin (2016). However, as Bacchi (2009) and Bacchi and Goodwin (2016) note, the order, emphasis, and applicability of each question may vary depending on the research context. In this study, the analysis

focuses primarily on Questions 1, 2, 3, and 5. These four questions were selected for their alignment with the research aims and their analytical value in revealing how DE and rural teachers are framed in Chinese policy discourse, and what effects these framings produce at institutional and individual levels. The table below outlines the six WPR questions and highlights the four used in depth in this thesis.

Table 6.4. Overview of the WPR Questions and Their Application in This Study

WPR Question	***Focus***	***Description***	***Relevance to This Study***
Q1. What's the 'problem' represented to be in a specific policy?	Representation	Identifies how a "problem" is constructed through the solutions proposed in policy.	Forms the foundation of analysis; uncovers how DE and rural teachers are problematised in national policies.
Q2. What presuppositions or assumptions underlie this representation of the 'problem'?	Assumptions	Investigates the conceptual logics and background knowledge taken for granted in policy discourse.	Reveals how policy texts draw on ideologies of modernisation, technological determinism, and standardisation.
Q3. How has this representation of the 'problem' come about?	Genealogy	Explores historical, social, and political processes that made this problem representation possible.	Traces how DE became central to education reform and how rural teachers' roles were reshaped.

Q4. What is unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?		*left* Silences Exposes what is Not addressed in detail excluded or taken as self- but acknowledged as an evident, and invites area for future research. alternative framings.
Q5. What effects produced by this representation of the 'problem'?		***are*** Effects Examines the discursive, Central to assessing how subjectification, and policies shape school lived effects of problem structures, teacher roles, representations. and agency in rural settings.
Q6. How/where has this representation been produced, disseminated, and defended? How could it be questioned, disrupted, and replaced?	Dissemination	Considers the power Not a central focus, but dynamics and relevant to understanding institutional mechanisms the broader circulation of that sustain policy DE reform narratives. discourse.

This approach was not intended merely to describe existing policies, but to question the assumptions underlying how rural education and the role of teachers were framed within policy texts, and how such framings influence practices. Relevant content from each document was systematically noted and categorised to inform the WPR-based analysis of problem representations. These policy narratives were then compared with teachers' experiences to explore how policy expectations translated into classroom realities. Moreover, this phase informed the development of interview questions,

ensuring that fieldwork was grounded in an awareness of the broader structures shaping teachers' professional realities.

6.6.2 The analysis of the fieldwork data

Research Questions 2, 3, and 4 were addressed collectively through an integrated analysis of fieldwork data. This approach ensured that findings from teacher narratives were directly linked to observed practices, offering a comprehensive view of how teacher agency operates in DE. To achieve this, I adopted a thematic analysis approach as delineated by Braun & Clarke (2012; 2017), focused not only on how teachers engage with DE but also how they negotiate policy expectations and resource constraints. Following Braun and Clarke's (2016) method of thematic analysis, the fieldwork data were analysed through the following process:

1) Transcription of recorded interviews. As the interviewees were native Chinese speakers, the recordings were translated from Chinese to English and carefully proofread to ensure accuracy.
2) Initial coding of the transcripts. The data were open coded by reading the transcripts to develop conceptual themes (Flick, 2009).
3) Further thematic coding. Briggs et al. (2012) emphasise that each code must relate to the subject of analysis to retain meaning. As thematic analysis can be used within different theoretical frameworks (Braun & Clarke, 2006), preexisting themes were drawn from the framework (see Section 6.3.3) and literature. All relevant data were coded accordingly, while remaining open to emergent themes identified in the transcripts (Glaser & Strauss, 2017).
4) Refinement of each theme, linking findings to the literature and theoretical framework (Braun & Clarke, 2006).

5) Final synthesis, resulting in a thematic description and interpretation of the research questions (ibid).

Following the approach outlined above, I began the laborious process of manually transcribing each interview after completing the fieldwork in China, reviewing audio recordings and observation notes to summarise key points (Guest et al., 2012). The process aimed to capture the nuances of teachers' lived experiences and how these experiences reflect and resist policy intentions. The interview and transcription process, along with the challenges encountered, echoed the experiences described by researchers such as Wang (2021). Most participants expressed that they felt more comfortable speaking the local dialect rather than Mandarin, so the interviews were conducted in the local language with teachers' various accents. While I was able to understand and conduct the interviews reasonably well, I encountered challenges when transcribing the recordings. Often, I needed to listen to the same sentence repeatedly to confirm what the teachers were saying.

Additionally, due to participants' reluctance to sacrifice personal time and the lack of meeting rooms in schools, all interviews were conducted in shared offices. These spaces were bustling with activity, including other teachers talking and students entering the office during recess, either to report on their work or for disciplinary reasons. These interruptions added to the background noise, making transcription more difficult and time-consuming. All 35 interviews—comprising 28 primary interviews (approximately 60 minutes each) and 7 post-class interviews (approximately 30 minutes each)—were audio recorded, contributing to the length and complexity of the transcription process. However, the benefit of this iterative process was that it significantly deepened my

familiarity with the data, which is an important aspect of thematic analysis (Braun & Clarke, 2016). This experience offers insights for future researchers conducting studies within complex linguistic and cultural environments.

Given the differences in expressions and wording between Mandarin and the local dialect, I shared the transcripts with participants to ensure that the meaning was accurately rendered. Once participants confirmed the transcripts, I translated them into English to ensure continuity in subsequent analysis and reporting. The transcription and translation process also involved a detailed review of the data to ensure accuracy and consistency, aligning with best practices in qualitative research (Mackey & Gass, 2005). Following this process, coding was initiated in NVivo.

Both interview and observation data were organised and coded in NVivo. The coding process was abductive, integrating existing theories with patterns that emerged from the data itself. This approach ensured that findings were not constrained by predefined categories but rather reflected the real experiences and perspectives of teachers in rural schools. To structure the analysis, I applied the top-level coding categories of structure, culture, and biography, derived from my theoretical framework presented in Chapter 4 (Priestley et al., 2015; Passey et al., 2018). For instance, within structure, the analysis explored how national policies on DE influenced school-level practices and individual teacher decisions. The culture category was refined to explore teachers' perceptions of professional expectations, their interactions with colleagues, and the influence of education norms on digital innovation. The biography category focused on how teachers' prior experiences with technology, professional training, and pedagogical beliefs shaped their agency in DE.

These top-level codes were refined using subcodes that captured specific patterns in the data. For instance, under Structure, subcodes included policy mandates, digital infrastructure, and professional development opportunities. Culture-related subcodes included collaborative practices, peer influence, and school leadership support. For Biography, the analysis focused on teachers' experiences, self-efficacy, and beliefs about DE.

Codes were then grouped into broader themes that captured significant patterns in the data, involving the identification of parent and child themes and the examination of their relationships, with constant reference back to the data to ensure they accurately represented participants' experiences. For example, observations of a teacher using digital facility to enhance student engagement were coded under "Digital Competence > Practical Application in Lessons". Related interview excerpts discussing the teacher's training experiences and their influence on confidence were coded under "Institutional Influence"> Training and Professional Development" and "Digital Confidence > SelfEfficacy with Digital Tools". As the analysis progressed, themes were reviewed and refined, with particular attention to instances where data overlapped across multiple themes. This iterative process involved collapsing or merging related themes to ensure clarity and coherence in the analysis.

This structured and detailed coding process allowed for a comprehensive analysis of how DE is implemented in rural classrooms and how teachers exercise their agency in integrating digital technology. The integration of theoretical frameworks ensured that the analysis was aligned with established scholarship on teacher agency and digital

agency . The findings from this analysis contribute to understanding the extent of "DE" in rural classrooms and the dynamics of teacher agency in these contexts.

6.6.3 Classification and framing framework for classroom observations

To systematically examine how rural teachers engage with DE in practice, I applied Bernstein's (2000) concepts of classification and framing to analyse classroom observation data. According to Bernstein (2000), Classification (C) is the strength of boundaries between different types of knowledge (e.g., digital vs traditional pedagogy), while Framing (F) is the degree of control exerted by the teacher over pedagogical interactions (e.g., structured vs student-led learning). In this study, strong classification (C+) represents situations where digital tools and traditional teaching methods were used separately, maintaining clear boundaries between them. Weaker classification (C−) represents Digital tools were integrated seamlessly into teaching, with fluid transitions between digital and traditional methods. Stronger framing (F+) is the teachermaintained control over the use of digital tools, dictating how and when they were used. Weaker framing (F-) is the teacher gave students autonomy in using digital tools, encouraging exploration and independent learning. The table below presents the categorisation and example of analysing classroom observation data in NVivo.

Table 6.5. Application of classification and framing to observation data

Classification/Framing	**Definition**	**Attributes in NVivo**

Stronger Classification (C+):	Digital tools and traditional teaching methods are used separately, maintaining clear boundaries between them.	**Lecture:** Used primarily for delivering content without the integration of digital tools.

		Teacher Use for Presentation: Digital tools are used only for presenting information, separate from traditional teaching methods.
		Teacher Use for Assessments: Digital tools are used specifically for assessments, without integrating them into regular classroom activities.
Weaker Classification (C−):	There is a seamless integration of digital tools into traditional teaching methods, with fluid boundaries between different types of knowledge.	**Collaborative Learning:** Digital tools facilitate group projects and collaborative activities.
		Individual Work: Students use digital tools independently to complete assignments.
		Group Work: Digital platforms support group work, blending digital and traditional methods.
		Teacher Use for Learning Activity: Digital tools are used as part of interactive learning activities.
		Students' Use for Learning: Students actively use digital tools to enhance their learning process.

Stronger Framing (F+):	The teacher maintains control over digital tools, directing how and when they are used. This involves structured use of educational software, predetermined digital activities, and teacher-led digital presentations.	**Lecture:** Teacher-directed lectures using digital presentations.
		Teacher Use for Presentation: Teacher-led use of digital tools for structured presentations.
		Teacher Use for Feedback: Teacher controls the digital tools used for providing feedback.
		Teacher Use for Assessments: Teacherdirected use of digital tools for conducting assessments.
Weaker Framing (F−):	The teacher gives more autonomy to students in using digital tools, supporting in students-directed learning and exploration. This includes open-ended digital projects, student-led research using online resources, and collaborative digital platforms.	**Collaborative Learning:** Students use digital tools autonomously to collaborate on projects.
		Individual Work: Students independently use digital tools for research and assignments.
		Group Work: Students organize and manage group activities using digital platforms.

		Students' Use for Learning: Students independently use digital tools to support their learning processes.
		Teacher Use for Learning Activity: Teacher facilitates student-centered learning activities using digital tools.

During the analysis, the above categories were applied to each set of observation notes. For example, descriptions of a teacher using PowerPoint slides separately from other teaching methods were coded as "Teacher Use for Presentation" under stronger classification (C+). In contrast, descriptions of the teacher facilitating interactive learning activities using digital tools were coded as “Teacher Use for Learning Activity” under weaker framing (F−). By categorising the observed pedagogical practices according to the concepts of classification and framing, the analysis revealed the extent to which the expectations of DE are being implemented in rural classrooms, and how control over the use of these tools is distributed between teachers and students.

The observed classroom practices were cross-referenced with interview data to explore teachers’ reasoning behind their digital pedagogical choices. For example, a teacher who exhibited stronger classification (C+) and framing (F+) in the classroom might explain in interviews that policy mandates or exam pressures shaped their approach. Conversely, teachers who demonstrated weaker classification (C−) and framing (F−) often cited personal beliefs in student autonomy and digital confidence as key

motivators. This categorisation enabled me to link classroom practices to interview findings, revealing how structural, cultural, and biographical factors influenced teachers' agency.

6.7 Summary

Overall, this chapter has detailed the processes of data collection and analysis used in this study, grounded in a critical-constructivist paradigm with an ecological orientation. It has explained how the research design was operationalised during fieldwork in two rural schools in Sichuan Province, China. The triangulation of data sources and methods helped to ensure credibility and coherence across findings. Following this chapter, the empirical findings and integrated discussion are presented in Chapters 7, 8, and 9.

7.The Gap Between Policy and Reality

7.1 Introduction

This chapter presents the first stage of findings by critically analysing how DE policies in China construct rural education as a "problem" and position rural teachers within national reform agendas. Using Bacchi's (2009) WPR framework (see Section 6.6.1), the chapter addresses four key WPR questions: How is the problem represented (WPR Q1)? What assumptions underpin it (WPR Q2)? How did it come about (WPR Q3)? And what effects does it produce (WPR Q5)?. The chapter begins by analysing national-level policy documents to identify how educational inequality in rural areas is framed as a 'problem' and how digital education and teacher development are positioned as solutions. According to Bacchi (2009), policy solutions are a powerful starting point for interpreting the underlying assumptions embedded in governance discourses. In the case of Chinese rural education, the dominant problem representation is one of educational underdevelopment—defined as poor quality, lack of resources, and a significant urban–rural divide. Digital education is framed as a modernising force capable of addressing these disparities, while rural teachers are portrayed as key agents of change who must adapt, upskill, and integrate technology to meet national goals.

The chapter then incorporates analysis of local documentary data, including government notices from municipal and county education departments at the research site. These local texts reveal how national policies are interpreted and enacted at the ground level. By comparing national directives with their local enactments, the chapter highlights the tensions between policy intentions and implementation, particularly in

rural contexts where resources, support, and infrastructure vary significantly. These policies promote ambitious visions of technology-integrated teaching and position teachers as key drivers of reform. However, as Ball et al. (2012) argue, policies are not simply implemented as written—they are enacted within specific institutional, social, and cultural contexts that shape and constrain their effects. Therefore, aligned with the study's ecological framing of teacher agency (Priestley et al., 2015), drawn on interview data, this chapter further explores how teachers engage with digital reform and examining how national policies construct rural education as underdeveloped and rural teachers as lacking digital competence.

7.2 Articulation of Desired Outcomes and Teacher Roles in China's Digital Educational Policies

7.2.1 Problem representations in DE policies (WPR Q1)

Drawing on Bacchi's (2009) WPR approach, this section identifies how DE policies in China construct specific 'problems' through their proposed solutions. In line with RQ1, this analysis examines how policy documents frame the role of digital education and rural teachers in addressing national educational challenges. The most frequently recurring solutions across the 13 policy documents (see Table 6.2) were analysed to identify dominant problem representations. These findings are summarised in the table below.

Table 7.1. Policy Solutions and Their Implied Problem Representations in Chinese DE Reform

Policy Solutions	Implied Problem Representation

Develop and deliver digital infrastructure (e.g. broadband networks, satellite systems) to rural schools (MoE et al., 2004; MoE, 2012; MoE, 2016a; MoE, 2018)	Rural schools lack sufficient technological infrastructure, leading to unequal access to digital education compared to urban areas.
Encourage student-centred and teacher-led Strengthen the information infrastructure and narrow the digital divide between urban and rural schools (The State Council of China, 2010; 2015; MoE, 2018)	inadequate for developing high-quality, There is a significant urban-rural disparity in access to information technology that undermines educational equity.
Promote the 'deep integration' of technology teaching practices (MoE, 2012; 2016a; 2018)	Technology use in rural teaching remains with superficial and is not yet embedded in everyday pedagogical practices.
Provide training and improve teachers' digital literacy and ICT competencies (MoE et al., 2004; MoE, 2005; 2016b; CPC & State Council of China, 2018)	Rural teachers are underprepared to adopt and implement digital tools in teaching due to The limited ICT skills and training.
Link teacher digital competence with and promotions (MoE, 2005; MoE, 2018)	Teachers lack incentive or accountability qualifications mechanisms to improve their digital competencies.
Reform pedagogy through technology-driven innovation and update teaching methods (The State Council of China, 2010; MoE, 2018)	Teaching concepts and practices are outdated and fail to meet the demands of modern, technology-enhanced learning environments.
pedagogical shifts enabled by digital tools (The State Council of China, 2010; MoE et al., 2020)	innovative learning experiences in the digital Traditional teacher-led instruction is age.

To structure the presentation of findings, each dominant problem representation identified in the policy texts is illustrated with a key example of a proposed policy solution. While each solution is drawn from a different document, several representations recur across multiple policies, reflecting consistent discursive patterns over time. At the same time, important variations exist while individual policies may differ in emphasis, many of the same problem representations recur across multiple documents. For instance, the problem of unequal access to quality education in rural areas is represented through repeated calls to 'strengthen the information infrastructure of rural schools' (MoE, 2012; MoE, 2016a; MoE, 2018; The State Council of China, 2015). Similarly, the issue of teachers' insufficient digital competence is addressed through targeted training programmes and efforts to link ICT proficiency with career progression (MoE, 2005; CPC & The State Council of China, 2018). Meanwhile, earlier policies emphasised infrastructure development, whereas more recent texts increasingly prioritise pedagogical innovation and teacher autonomy. Accordingly, the following two sections (7.2.1 and 7.2.2) present the key problem representations.

7.2.1.1 DE as a solution for various social and educational issues

In this research, by working backward from the solutions proposed in national policy documents, I identified how “problems” are constructed through the framing of these solutions. Across the policy discourses, DE is repeatedly framed as a strategic solution to address longstanding rural-urban educational disparities. For instance, the *2010 Outline* (Moe, 2012) explicitly describes China’s education as 'unbalanced between urban and rural areas’ and highlights the rural-urban divide as a major barrier to national modernisation. Within this discourse, DE is positioned not simply as an educational

enhancement, but as a mechanism to bridge socioeconomic inequalities, modernise rural teaching practices, and align rural education with broader national development goals.

The representation of rural underdevelopment is produced through particular linguistic patterns across policy texts (Bacchi, 2009). Early initiatives, such as the MDEPRS (MoE et al., 2004), aimed to equip rural schools with broadband and digital satellite networks. Later directives, such as the Ten-Year Development Plan for Education Informatization (MoE, 2012) and the Education Informatization 2.0 Action Plan (MoE, 2018), set quantifiable targets: '*by 2015, broadband coverage for all schools, and by 2020, minimum bandwidth requirements of 5 Mbps for rural schools*' (MoE, 2016a). The recurring language in these documents—such as 'narrowing the digital divide,' 'improving infrastructure,' and 'universal network access'—constructs technological modernisation as a technocratic, measurable solution to rural education challenges. In this framing, infrastructure becomes a proxy for educational equality: the assumption being that access to faster internet and more devices will, in itself, enable rural students and teachers to 'catch up' with their urban counterparts.

At the same time, the emphasis on material infrastructure sidelines other structural and pedagogical issues, such as teacher training, cultural adaptation of technology, or contextual differences in rural schooling. Phrases such as 'scarcity of educational resources' (MoE et al., 2004) and directives to “strengthen the information infrastructure of rural schools” (State Council of China, 2015) construct the problem of rural education as fundamentally a material deficit. Recent Chinese digital education (DE) policy documents continue to frame rural educational inequality as a challenge to

be resolved through the integration of technology, evolving from a primary concern with infrastructural deficits to a broader emphasis on teacher digital competence and pedagogical innovation. Within this shifting discourse, the “problem” is increasingly defined not simply as a lack of access, but as a gap in capacity—particularly the ability of rural teachers to enact "deep integration" of technology into classroom practice (MoE, 2018, 2019). In this context, teachers are represented as both the obstacles to reform and its instruments—expected to innovate and modernise pedagogical approaches, while simultaneously complying with centrally defined performance metrics and professional standards.

More recently, policy discourse has begun to incorporate the language of “Smart Education” (智慧教育), underpinned by China’s broader Artificial Intelligence (AI) strategy (State Council, 2017; MoE, 2018; 2021). AI is framed as a solution to persistent challenges such as personalised learning, efficiency in governance, and improved assessment. In Chinese policy contexts, however, this AI-enhanced vision often remains abstract and directive, focusing on systemic ambitions rather than concrete implementation mechanisms—particularly in rural or under-resourced regions. Such policy framing continues to prioritise technological fixes over structural transformation, reinforcing a techno-solutionist logic (Selwyn, 2019). Rather than focusing on pedagogy or teacher agency, the policies repeatedly define the issue in terms of technological lack, where access to infrastructure is seen as both the symptom and the cure for educational inequality. Thus, policy texts enact what Bacchi (2009) describes as a problematisation through omission: by framing access as the key issue, they obscure deeper pedagogical and sociocultural dimensions of DE reform.

Furthermore, the State Council (2006) articulates that the '*development and utilisation of information resources can facilitate information exchange and knowledge sharing, improving the quality of economic growth and promoting economic and social development transformation*'. This statement situates DE not only within the educational sphere but links it to broader national economic ambitions, suggesting that bridging the digital divide is vital for China's modernisation. Thus, DE reform is discursively tied to a nationalistic project of economic and social advancement, rather than being conceived primarily as an educational reform concerned with pedagogical transformation. This broader positioning of DE reframes rural teachers and schools: they are no longer viewed merely as educational agents but as instruments within a national technological modernisation strategy. Teachers' roles are implicitly recast as implementers of a digital agenda rather than as pedagogical decision-makers, a subtle but significant shift in the policy discourse.

Recognising the limitations of infrastructural solutions alone, more recent policy documents have introduced the concept of 'deep integration' (MoE, 2012; 2016a; 2018). This represents a discursive shift: no longer is it sufficient merely to install technology; it must also be meaningfully integrated into teaching practices. For example, Education Informatization 2.0 (MoE, 2018) states a commitment to 'promote the deep integration of information technology with education and teaching', signalling that infrastructure alone cannot achieve desired reforms.

However, even within this shift, the problem remains narrowly framed. More recent policies, especially Education Informatization 2.0 (MoE, 2018), signal an important discursive shift: recognition that access alone does not guarantee meaningful digital

education. Statements from MoE (2018) emphasise 'promoting the deep integration of information technology with education and teaching', 'strengthening teacher training' and 'improving teachers' information literacy', reflecting an evolution beyond simple infrastructure provision. However, this shift indicates a broader re-framing of the "problem": the issue is no longer solely the lack of technological infrastructure, but also the inadequacy of rural teachers' professional preparation for digital transformation. This re-framing implicitly places the responsibility for meaningful technology use on individual teachers, as will be further examined in the following section.

7.2.1.2 Rural teachers as key agents and problematised subjects in DE policies

In earlier stages—particularly during the Education Informatisation 1.0 phase—policies such as the Circular on the Implementation of the Pilot Work Programme for the Modern Distance Education Project for Rural Primary and Secondary Schools (MoE et al., 2004) and the Guidance on the Launching of the National Programme for Building Educational Technology Capacity of Teachers (MoE, 2005) highlighted the importance of improving teachers' information literacy. These early policies explicitly linked teacher capability to the quality of rural education. With the growing recognition that infrastructure alone cannot transform rural education, more recent DE policies have begun to reframe the "problem" as one of teacher readiness and professional competence. As reforms evolved, policies such as the State Council of China (2015) and MoE (2016b) introduced more targeted initiatives aimed at upgrading rural teachers' digital competencies. This shift becomes especially apparent in the era of Education Informatisation 2.0 (MoE, 2018), where rural teachers are increasingly positioned as both the drivers of reform and its obstacles. The problem is no longer merely insufficient

infrastructure; it is now also the perceived inadequacy of teachers' capacity to implement 'deep integration' in their classrooms.

In policy narratives, teacher training and professional development are emphasised as key solutions not merely to enhance teachers' technological use, but to empower them as facilitators capable of achieving 'deep integration' of digital tools into pedagogical practices (MoE et al., 2004; MoE, 2018). For instance, the *Guidelines on Education Informatisation 2.0* explicitly outline the need for teachers to "*actively integrate information technology into classroom teaching and improve students' information literacy*" (MoE, 2018). Thus, rural teachers are increasingly represented as both the "problem"—because they are seen as underprepared for digital transformation—and the "solution", envisaged as agents driving the modernisation of rural education through technology.

Furthermore, the *Opinions on Comprehensively Deepening the Reform of Teacher Construction in the New Era* (CPC & The State Council of China, 2018) frames teacher adaptability to digital technologies as a professional obligation: "Teachers should take the initiative to adapt to new technological changes… and effectively carry out teaching activities." Such statements position professional development not as support, but as a duty. Similarly, the *Guidance on Linking Teachers' Digital Application Competence to Career Development* (MoE, 2005) reinforces this framing by integrating digital competence to teachers' promotion and certification.

Another dimension of teacher problematisation is reflected in the establishment of rigid standards for digital competence. From 2012 onwards, policies increasingly advocate

the development of rural teachers' technological abilities and reform of training programmes to meet the unique challenges of rural education (MoE, 2012; 2016a; 2016b; 2018; The State Council of China, 2017). A major initiative in this direction was the launch of the *National Project to Improve the IT Application Capabilities of Primary and Secondary School Teachers (ITAC)* in 2013, later expanded into ITAC 2.0 in 2019 (MoE, 2019). ITAC 2.0 introduced rigorous training requirements—at least 50 hours annually over five years, with half focused on practical application—and placed the onus on provincial governments to monitor and assess teacher progress through ongoing evaluations of classroom practices and professional activities.

Furthermore, rural teachers are often framed as needing external support from outstanding urban teachers to keep pace with ITAC 2.0 implementation targets (MoE, 2019). In parallel, the *Information Technology Application Competence Standards for Primary and Secondary School Teachers (ITACS-Trial)* (MoE, 2019) provides a national framework for assessing teachers' digital competencies. Although intended to ensure quality and consistency, such standards exert considerable pressure on rural teachers and frequently become mechanisms of compliance rather than genuine professional growth.

In this regard, the policy emphasis on technology and innovation further reinforces the problematisation of teachers' digital competence. This shift raises concerns about the evolving role of teachers, who are increasingly viewed as facilitators of technology rather than autonomous pedagogical agents. This framing carries significant implications for rural teachers' professional identities and practices, and it highlights

the risk that digital education reforms may, unintentionally, constrain rather than expand teachers' agency in rural China.

7.2.2 What presuppositions or assumptions underlie this representation of the problem? (WPR Q2)

This section identifies the key presuppositions underpinning the problematisation of rural education and digital transformation in national policy documents. Three dominant assumptions emerge from the analysis:

(1) the presumed inferiority of rural education and the necessity of aligning it with urban standards.

(2) the belief in technological determinism and in teacher competence as the primary lever of reform.

(3) the assumption of ideological and pedagogical standardisation as necessary for national modernisation.

7.2.2.1 Rural education is behind and must catch up

A foundational presupposition across Chinese DE policy is that rural education is intrinsically lagging behind its urban counterpart, and that bridging this gap is both urgent and necessary for national modernisation. This is explicitly reflected in the *Outline of China's National Plan for Medium and Long-term Education Reform and Development (2010–2020)*, which defines the key challenge as "unbalanced and inadequate development", particularly between urban and rural areas (The State Council of China, 2010). The *Rural Teacher Support Plan (2015–2020)* similarly emphasises the need to "narrow the gap in education levels between urban and rural areas," with a focus on infrastructure and teacher development (The State Council of

China, 2015). This framing presupposes that rural education must conform to urban benchmarks of quality, and positions rural schools as sites in need of state-led intervention and uplift.

7.2.2.2. Technological determinism and teacher competence as reform drivers

Another crucial presupposition is the central role of technology—particularly digital infrastructure and teacher digital competence—as a solution to educational inequality. Technology is not only framed as a means of delivery but as a transformative force that can modernise teaching methods, improve learning outcomes, and integrate rural areas into the national development agenda. The *13th Five-Year Plan for Education Informatisation* (MoE, 2016a) asserts that "education informatisation will lead to new teaching and learning models", while the *Education Informatisation 2.0 Action Plan* (MoE, 2018) calls for "deep integration" of digital tools into pedagogy. These visions rest on the assumption that technological innovation, if properly implemented, will automatically produce pedagogical change and educational quality.

This assumption extends to how teachers are problematised. Rural teachers are frequently portrayed as under-skilled and lacking digital literacy, which in turn justifies extensive capacity-building interventions. For instance, the *Opinions on Strengthening the Rural Teacher Workforce in the New Era* (MoE et al., 2020) states that

"technological competencies are central to a teacher's ability to deliver high-quality education". Policies such as the *IT Application Capability Enhancement Project 2.0* (MoE, 2019) and earlier initiatives like the *National Programme for Building Educational Technology Capacity of Teachers* (MoE, 2005) impose structured digital

training programmes and link technological proficiency to performance evaluation and promotion.

7.2.2.3. Standardisation and ideological alignment as equity

A third presupposition concerns cultural and ideological alignment. Several policy documents promote the integration of "core socialist values" into teaching, reinforcing the view that education is not merely a site of learning, but also one of ideological formation. For example, the *Opinions on Comprehensively Deepening the Reform of Teacher Construction in the New Era* (CPC & The State Council of China, 2018) describes education as a platform for cultivating citizens who are "morally grounded and aligned with the needs of national rejuvenation." This reflects a broader assumption that homogenisation of educational standards across regions leads to equity.

Moreover, there is a subtle but persistent narrative that frames rural regions as passive beneficiaries of centrally prescribed reforms. Policy discourse rarely acknowledges local agency or community variation, instead promoting a standardised teaching model aligned with the national blueprint. For instance, the *Education Informatisation 2.0 Action Plan* (MoE, 2018) highlights the need to "update teaching concepts" and move toward a model that is "student-centred and teacher-led," echoing global reform rhetoric (discussed in Chapter 3) but implemented within a tightly controlled and highly structured national system.

7.2.3 How has this representation of the 'problem' come about? (WPR Q3)

The representation of DE as a solution to rural educational inequality is closely tied to China's broader socio-economic and political agenda. From early strategic documents, such as the National Informatisation Development Strategy (2006–2020) (The State Council of China et al., 2006), to more recent initiatives like Education Informatisation 2.0 (MoE, 2018), DE has been positioned not simply as an educational reform, but as a catalyst for national modernisation, rural revitalisation, and economic transformation. Within this discourse, digital transformation is portrayed as a necessary intervention to close rural–urban gaps and to equip all citizens—especially rural youth—for participation in the knowledge economy. Policy texts such as the Outline of China's National Education Plan (2010–2020) and the Thirteenth Five-Year Plan (The State Council of China, 2010, 2017) illustrate how DE reform is entwined with developmental and ideological imperatives. Education is framed as both the foundation for national rejuvenation and the medium through which rural backwardness can be corrected. In this logic, infrastructure and technology integration are not just support mechanisms but essential tools to uplift rural schools and ensure their alignment with centralised visions of progress.

This representation of the "problem" has evolved over time—from a narrow focus on digital access and infrastructural deficits to a more nuanced concern with teacher competence and pedagogical application. In earlier policy phases (e.g., MoE et al., 2004; MoE, 2005), rural teachers were framed as under-resourced actors in need of digital literacy support. However, in later policies such as Education Informatisation 2.0 and the IT Application Capability Enhancement Project 2.0 (MoE, 2019), the

problem has been reframed: the issue is no longer only lack of infrastructure, but also the perceived inadequacy of teachers to enact “deep integration” of technology into pedagogical practice. Rural teachers are thus positioned as both the “barriers” and the “bearers” of reform—responsible for actualising state goals but constrained by capability and context. This policy discourse reinforces a technocratic view of reform in which change is measured through implementation fidelity, digital metrics, and compliance with centrally defined standards, rather than through teacher-led innovation or contextresponsive practice.

This technocratic framing aligns with international discourses around AI and educational governance as discussed in section 7.2.1.1. While references to AI remain uneven across education-specific policies, they reflect a growing alignment with international narratives like UNESCO (2022) and the OECD (2024) who advocate for the integration of AI to drive innovation and efficiency in education systems worldwide. In this global context, China's move toward AI-enhanced DE reform signals not only a desire to modernise education domestically but also to assert leadership in global digital policy innovation. Once again, the assumption persists that technological solutions--if implemented at scale--can deliver equitable, high-quality education. Yet, in this evolving landscape, rural teachers may face even greater pressures, not only to integrate digital tools into their classrooms, but to adapt to AI-powered platforms with minimal training and limited institutional support. As Knox (2020) argues, AI discourses often mask deep inequalities and presume the universal applicability of technical solutions. In China's context, AI-related reforms risk reproducing earlier tensions in DE policy: grand national visions that overlook the material constraints and pedagogical

complexities faced by frontline teachers. While the implications of these developments, particularly for rural teachers, are underexplored in policy texts.

Taken together, the current representation of the problem in China's DE policy reflects a convergence of developmental ambitions, ideological imperatives, and international influence, shaped by a belief in the power of technological modernisation. Yet it continues to marginalise rural teacher agency by framing reform as a top-down process and constructing teachers as instruments of policy rather than co-constructors of meaningful digital learning. These dynamics will be explored further in the empirical chapters that follow, particularly in relation to how rural teachers navigate, resist, and reframe these policy expectations in their local contexts.

7.3 The Effects of Problem Representations in Digital Education Policy (WPR Q5)

This section examines how the problem representations embedded in DE policies (see Section 7.2) produce a range of structural and pedagogical effects on rural schools and teachers. To do so, I analysed the websites of local education authorities at my research site to understand how policies are communicated and enacted. My analysis of government notices suggests that municipal policies largely replicate national guidelines with minimal adaptation for local conditions. Municipal notices reflect three dominant policy directives from the central government (as analysed in Section 7.2): infrastructure and security, teacher training and digital transformation, and pedagogical integration.

At the county level, however, the enactment of these policies becomes far more complex. Local governance dynamics and resource limitations significantly shape how policy directives are implemented in practice. One notable structural effect has been the establishment of new administrative bodies and digital governance frameworks. For instance, policies such as Education Informatisation 2.0 have led to the creation of institutional entities like the Educational Informatisation and Big Data Centre, which is tasked with overseeing digital infrastructure, managing educational data, and promoting informatised teaching models. These developments align with broader reforms noted by Tang (2021), where provincial platforms aim to integrate data governance, artificial intelligence, and evidence-based management into the education sector.

While these frameworks are intended to modernise educational administration and improve equity in resource distribution, in practice they often reinforce existing structural inequalities. As discussed in Chapter 2, the layered bureaucracy associated with these digital governance systems frequently complicates implementation, particularly in rural areas. The centralised and top-down nature of policy transmission not only burdens frontline schools with compliance tasks but also limits their autonomy to adapt reforms to local realities. As a result, the structural reproduction of urban-rural inequalities persists, and teacher agency remains constrained by misaligned policy assumptions that fail to account for the lived contexts of rural educators.

7.3.1 Centralised procurement and standardised infrastructure: a double-edged sword for rural schools

Municipal notices focus heavily on procurement, cybersecurity, and system evaluation, highlighting the central government's push to modernise and standardise education informatisation. For instance, several notices announce bidding processes for digital security services and IT infrastructure upgrades, such as examination management systems and teacher assessment platforms. Such policies prioritise administrative efficiency and compliance over pedagogical support for teachers' use of digital tools in daily instruction. These notices reflect top-down expectations for teachers to embrace digital transformation, echoing national discourses that equate digital integration with professional excellence. The emphasis on digital literacy training suggests an implicit assumption that teachers should be fully prepared to integrate technology into their classrooms. This focus on technological governance is similarly evident at the county level.

At the county level, these policies translate into large-scale investment projects aimed at upgrading school facilities. For instance, in this research site, the county government invested 60 million yuan (£7.5 million) in a digital education initiative, equipping schools with computer labs, smart classrooms, and recording studios. Moreover, shortterm training sessions were organised to ensure teachers can integrate these facilities effectively into their teaching and meet the ITACS framework (discussed in Chapter 7.2.2) that sets clear national standards for teachers' digital competence. As the government noted, "*142 teachers attended a two-day training workshop on managing and maintaining digital tools, such as interactive whiteboards and campus television*

stations. The training focused on basic functionalities and technical troubleshooting, ensuring teachers felt confident enough to use the equipment".

However, this does not align with the realities faced by rural teachers. This lack of contextual adjustment highlights a gap between policy intent and the realities of implementation in different settings and limits the effective contextualisation of these policies in rural schools. This misalignment is further evidenced in the standardised procurement and deployment of digital tools, which often fail to account for the unique challenges faced by rural schools. For example, a centrally procured digital platform, the 'Xiwo System', was frequently mentioned by all participant teachers—despite being based in different schools and counties. Its practical use, however, is undermined by the lack of localised technical support. As one headteacher described, the bureaucratic maintenance process highlights the difficulties schools face when equipment breaks down:

> "*Equipment failures need to be reported to higher authorities via a maintenance form, and we then have to wait for the supplier to handle repairs. While there is a maintenance point set up between several towns with support staff, complex issues require specialized technicians from the province, causing further delays. Additionally, only two free repairs are offered, and further repairs come at a cost, which rural schools simply cannot afford.*" (Interview, The head of Xing Long Secondary)

This statement illustrates the direct consequences of centralised resource management on rural schools. The inability to finance necessary repairs renders digital tools ineffective, undermining their intended purpose to enhance education. The lack of

locally tailored financial strategies highlights a disconnection between policy goals and implementation realities. This aligns with previous research indicating that centralised funding systems often fail to meet localised needs, particularly in resource-scarce settings (Pu, 2004; Huang et al., 2020). The emphasis on performance-driven metrics (see Section 3.3) exacerbates inequities by directing resources towards schools that can deliver measurable success, often urban institutions, rather than addressing the foundational gaps in rural schools. These systemic flaws in resource allocation perpetuate a cycle of underperformance and underfunding in rural areas, creating further barriers to achieving the goals of digital education policies.

7.3.2 Digital competence as a compliance mandate: the burden on teachers

Municipal notices frequently highlight digital competence as a key competency for teachers, reflecting national policies that frame digitalisation as a professional expectation. Phrases like "strengthening teachers' digital literacy through whole-school strategic planning" and "including digital competence in teacher evaluations" appear frequently in government documents (e.g., MoE, 2018; MoE, 2022; MoE, 2023). These statements illustrate a top-down expectation for teachers to embrace digital transformation, reinforcing a discourse that equates technology integration with professional excellence.

This framing is operationalised through a series of compliance-driven mechanisms. At the county level, this has led to compliance-focused training mandates. Teachers are often required to complete online modules, upload digital lesson recordings, and attend brief peer-led sessions. These sessions are typically one-off, and follow-up support is

minimal. As reported in later Section 7.4, this approach not only burdens teachers with additional responsibilities but also lacks adequate follow-up or institutional support. While national standards for digital competence were initially introduced as benchmarks for professional growth (see Section 2.3.4), these policies reinforce a topdown accountability model. Teachers' ICT use is now assessed through classroom observations, lesson evaluations, and student outcomes. Participation in programmes like the National Training Plan (MoE & MoF, 2010; MoE, 2018) is often linked to career progression, encouraging teachers to comply rather than reflect.

Moreover, the uniformity of these mandates risks deepening existing disparities. In rural schools, where digital infrastructure, training access, and ongoing support remain limited, yet policies assume a baseline of readiness that does not reflect local realities (Wang et al., 2017). Teachers in these areas must navigate reforms with limited guidance. This reinforces the critique that DE policy often prioritises standardisation over contextual sensitivity (Wu et al., 2022). While national goals emphasise digital equity, local implementation still depends on uneven resources and capacities. This highlights how local education departments prioritise compliance over contextual adaptation, ensuring that schools and teachers meet national targets rather than tailoring initiatives to local realities.

7.3.3 Digital teaching models: imposed solutions vs local realities

While municipal authorities continue to promote the policy solutions, they are rarely adapted to the capacities and constraints of rural schools and teachers. In my study, a

prominent example is the rollout of the Xiwo interactive whiteboard system, a widely procured tool across counties-- as mentioned in Section 7.3.1. Rural teachers in my study frequently cited training sessions showcased its use in urban classrooms where well-resourced teachers designed interactive lessons with real-time feedback, multimedia integration, and student collaboration. These trainings—intended as policy solutions—presented urban classrooms as models of ideal technology integration.

Similarly, it also exemplified by the limited exposure of rural teachers to emerging technologies. For instance, while I found a municipal policy promoted AI-powered teaching solutions, interview data revealed that most rural teachers had no exposure to AI-based tools: "*Generative AI is getting a lot of attention. I tried it out recently—it's incredibly smart. To be honest, I'm a bit worried that it could replace my job (as a teacher)*" (Interview, Mrs Zhou). This was the only teacher among the 26 participants who had even heard of generative AI in an educational context. For the rest, AI was a foreign concept, with no relevance to their daily teaching.

This discrepancy reflects a broader issue with policy design and implementation. As Luo et al. (2022) argue, ICTs have the potential to disrupt conventional pedagogical norms and improve rural education, but their effectiveness is undermined by persistent socio-economic inequalities and a lack of structural adaptation. My findings similarly reveal that without adequate infrastructural support, professional development, and localised agency, digital education reforms risk exacerbating rather than alleviating structural disparities in China's rural education system. My data revealed that while rural schools were equipped with the same whiteboards, they often lacked the digital content, stable internet, or technical support required to fully utilise these tools as

evident in Section 7.4. Even the shared hardware, does not translate into shared capabilities. In this study, several teachers described the Xiwo whiteboards as underused or purely decorative due to limited training and poor connectivity (see Section 7.4). Teachers were shown an urban ideal but returned to schools with neither the tools nor the context to replicate it. These findings echo challenges identified in other contexts, such as in Nii Akai Nettey et al.'s (2024) research in Ghana, where inadequate digital infrastructure, outdated tools, and lack of software subscriptions severely limited teachers' ability to integrate ICT meaningfully.

Together, these findings demonstrate that while digital education reforms hold promise, their success in rural China is constrained by systemic inequalities and structural disconnections. Confirming Howlett's (2021) argument that rural schools remain structurally disadvantaged within China's broader educational landscape. These systemic challenges—including rigid resource allocation mechanisms, performative compliance cultures, and a lack of local adaptation, significantly affect the experiences of teachers who are tasked with navigating these complex frameworks. In the following sections, I delve into the findings from the analysis of teacher interviews to explore how these structural effects translate into lived experiences within rural schools.

7.4 The subjectification effects on rural teachers

7.4.1 Teachers' educational values and attitudes toward DE

The analysis of interviews revealed that teachers' educational values, beliefs, and attitudes shape their engagement with DE. Aligned with Priestley et al.'s (2015) ecological approach to understanding teacher agency, these perspectives deeply rooted

in their personal and professional experiences, play a crucial role in their iterative engagement with DE policies. To deepen this analysis, the concept of digital agency (Passey et al., 2018) is also integrated to capture how teachers' digital competence, confidence, and accountability interact with broader ecological factors. This highlights that teachers' engagement with digital reform is shaped by both their professional autonomy and their levels of digital competence, confidence, and accountability. The findings presented below reveal that while some teachers demonstrate compliance with policy directives, this compliance is often superficial or performative, masking deeper tensions between policy goals and classroom realities.

7.4.1.1 Confidence in traditional methods and cautious adoption of DE

For experienced teachers, extensive familiarity with traditional teaching methods often translates to a reserved stance on Digital Education (DE). This caution stems from confidence in established practices and a perception that digital tools, while potentially useful, may not directly enhance core teaching objectives. For example, Mr Deng, a secondary school teacher with 27 years of experience, expressed a sceptical view of DE:

> "*Digital education is merely formalism. There are no real gains; I think most teachers don't really get much from it.*" (Interview, Mr Deng)

His perception of DE as an additional task appears rooted in his professional journey, where digital tools were historically limited in teaching context. As shown in Table 6.1 (see Section 6.2) and explained in Chapter 3, due to chronic teacher shortages, many rural teachers have taught or continue to teach multiple subjects. Mr Deng, for example, has taught not only Chinese language and literature, mathematics, and chemistry, but

also music, physical education, geography, history, and art. This context of needing to teach different subjects and lack of expertise has led them to an approach of presenting the content of the textbook in the simplest and quickest way possible to complete the teaching task. Mr Deng's perception aligns with his reliance on digital technology as an alternative way to present textbook contents and preference for traditional approaches. Mr Deng elaborated on his approach to integrating technology into his teaching, which prioritises familiar methods over innovation:

"*Normally, I first need to be very familiar with the textbook materials, then I select the best presentations from our Xiwo resource library… The presentations in Xiwo are very good; I generally do not need to modify them and can display them directly*."

(Interview, Mr Deng)

His approach reflects a belief in the sufficiency of established practices to meet his students' needs. Similarly, Mrs Zhang, who has 25 years of teaching experience and has taught various subjects, views digital technology as a supplementary tool intended to complement rather than replace traditional methods:

"*Digital education should incorporate advanced information technology tools based on traditional teaching and learning*." (Interview, Mrs Zhang)

Mrs Li, with 12 years of experience teaching English and moral education, also highlighted the supplementary role of DE, linking its use to the enhancement of established teaching approaches rather than a transformative shift:

"Digital education in rural areas implies making full use of existing technologies to complement traditional learning methods." (Interview, Mrs Li)

This cautious stance is further illustrated by Mr Han, a teacher with 23 years of experience, who displayed a strong preference for manual preparation over digital tools. He remarked:

> "*The technology is just a substitute. I'm used to preparing notes by hand. For me, this works, and I don't need a digital tool to help with it.*" (Interview, Mr Han)

The subject being taught also plays a significant role in shaping teachers' cautious attitudes towards DE. Mrs Zhang's reliance on traditional methods is tied to her belief that mathematics, as a subject, does not require elaborate digital integration:

> "*Technology doesn't play a necessary role in my classroom. In maths, the most important thing for students is to know how to solve the math questions correctly. This doesn't need a fancy design for the lessons."* (Interview, Mrs Zhang)

This approach aligns with her reliance on traditional methods, which she perceives as effective and sufficient, as reflected in her earlier comments on DE. Such a resultsdriven approach is typically tied to the performance-oriented traditions of rural education. As Mrs Chen, a primary school art and music teacher with 10 years of experience, noted, the perceived dispensability of her subjects further diminishes the motivation to innovate with DE tools:

> *"With the tech issues here, I just use what works best for my lessons. Students see art as dispensable, so using digital methods doesn't always feel worth it.*" (Interview, Mrs Chen)

These teachers illustrate a form of "static agency," where their confidence in established methods discourages them from adopting new digital practices, especially when those

tools do not directly align with their teaching objectives. In contrast, some early career teachers who belong to "digital generation", demonstrated a distinctive approach of digital engagement in their practices, shown in **7.4.3.**

7.4.1.2 Limited conceptual understanding of DE

Across the interviews, many teachers demonstrated limited familiarity with the formal concept of DE. For example, in responding to "how do you understand the concept of DE/EI?", many teachers expressed uncertainty about the purpose and scope of digital education. Miss Li's response below represented the majority of teachers' answers: "*I'm not sure, I can't think of anything*". (Interview, Miss Li)

This ambiguity was echoed by others. For instance, Mr Tan responded:

> "*I think it means using computers and screens…This is my understanding. I haven't read policy, so I'm not clear what else it includes*." (Interview, Mr Tan)

Similarly, Mr Zhao's answer also reflected this uncertainty and often mix DE with other education initiatives:

> "*(after thinking for a while) This is too complicated, I never think about it. Currently, our school is implementing an education policy that promotes the comprehensive development of moral, intellectual, physical, aesthetic, and labor education. I haven't really thought about this question*". (Interview, Mr Zhao)

Other teachers described DE in terms of specific technological tools, such as interactive whiteboards or multimedia resources, rather than as an integrated, transformative approach to teaching. These perceptions often stemmed from the fragmented nature of

policy delivery and limited opportunities for professional development. For instance, Mrs Zhang hesitated before attempting to define DE, saying:

"*It probably means applying information technology and digital resources in teaching to improve educational outcomes. After all, it is the era of information technology, and education needs to keep up with the changes in the broader environment*." (Interview, Mrs Zhang)

This definition demonstrates a basic awareness of DE's broader policy goals but falls short of capturing its pedagogical depth. Similarly, Miss Zheng shared:

"*I think the concept of informatisation is too broad, and I don't have a specific grasp on it. Honestly, I've never had a clear understanding of educational informatisation. My understanding is that it involves using digital means in our classrooms, such as Xiwo, which provides numerous resources for us to choose and use.*" (Interview, Miss Zheng)

A small number of teachers demonstrated a more advanced understanding of DE, recognising its potential to transform teaching and make learning more interactive and equitable. For instance, Mrs Chen described DE as a means of

"*Using all available technology to enhance the educational experience, making it more interactive and expansive. It allows us to overcome geographical and socioeconomic barriers to provide a broader, more enriched curriculum*". (Interview, Mrs Chen)

However, such perspectives were rare. Out of the 28 interviewed teachers, only four articulated a broader or more policy-informed view of DE. The majority described it in

terms of hardware use, presenting digital elements, or pandemic-era remote teaching, rather than conceptualising it as a systemic shift in pedagogy. These narrow understandings were pervasive, suggesting that for most rural educators, DE remains associated more with functional tasks than with educational transformation.

Despite these individual variations, I found in practices, both from classroom observations in Chapter 8 and teachers' shared experiences often inconsistent with their expressed understanding of DE. For example, Miss Wang believed:

> "*It (digital technology) enhances the learning experience and makes teaching more effective*." (Interview, Miss Wang).

But the teaching practice as she described for this objective was bit different. She cited:

> "*For example, the last time my class was about the town of Venice. If I don't have a video to show the kids the dinghies in Venice, what the town of Venice looks like, the kids can't really understand that the town is built on water."* (Interview, Miss Wang).

This use of video does indeed represent an important step toward "modernisation," enabling students in rural areas to visualise distant places otherwise inaccessible to them. However, what is less evident in this approach is the kind of pedagogical transformation often associated with digital education reform—namely, fostering student-led exploration, critical thinking, or creativity (Buckingham, 2007; Zhao et al., 2018). Miss Wang herself underscored this limited use by noting:

> "*This is an art appreciation class—with such digital element, I don't need to explain more. That really helps to reduce my workload.*" (Interview, Miss Wang)

Here, the video serves more as a means of content delivery and teacher convenience rather than a platform for deeper engagement. Students remained largely passive recipients of visual content, with little opportunity to interact, question, or create. While it is important to acknowledge that traditional pedagogy has its own strengths—such as structured delivery and clarity—what I observed was a replication of traditional didactic methods using digital means. This phenomenon was not isolated to Miss Wang's case; rather, it echoed across nearly all participating teachers' practices. The reproduction of traditional pedagogy in digital contexts aligns with a deeper, entrenched perception of education in rural settings as found in the following section.

7.4.1.3 Teachers' perception of rural education and the entrenched educational norms

The perception of education in rural settings, as expressed by teachers in the interviews, reveals deeply rooted values and priorities shaped by the realities of rural life and systemic limitations. For many teachers, the core of rural education lies in foundational knowledge, moral development, and academic achievement, with technology being employed primarily to reinforce these priorities rather than to foster transformative educational practices. For instance, Mrs Zhang articulated the core purpose of education in rural settings:

> *"I believe the focus of rural education should be on developing students' fundamental skills, especially in mathematics, reading, and writing. I've always believed that solid foundational education can open up more future possibilities for children, no matter where they end up.*" (Interview, Mrs Zhang)

Mrs Li highlighted the dual role of education in providing functional knowledge and fostering moral values:

"In rural education, the focus often revolves around providing students with the basic knowledge they need to function well in society, alongside a strong emphasis on moral values." (Interview, Mrs Li)

The emphasis on foundational skills is closely tied to accountability measures. Teachers face significant pressure to improve students' test scores, which are used as a key metric to evaluate their performance. Mrs Liu highlighted this linkage:

"If the average grades of our class consistently rank in the bottom three, we are interviewed by the education bureau." (Interview, Mrs Liu)

This results-driven culture reinforces the use of technology as a tool for enhancing academic achievement. Teachers often adopt DE tools to increase students' engagement and support exam preparation. Miss He explained the perceived benefits of technology: *"In terms of professional performance, I do see a benefit, as I feel the support of this technology has increased students' interest in learning, which has also improved their grades and brings me joy." (Interview, Miss He)*

Similarly, Mrs Zhang emphasised the link between digitalisation and academic outcomes:

"The most direct reflection is certainly students' grades. Digitalisation attracts students' attention and improves their interest." (Interview, Mrs Zhang)

These emphases on foundational knowledge underscores a pragmatic approach to teaching, where limited resources are channelled into ensuring that students have the basic skills necessary for academic progression or societal participation. This emphasis

was reinforced by the recognition of systemic challenges in rural contexts, such as limited parental involvement and low levels of guardians' education. Mrs Zhang observed:

"*In rural areas, the lack of parental education is a severe issue. Many parents go out to work, leaving children mostly in the care of grandparents. Coupled with generally low educational levels among parents, this results in shortcomings in children's moral education*." (Interview, Mrs Zhang)

In addition to foundational skills, moral development is seen as a crucial component of rural education. Teachers highlighted the challenges posed by parental absenteeism and low educational levels among caregivers, which leave children with significant gaps in home education. Mr Deng reflected on the importance of moral education in addressing these gaps:

"*I think the most important aspect of rural education is teaching students how to be good people. Many parents in rural areas are away working, leaving children in the care of grandparents, creating a significant gap in home education."* (Interview, Mr Deng)

This view was echoed by Miss He, who noted the significance of instilling strong personal and social values in students:

"*I always tell them to learn to be good people first, then to be proficient in their tasks, especially since they are at a rebellious age and might not have mature thoughts yet*." (Interview, Miss He)

The emphasis on moral education reflects a broader cultural value placed on character development as a means of fostering responsible and ethical citizens, enduring Confucian values and a deeply rooted belief in education as a pathway to personal virtue and social mobility (Hayhoe, 2016; Kipnis, 2011). In rural contexts, it offers cultural continuity and compensates for material disadvantage—though often subordinated to exam-oriented goals shaped by systemic pressures, as discussed in Sections 3.5 and 3.7.

7.4.1.4 Attitudes toward DE

Teachers' attitudes towards DE reflect a spectrum of perspectives shaped by professional experiences, contextual realities, and personal engagement with digital tools. These perspectives range from pragmatic appreciation of its potential to scepticism stemming from implementation challenges and resource constraints.

As illustrated in the above section, many teachers perceive digital technology as a means to supplement traditional teaching methods rather than replace them. This perspective underscores the role of DE in enhancing existing practices rather than driving radical pedagogical transformation, particularly in a resource-limited rural setting. For instance, Mrs Zhang articulated this view clearly:

> "*Although my mastery of technology is not deep, I believe that digital technology plays an indispensable role in modern education. It can not only help students gain broader knowledge but also stimulate their interest in learning, especially in subjects like mathematics, which require a lot of practice and exploration*." (Interview, Mrs Zhang)

This sentiment was echoed by Mrs Li, who emphasised the ability of digital technology to address contextual challenges by fostering creativity and engagement:

"*It's about being creative with what we have to enhance student engagement and understanding, especially for complex subjects like English*." (Interview, Mrs Li)

For teachers like Mr Xu, the interactive potential of digital tools adds a dynamic layer to teaching:

> "*In the past, teachers used a piece of chalk and wrote from beginning to end. Nowadays, we can do interactive games with students on the screen, which makes learning more engaging.*" (Interview, Mr Xu)

Beyond immediate classroom benefits, some teachers expressed optimism about the broader potential of DE to transform rural schooling. Mrs Wu highlighted its role in facilitating resource sharing and making abstract concepts more tangible:

> "*Digital education has enabled us to share educational resources and make knowledge more concrete. This has been integrated into our teaching practices, though traditional methods still dominate.*" (Interview, Mrs Wu)

Similarly, Mr Guo reflected on the broader possibilities offered by DE, expressing hope for its future impact:

> "*Technology will definitely change rural education, though I'm not sure how. Broadly speaking, I hope it not only helps students learn book knowledge but also enhances their learning skills.*" (Interview, Mr Guo)

Mrs Huang offered a vision of DE as a means to bridge urban-rural educational disparities, advocating for its role in fostering equality:

"*The real focus should be on using these technologies to innovate in teaching methods and curriculum delivery, ensuring that rural students can benefit from the same advancements as those in more urban settings*." (Interview, Mrs Huang)

These perspectives demonstrate the perceived benefits of digital technology and digital education as articulated by rural teachers. From stimulating student engagement to facilitating resource sharing and bridging urban-rural disparities, educators recognise the potential of digital tools to supplement traditional teaching methods and address specific challenges. Whether through creating more interactive classrooms, broadening access to resources, or envisioning systemic change, these benefits are valued as ways to enhance the learning experience in rural schools.

These perspectives primarily reflect teachers' aspirations and perceived benefits of digital integration. However, these perceived benefits often yield to the constraints of reality and are further compounded by teachers' critiques of DE Implementation. For many teachers, the implementation of DE initiatives like 'IT 2.0' has added administrative burdens that detract from their teaching focus. For example, Mrs Chen discussed the disconnect between policy intentions and classroom realities:

"*The introduction of the 2.0 educational platform was primarily to assist us in documenting our teaching practices. It's a form of assessment where we upload our classroom recordings as homework. While digital tools make abstract concepts more tangible, the necessity to meet specific digital competencies can sometimes feel forced, detracting from the organic learning process.*" (Interview, Mrs Chen)

Similarly, Miss Wang expressed frustration with the extra workload imposed by the initiative:

> *"In fact, I use PowerPoint in every lesson, but this 2.0 initiative is just an additional workload*." (Interview, Miss Wang)

Mr Deng also highlighted the challenges associated with formal DE requirements, describing the process as both burdensome and demoralising:

> "*The trainings and tasks are just for ticking boxes; without an assessment, they have no impact. All of this increases our burden and creates frustration.*" (Interview, Mr Deng)

These challenges are further compounded by the lack of contextual adaptation, as Mr Guo explained:

> "*Currently, digitalisation is uniform nationwide, but many times it's not suitable for our context. It must be adjusted to be practical and useful, rather than a waste.*" (Interview, Mr Guo)

These perspectives underscore a misalignment between policy directives and the realities of rural teaching, which is further exacerbated by the rigid accountability structures embedded within DE policies, particularly IT 2.0. For many teachers, these policies have transformed DE into a compliance mechanism, overshadowing its potential as an educational innovation. As highlighted in Section 7.4.1.3, teachers often navigate accountability demands through performative or selective responses to policy

directives. Mrs Gao's statement represented most participants' attitudes toward DE policies:

"It's all about completing 'homework' or participating in competitions; no one would record these classes otherwise." (Interview, Mrs Gao)

Teachers also noted that these formal requirements often overshadow pedagogical priorities. Mrs Chen explained:

"*The assessment criteria require us to demonstrate specific digital skills we've learned, which pushes me to incorporate these tools more regularly. However, it feels like ticking off a checklist sometimes, which can detract from the organic learning process."* (Interview, Mrs Chen)

Amid these frustrations, varying attitudes toward DE reveal a spectrum of perspectives, ranging from scepticism and frustration to cautious optimism about its potential to address systemic disparities and enhance education. More than half of the participant teachers expressed doubts about its transformative potential, particularly in rural contexts where resources and training are limited. Miss Zheng highlighted the challenges of resource-sharing and the limited impact of DE in addressing structural inequities:

"*I don't know how digital education could change the situation for rural students. More changes, I think, might relate to resources. If we could achieve a sharing of resources between urban and rural areas, it might change the current situation of limited educational resources for rural children and teachers.*" (Interview, Miss Zheng)

Mr Deng further emphasised the gap between policy expectations and ground realities:

"*The national policy on educational informatics may sound ideal, but its practical application and the role teachers play in this need to be realistically assessed and adjusted based on direct feedback from educators who understand the ground realities.*" (Interview, Mr Deng)

Some teachers also questioned the appropriateness of uniform digitalisation policies across diverse regions. Mr Han argued that a one-size-fits-all approach often leads to inefficiencies in rural areas:

"*Currently, digitalisation is uniform nationwide, but many times it's not suitable for our context. It must be adapted to be practical and useful, rather than a waste.*" (Interview, Mr Han)

Similarly, Mr Luo expressed frustration about the impracticality of certain digital tools: "*I hope that the state doesn't come out with very difficult digital things to teach and let us rural teachers apply them. Many times, they are not adapted to our realities, making them difficult to use and ineffective.*" (Interview, Mr Luo)

For several teachers, DE represents an added workload rather than a transformative innovation. Miss Wang remarked:

"*In fact, I use PowerPoint in every lesson, but this 2.0 initiative is just an additional workload.*" (Interview, Miss Wang)

Mr Deng echoed this sentiment, pointing to the bureaucratic nature of DE initiatives that overshadow pedagogical goals:

"*The trainings and tasks are just for ticking boxes; without an assessment, they have no impact. All of this increases our burden and creates frustration.*" (Interview, Mr Deng)

Doubts about DE's ability to revolutionise rural education are compounded by concerns about the long process required to achieve meaningful change. Mr Peng, for instance, remarked:

"*To truly achieve what's called 'educational informatization,' I think it's very challenging. It can only be achieved if it's properly learned in college, and these college graduates come to our rural schools to teach, gradually effecting change.*" (Interview, Mr Peng)

While teachers express varying attitudes towards DE—ranging from optimism about its transformative potential to scepticism regarding its practical value—an overarching issue emerges regardless of their stance, they remain unclear on how to translate DE into meaningful classroom practices. Teachers who are optimistic about DE, such as Mrs Wu and Mrs Huang, acknowledge its potential to address educational inequities and innovate teaching methods. However, their practices often remain rooted in traditional methods, with DE functioning as an occasional supplement rather than a transformative force. For instance, while Mrs Wu emphasised the role of DE in resource sharing and concretising knowledge, the integration of these resources was described as limited by entrenched habits and structural constraints.

Similarly, those who hold a more critical view of DE, like Mr Han and Mr Luo, highlight its impracticality in rural contexts and the challenges of uniform policy

implementation. However, their reluctance often stems from a lack of actionable strategies to reconcile DE with the realities of their teaching environments. Mr Deng's emphasis on the disconnect between national policy ideals and practical application encapsulates this broader issue: a failure to provide the contextual guidance necessary for effective implementation.

Even among teachers who attempt to integrate digital technology, their approaches tend to reflect a task-oriented mindset, focused on compliance with policy directives rather than pedagogical innovation. As seen in the experiences shared by teachers such as Miss Wang and Mr Deng, DE is frequently perceived as an additional administrative burden rather than an opportunity for educational transformation. This aligns with Schulte's (2019) critique that top-down digital reforms, when overly focused on procedural compliance, can erode professional autonomy and stifle innovation.

Ultimately, the issue lies not merely in teachers' attitudes towards DE—whether positive or negative—but in the absence of coherent strategies and support systems to enable them to bridge the gap between policy and practice. Without targeted interventions addressing this gap, DE risks being reduced to a surface-level initiative, leaving digital reform remain performative (Zhao et al., 2018). This lack of clarity is evident across their shared experiences and reflective narratives, as discussed in Section 7.3, and is further underscored by the observed classroom practices detailed in Chapter 8.

7.4.2 the structural challenges

While teachers' values and beliefs play a critical role in shaping their engagement with DE reform, their agency is also significantly influenced by structural and systemic

conditions. Drawing on the practical-evaluative dimension of teacher agency (Priestley et al., 2015), this section explores how rural teachers make context-sensitive decisions in response to the material and institutional realities of their work. In particular, it highlights the ways in which infrastructural deficiencies, insufficient training, and accountability pressures constrain teachers' ability to implement DE meaningfully. To understand how these challenges influence teacher agency, the concept of digital agency (Passey et al., 2018) is again applied—emphasising how access to digital tools, training, and support structures mediate teachers' confidence, motivation, and opportunities for innovation. The findings show that, in many rural schools, unreliable internet, outdated equipment, limited pedagogical training, and performative accountability regimes create a context where DE is often approached cautiously or reluctantly.

7.4.2.1 The daily infrastructural challenges that hinder DE implementation

A recurring theme across teacher interviews is the systemic challenge, which significantly impacts the implementation of DE in rural schools. These systemic constraints include unreliable internet access, outdated equipment, and insufficient support for digital tools, all of which influence teachers' ability and motivation to innovate and engage effectively with DE.

For many teachers, the integration of DE is constrained not only by confidence in traditional methods as discussed in 7.4.1.1, but also by structural challenges and classroom priorities. Mr Deng, for instance, emphasised the need to focus on classroom discipline in rural settings, which he sees as a higher priority than the use of digital tools:

"*The first thing we need to address is classroom discipline. Some students are very mischievous and don't listen at all, so the educational content remains secondary. Our students are different from those in the cities; we need to enforce strict discipline to improve performance*." (Interview, Mr Deng)

Alongside concerns about discipline, infrastructural limitations—such as intermittent internet access—further reinforce teachers' reliance on traditional methods. Mrs Li, who has taught English and moral education for 12 years, highlighted how unreliable internet connectivity impacts her willingness to incorporate DE:

"*Intermittent internet access is a significant challenge, restricting when and how I can use digital tools. I focus on what's consistent—traditional materials*." (Interview, Mrs Li)

Another prominent issue was unreliable internet infrastructure. For instance, Mrs Li highlighted how intermittent internet access directly affects her ability to incorporate digital tools effectively in her teaching:

"*Intermittent internet access is a significant challenge, restricting when and how I can use digital tools.*" (Interview, Mrs Li)

Similarly, Mr Xu described how the unstable network in classrooms interrupted the flow of lessons and rendered certain resources unusable during class time:

"*The classroom network is usually unstable, so we can't directly use resources from the software. It's frustrating because it interrupts the flow of teaching."* (Interview, Mr Xu)

This technical inconsistency forces teachers to default to traditional methods, as digital tools cannot be reliably integrated into daily teaching. Without dependable internet, even basic tasks such as accessing online resources or participating in digital training become significant hurdles. In interviews, teachers also mentioned feeling overwhelmed by the expectations to integrate digital tools given their poor digital conditions. As Mrs Huang explained:

"*The government tells us we need to use digital tools in our lessons, but the internet connection is unreliable, and we don't have enough devices for all the students. I feel like I'm being asked to do something impossible.*" (Interview, Mrs Huang)

In addition to internet challenges, outdated equipment further limits the effective use of digital tools. Mrs Chen shared how ageing hardware in her school discouraged her from relying on digital tools for art and music lessons:

"*With the tech issues here, I just use what works best for my lessons. Students see art as dispensable, so using digital methods doesn't always feel worth it. Maybe such methods will work in urban schools, as they have more advanced conditions.*" (Interview, Mrs Chen)

This sentiment was echoed by Miss Zheng, who pointed out the frequent malfunctions of older hardware in her classroom:

"*The projector stops working unexpectedly, or the smartboard lags during lessons. It's just easier to use the chalkboard instead*." (Interview, Miss Zheng)

These experiences underscore the disparities between urban and rural schools, where the latter are often left with outdated tools that fail to meet the demands of modern

teaching. This discrepancy not only limits the scope of digital integration but also reinforces the reliance on traditional methods, especially for non-core subjects like art and music, which are often deprioritised in resource allocation.

Physical space constraints further exacerbate the challenges faced by teachers in rural schools. Mr Peng, a physics teacher, described how overcrowded classrooms made it difficult to conduct physical experiments, forcing him to rely on multimedia tools as a substitute:

> "*Only students in the first three rows can really see what's going on, so multimedia sometimes becomes essential.*" (Interview, Mr Peng)

Similarly, Mr Luo highlighted the lack of adequate space to integrate interactive digital tools for music lessons:

> "*Our classroom is so small that setting up any additional digital equipment like speakers or projectors becomes impossible. We make do with what we have, but it limits our options.*" (Interview, Mr Luo)

In such environments, the inability to create interactive and dynamic teaching setups often leads to a focus on rote learning, further diminishing the potential of digital tools to enhance engagement and creativity.

These infrastructural and logistical challenges are compounded by systemic inefficiencies in resource management. Mr Deng expressed frustration with the centralized system for maintaining digital equipment, which often left schools waiting for extended periods to address technical issues:

"*Equipment failures need to be reported to higher authorities via a maintenance form, and we then have to wait for the supplier to handle repairs. While there is a maintenance point set up between several towns with support staff, complex issues require specialized technicians from the province, causing further delays. Additionally, only two free repairs are offered, and further repairs come at a cost, which rural schools simply cannot afford.*" (Interview, Mr Deng)

The bureaucratic nature of resource management leaves rural schools with limited functionality when equipment breaks down, disrupting lesson plans and reducing teachers' confidence in the reliability of DE tools. This was further highlighted by Mrs Wu, who explained how delays in repairs often forced teachers to abandon planned digital activities:

"*We've been waiting for over a month for our projector to be fixed. In the meantime, I've had to adjust my lessons back to using the chalkboard*." (Interview, Mrs Wu)

Teachers in rural schools also face significant challenges in acquiring relevant digital content. Many rely on pre-existing materials rather than creating their own, as noted by Mr Deng:

"*We're not expected to create new digital resources. There's no need to develop anything original if it's already available.*" (Interview, Mr Deng)

Miss Wang shared a similar perspective, often turning to social media platforms for teaching materials:

"*I use Xiaohongshu and Douyin to find pictures and videos for my art classes. It's more convenient than searching through the school's outdated library of materials.*" (Interview, Miss Wang)

While these practices ensure compliance with DE policies, they also highlight missed opportunities for contextualising digital resources to suit the unique needs of rural classrooms. This reliance on external, often less reliable, ready-made resources—discussed further in Section 7.4.4 and observed in nearly all cases in Chapter 9—reflects how teachers respond to systemic challenges. The combination of these factors fosters a cautious and resource-driven approach, where teachers prioritise methods that align with their immediate classroom realities and the constraints of rural school contexts. This cautious stance is often reinforced by limited training and support, as illustrated in the next section, further shaping teachers' perceptions of DE as an external mandate rather than an opportunity for pedagogical innovation.

7.4.2.2 Gaps in teacher training

In addition to resource limitations, the inadequacy of teacher training emerges as another critical barrier, undermining the intended objectives of DE policies. While DE initiatives such as ITAC 2.0 aim to integrate technology into teaching practices, the limited scope and inadequate design of training programmes have constrained teachers' ability to engage with these policies meaningfully. Evidence from teacher interviews underscores how these deficiencies in training have shaped a compliance-oriented, rather than innovative, approach to DE.

One recurring issue was the selective and hierarchical nature of training opportunities. In most cases, only a few individuals—typically the headteacher and a senior staff

member—were directly involved in formal training sessions. The majority of teachers relied on self-study, watching online videos, or seeking guidance from colleagues who had attended the formal sessions. Teacher Mr Xu exemplified the challenges in this regard. Due to his role in academic affairs and the belief that he had higher digital competence than his colleagues, he was selected to attend a municipal-level training session aimed at introducing ITAC 2.0 and the requirements of the ITACS framework. He explained:

> *"I was selected to go with our headteacher to the training session in the city (municipality level). The training was mainly about how to do classroom recording—how to position the camera and meet the technical standards. There wasn't much focus on how digital education could be integrated into our everyday teaching*." (Interview, Mr Xu)

This emphasis on procedural tasks, such as classroom recording, over pedagogical innovation highlights the misalignment between policy goals and training content. Furthermore, Mr Xu found it challenging to translate the skills acquired during training into actionable knowledge for his colleagues:

> "*There were a lot of challenges to deliver the information to our teachers. Provincial departments, municipalities, and counties. They (the trainers) were highly skilled in using technology, and the training venue was fully equipped with resources, which made their demonstrations look effortless. We observed and listened from them. But our school's situation, and the realities faced by our teachers, are very different. It is a big gap.*" (Interview, Mr Xu)

This gap between high-level training and the practical realities of rural schools reflects a structural issue in the dissemination of DE policies. The lack of tailored, contextsensitive training inhibits teachers' ability to integrate digital tools effectively into their practices. This further reinforces the challenges faced by teachers in rural settings, including inadequate infrastructure and varying levels of digital competence. Many teachers echoed these sentiments, pointing to the fragmented and superficial nature of training. Mrs Wu, for instance, expressed frustration with the lack of timely and comprehensive support:

> *"Support is limited and untimely, so we rely mostly on self-study. But because there's little encouragement to innovate, we end up completing the basic requirements instead of exploring new possibilities*." (Interview, Mrs Wu)

Similarly, Mr Tang noted that training sessions often felt procedural rather than pedagogical:

> *"The training is about checking boxes—what to record, how to shoot video. There's little room to explore how technology might actually enhance learning.*" (Interview, Mr Tang)

This focus on compliance over creativity reinforces a culture where teachers perceive DE as an administrative burden rather than a tool for educational transformation. These findings align with Hou et al. (2020), who argue that the performative culture introduced by managerial reforms has reduced teaching to a set of repetitive and standardised tasks. Teachers are compelled to conform to rigid compliance metrics, which marginalises more creative and student-centred pedagogical possibilities. In such

systems, teachers often shape their educational practices according to what the state values most—compliance and quantifiable performance, rather than professional judgment or student need (Zhao, 2014).

Another recurring issue was the reliance on passive and self-directed training formats, which many teachers found ineffective. Mr Peng, for example, described the exhaustion of engaging with lengthy instructional videos:

> *"The videos are long—some an hour, some two—and teachers find it exhausting. We end up letting them play while we get on with other tasks."* (Interview, Mr Peng)

This lack of interactive and practical training opportunities left many teachers feeling detached from the broader educational goals of DE policies. Miss Wang's experience further illustrates this challenge:

> *"We were given a few online resources, but it was up to us to figure it out on our own. I had to record a lesson and upload it as homework, but it wasn't very clear how it related to the actual teaching.*" (Interview, Miss Wang)

The lack of structured and contextually relevant training fosters a sense of professional isolation among teachers, limiting their confidence and aspirations to engage with DE meaningfully. As Mr Deng summarised:

> *"We have too many trainings and won't really study how to implement 'Education Informatics 2.0' properly. All the trainings and tasks are just for ticking boxes; without an assessment, they have no impact."* (Interview, Mr Deng)

This absence of comprehensive training and clear communication of DE's objectives was consistently noted across participants.

> "*We're told to use technology to make teaching more efficient, but there's no real explanation of how it can actually change how we teach. So, most of us just use it to show presentations or access online resources*." (Interview, Mrs Wu)

Even the teachers who have higher levels of digital competence, often find the training is more for task rather than pedagogical development. For example, Mr Feng, despite not attending formal training sessions himself, he became a key figure in his school for supporting the implementation of ITAC 2.0, often assisting colleagues with tasks ranging from understanding digital tools to solving technical issues. He explained:

> "*This term, it falls on me to guide them (teachers in Xing Long Secondary) through the IT 2.0 requirements, which involve analysing students' learning situations to better tailor our teaching approaches, using technology tools for assessments like quizzes or pre-tests, and for resource management, like navigating through a multitude of online resources to find useful material. I also help other teachers with technical tasks like editing PowerPoint presentations to remove watermarks, which can be challenging for them.*" (Interview, Mr Feng)

This example reflects a broader systemic issue: the absence of structured, comprehensive, and equitable training programmes for rural teachers in the context of digital reform. While national reforms advocate for widespread ICT integration, in practice, the institutional support required to enact these changes remains insufficient leaving digitally skilled individuals like Mr Feng to fill the gap informally. His case illustrates how teachers' digital agency is often co-opted to sustain institutional

functionality rather than foster pedagogical innovation. As highlighted in Liu and Onwuegbuzie's (2012) analysis of China's centralised, surveillance-based evaluation system, such reforms place significant pressure on teachers to perform tasks beyond teaching, often without the corresponding training, support, or compensation.

Moreover, the additional mentoring responsibility significantly increases Mr Feng's workload. The intensification of workloads is corroborated by studies showing rural teachers usually face the heaviest teaching schedules (Liu & Liu, 2018; Li, 2016) and are burdened with numerous non-teaching responsibilities, such as digital lesson uploads, online courses, and preparation for external inspections (Zhao, 2014). Mr Feng's case epitomises this dynamic. Despite his agency and digital fluency, he faces excessive demands from both his own teaching duties and informal mentoring, without formal institutional recognition or relief in workload, as discussed later in Chapter 8.

Additionally, the absence of pedagogically focused DE training programmes exacerbates the instrumentalist use of technology, prioritising form over function. As seen in Mr Feng's support work—editing slides and navigating resource platforms—the emphasis remains on technical compliance rather than pedagogical transformation. These institutional expectations also reflect a wider shift towards professionalised managerial hierarchies (Wang, 2013), in which teacher autonomy is diminished through tightly regulated evaluation schemes. Teachers are thereby positioned not as curriculum designers or pedagogical leaders, but as implementers of top-down mandates.

These findings highlight gaps in DE training and exposure among rural teachers. This significantly impacts how teachers perceive and innovatively engage with digital

technology. As evidenced in Section 7.4.4, this training gap has hindered teachers from fully aligning with the values and expectations embedded in national policies. Additionally, the overemphasis on administrative tasks, like lesson recording and technical compliance, rather than pedagogical applications, limits the transformative potential of digital education.

7.4.2.3 Accountability structures shape teachers' strategic responses to DE reform

From the interviews, a key theme emerged regarding teachers' engagement with the implementation of ITAC 2.0 evaluations. Under the top-down framework of political accountability discussed in Section 7.4.1, two distinct types of teacher engagement were identified. One group focused solely on completing tasks as a form of compliance, while the other adopted a more competitive approach, aiming to secure teaching awards and recognition.

The first group represented the majority of participants, who perceived DE compliance as an additional administrative burden. Following directives from municipal education departments, schools required teachers to complete online training sessions as part of their continuous professional development. For many teachers, this was seen as a routine "assignment" rather than an opportunity for professional growth. As Mrs Wu explained:

> "*The district education office issued learning schedules, and all our teachers had to complete the online training. Each person was required to watch at least ten sessions, each lasting between 60 and 90 minutes. Altogether, it was a significant workload on top of our regular teaching duties.*" (Interview, Mrs Wu)

Similarly, Mrs Liu described the process as a task-oriented exercise:

> *"One of our assignments as teachers was to watch ten information technology training courses, take detailed notes, and write reflections on what we learned."* (Interview, Mrs Liu)

Following the training, teachers were required to submit classroom recording videos that demonstrated their use of digital skills aligned with ITACS evaluation standards. This added another layer of accountability. Among the 25 interviewed teachers, 21 reported submitting only one video. Teachers who uploaded more videos were often those who participated in teaching competitions. As Mr Deng shared:

> *"I uploaded twice. The first was part of a school-wide task that everyone had to complete. Later, under the school's instruction, I submitted a second video to represent the school for outstanding course evaluation.*" (Interview, Xing Long)

The outstanding course evaluation, which also included offline demonstrations--assigned to open classes or competitive teaching evaluations--placed significant demands on the participating teachers. These teachers were often the main actors under the spotlight (Dong et al., 2019). To prepare for these evaluations and competitions, they had to navigate numerous stages, including topic selection, lesson planning, material development, rehearsals, intra-school evaluations, and progressing through district, county, and municipal levels to gain recognition. Teachers who did not participate in competitions often played a supportive role, and schools allocated significant resources to the actor teacher'. For instance, to improve the likelihood of success and avoid resource redundancy, districts like H coordinated strategies and

provided targeted guidance. In response, selecting a competition topic was a strategic decision that sought to balance individual strengths, technological application, and competitive potential. As Mrs Huang explained:

> "*The choice of topic is crucial. If it's too common, it's unlikely to stand out during evaluations. The school advised us to avoid conventional subjects*." (Interview, Mrs Huang)

This was further evidenced in Chapter 8 during the post-observation interview with Mrs Huang, where she revealed that the class and grade selected for the competition were not part of her regular teaching schedule. The lesson topic was specifically selected to highlight her digital skills, reflecting the performative nature of these tasks.

Preparing for such competitions demanded significant time and effort, particularly during the "lesson refinement" phase, which many teachers found to be the most labourintensive. Nearly half of the interviewed teachers reported refining their lessons more than three times. Reflecting on this process, Mrs Xu explained:

> *"I tried a flipped classroom model, but designing the in-class activities was a major challenge. Most of the refinement revolved around this issue. This approach is still experimental for many of us. My initial design was almost completely scrapped. The final product was the result of collaboration with the school research team and guidance from our research officer. From the first draft to the final recording, I revised it five or six times over more than a month."* (Interview, Mrs Xu)

Another teacher described how technological integration became a focal point in this process:

"I refined and rehearsed my lesson six times. In the past, technology wasn't a requirement for these competitions, but now it's different. Much of the refinement focused on integrating technology. Teachers who were not assigned classes came to observe my lesson, and I incorporated every digital tool and resource I thought was relevant. Whether it achieved 'deep integration,' I'm not sure—it's still an experiment." (Interview, Mrs Sun)

While these refinements represent meaningful attempts to integrate digital technology into teaching, their overall impact in pedagogy remains limited. As some teachers like Mrs Li shared her experience of technology integration in classroom,

"*I integrate technology as a secondary support to my primary teaching methods. For example, I might use projectors to show visual content or play audio clips that help with pronunciation and listening skills.*" (Interview, Mrs Li)

Teachers like Mrs Zhang highlighted the supplemental nature of technology in teaching is primarily as a tool rather than replace traditional methods:

"*In teaching, I use some simple digital tools like PPT and electronic whiteboards, primarily for presenting teaching materials*." (Interview, Mrs Zhang)

These approaches were also observed in Chapter 8, where PowerPoint presentations remained the most common method for delivering textbook content, and traditional lecture-based instruction dominated most classes. Moreover, while the government encouraged informal activities such as lesson showcases and peer discussions to promote digital education, these occurred infrequently in practice. Instead, teachers often concentrated on achieving competitive success, driven more by accountability

pressures than by intrinsic motivation. Once the competitions concluded, deeper engagement with digital education frequently ceased, underscoring the performative nature of accountability within rural schools.

Even teachers who did not participate in teaching competitions were subject to the same accountability pressures, which often led to performative compliance. As mentioned earlier, the required classroom recordings for ITAC 2.0 evaluations further illustrate the performative nature of these tasks. Teachers were expected to demonstrate their digital skills and teaching methods in edited videos that adhered to assessment standards. However, rural schools faced technical barriers in producing high-quality videos, lacking professional equipment and expertise. All rural teachers interviewed used their personal mobile phones to record lessons, with those less skilled in digital tools relying on colleagues for editing. As Mr Xu explained:

> *"I helped two-thirds of our teachers complete their classroom recordings. I edited their videos and used my own computer since the school's computers are outdated. I'm the only teacher in our school who uses a MacBook*." (Interview, Mr Xu)

Additionally, to meet evaluation criteria, teachers had to provide voiceover explanations of their digital competencies and lesson designs. Mrs Wu recalled: "*Many teachers didn't even know how to record audio, so I had to guide them step by step through the process*." (Interview, Mrs Wu)

In this context, teachers experienced a sense of performative compliance with policy directives rather than meaningful pedagogical engagement. This was illustrated in interviews with teachers like Mr Feng, who described the performative use of digital tools to meet external accountability standards. **Mr Feng** shared his experience: *"We*

are encouraged to use digital tools in every class, but often it's more about showing that we are using technology rather than it actually enhancing the lesson. During inspections or evaluations, we focus on using digital tools because we know that's what the evaluators are looking for." (Interview, Mr Feng)

Similarly, Mrs Wu admitted that digital tools were used more during public classes and competitions than in regular lessons:

> "*Open classes are more about performance than practical teaching. In everyday classes, we rarely have the time or resources to use these methods.*" (Mrs Wu, Interviews)

The focus on accountability has significant cultural effects within rural schools, where the pressure to conform to external evaluations often outweighs the perceived benefits of digital education for classroom teaching. Teachers in rural schools are positioned as both implementers of technology and subjects of governance, expected to adopt new digital tools while adhering to strict performance evaluations. The ITACS, for instance, places a significant emphasis on teachers' ability to use technology in teaching. As will be explored in the following sections, this assessment serves as a significant implementation standard for DE. This focus on compliance often undermines the intended pedagogical benefits of DE, as teachers prioritise meeting external expectations over meaningful technology integration. This issue will be discussed further in Chapter 8.

7.4.3 Teachers' sense of initiative and professional autonomy

Teachers' sense of initiative and professional autonomy in rural education is deeply shaped by the cost-benefit dynamics associated with implementing DE. The decision to integrate DE tools, as well as the degree of autonomy teachers exercise, often hinges on an evaluation of the benefits these tools provide versus the associated costs—whether in time, effort, or resources. These dynamics are further influenced by structural challenges (as discussed in 7.4.2) and teachers' educational values and attitudes (outlined in 7.4.1).

7.4.3.1 Weighing the costs: workload, preparation, and accountability pressures

For many teachers, the high workload associated with performance-oriented DE practices outweighs their perceived benefits. Policies like IT 2.0 require teachers to demonstrate specific digital competencies, pushing them to adopt tools and techniques that may not align with their teaching philosophies or classroom realities. Mrs Chen articulated this challenge:

> "*The assessment criteria require us to demonstrate specific digital skills we've learned, which pushes me to incorporate these tools more regularly. However, it feels like ticking off a checklist sometimes, which can detract from the organic learning process.*" (Interview, Mrs Chen)

This perspective reflects how rigid accountability structures often turn DE into an administrative burden, as noted in 7.4.2 Structural Challenges in Implementing DE. Teachers navigate these expectations by prioritising compliance, which can overshadow pedagogical goals and limit innovation. Mr Sun's statement further

highlights the significant strain associated with preparing for open classes or competition-style lessons:

"*Actually, these 'performance' nature classes are beneficial for both students and teachers. But there's too much preparation involved, and it's very tiring for teachers."* (Interview, Mr Sun)

These examples highlight a recurring theme: the high "costs" of implementing DE, measured in time, energy, and adherence to rigid policies, often overshadow its benefits. These dynamics are further influenced by structural challenges (as discussed in 7.4.2) and teachers' educational values and attitudes (as discussed in 7.4.2.).

7.4.3.2 Navigating autonomy within systemic constraints

Teachers' varied approaches to digital engagement reflect how they navigate systemic limitations and expectations, underscoring the complex enactment of agency in constrained rural contexts. While some teachers relied on ready-made resources due to limited digital competence, such strategies were often framed not as deficiencies but as adaptive responses to local realities. A notable example is Miss Wang, who has less than 5-year teaching experience in a rural primary school with background in advertising design. As part of a digitally fluent generation, she demonstrates a personal and informal mode of digital engagement shaped by her habitual use of social media platforms.

"I almost never leave my phone alone 24/7; I get anxious when my phone runs out of battery. In my life I'll look at social media platforms more, like Xiaohongshu and

Douyin (both are popular Chinese social media platforms). A lot of the pictures I use in my art classes and a lot of the materials I use to teach, I find on Xiaohongshu. Because I personally like to use it, I also use Weibo, and occasionally I search for good teaching videos on Douyin." (Interview, Miss Wang).

Her explanation points to a model of digital participation centred around convenience, familiarity, and content consumption rather than content creation or critical engagement, "*Our school also has a smart education platform… But I think I am not used to it because I prefer Xiaohongshu and Douyin, which are more convenient and faster".*

(Interview, Miss Wang).

This aligns with what Jenkins et al (2016) describe as a consumption-oriented form of participatory culture, where users engage by curating and adapting pre-existing materials, often without contributing original content or shaping discourse. However, as Sharpe, Beetham, and de Freitas (2010) argue, simply having access to technology does not equate to meaningful digital agency. Miss Wang's preference for informal platforms over the official "smart education platform" reflects not only personal choice but also a practical response to the constraints of her teaching environment. These include lack of formal training, limited institutional support, and the emotional burden of teaching outside her subject expertise. As she shared,

"*I was really in tears, really catching the duck on the shelf kind of feeling. Because I was originally studying art, my own academic knowledge was not good, but I had to teach whatever subject the school needed. It had to let me teach language, so I couldn't just teach art. Everyone was working multiple jobs, and I had no way to*

push. I was in the clouds, I had no idea how to teach, I had to spend a lot of time every day studying on my own, learning and then teaching. The first two years were anxietyridden, and I cried every day. The children and parents were not co-operating, the leaders had to put pressure on me, and I didn't know how to teach the classes myself, and there was no experienced teacher to guide me, so I had to figure it out on my own while teaching and crying, and I really felt miserable, and then I slowly got better." (Interview, Miss Wang)

To overcome these challenges, Miss Wang employed innovative strategies, including purchasing online courses and joining paid social groups that provided digital educational resources (DERs) including lesson materials, plans and instructions. She explained:

"For example, if I take a Chinese literature and language, as I usually have a heavy workload as well, I will look for materials in a paid social group. 5 RMB for a semester. There are people in there who will share lesson materials, lesson plans, including review questions. All the materials I need to teach language can be found in this group, which saves me a lot of time looking for materials myself. One group is for one grade, one grade for two semesters. It was recommended to me by another teacher. After I find a suitable lesson plan, I can modify it according to my own needs and use it in class the next day. In some cases, I can also use it directly without modification." (Interview, Miss Wang).

In Miss Wang's case, her engagement demonstrates adaptability and initiative, yet also reveals the limitations imposed by broader systemic inequities. The kind of digital participation she exemplifies is shaped by necessity rather than opportunity—a coping

strategy within a constrained ecology. This pragmatic adaptation of DERs among teachers like Miss He and Mrs Liu highlights a common trend of relying on readily available resources due to insufficient digital competence. Despite being part of a digitally native generation, these teachers admit their digital skills do not meet the demands of their teaching roles. Miss He, for instance, explained:

> "*I often borrow others' presentations or download paid resources from online." (Interview*, Miss He)

Similarly, Mrs Liu echoed this sentiment:

> "*Most of the time I don't create my own digital content but adapt or download readymade resources from the internet.*" (Interview, Mrs Liu)

This reliance on general Internet sources can be also found in later cases in **Chapter 8,** demonstrating a trend towards a consumption-oriented approach to digital engagement. Compared to more experienced teachers (as discussed in Section 7.4.1.1), who often prioritize traditional teaching methods and rely on ready-made materials without adaptation, teachers like Miss Wang, Miss He, and Mrs Liu displayed a greater willingness to engage with digital tools and acknowledge the potential of digital applications in addressing their daily teaching challenges. However, their limited digital competence often steered them toward passive adaptation or consumption of familiar resources. This approach sometimes resulted in the use of lower-quality materials, as Mr Zhao critiqued:

> "*I feel that for most our teachers, it is not customary to open these (professional) platforms to find lesson resources, but rather Baidu (a search engine similar to*

Google) or ready-made downloads online. However, the information on Baidu is mixed and mostly adverts." (Interview, Mr Zhao)

In contrast, a subset of teachers, such as Mr Xu, Mr Zhao and Mr Feng with high levels of digital competence and confidence, demonstrated how they overcame the inherent limitations of accessing high-quality digital educational resources in rural settings. For instance, Mr Xu demonstrated a more strategic approach to digital engagement: "*When preparing for the lesson, I will see if I need to use technology to realise a particular point or process in the classroom. If the means used can better achieve the teaching goal, then I will choose to use it. I usually find teaching materials on a specific website called 'Xueke Wang' (学科网), a professional educational resource platform. I will modify it if it's not completely suitable for our students*" (Interview,

Mr Xu)

However, in later interview with Mr Xu in 8.2.2, he expressed how the access restrictions on these platforms prevent rural teachers from obtaining these 'high quality' DERs. In such context, Mr Xu's approach goes beyond simply accessing high quality resources. He also demonstrated a dynamic engagement by tailoring resources to his specific classroom needs:

"If I find a resource that fits my teaching goal, I may adapt it. For instance, a video or presentation may need to be edited to emphasize the concepts I want my students to understand. This way, the technology supports my teaching rather than dictating it." (Interview, Mr Xu)

His practice illustrates a pragmatic agency that balances efficiency with customization. A distinguishing feature of Mr Xu's approach was his alignment of digital engagement with specific teaching objectives. While experienced teachers like Mrs Zhang, presented in 7.4.1.1, often dismiss digital tools as unnecessary for certain subjects (e.g., mathematics), Mr Xu's perspective is rooted in a deliberate evaluation of whether technology adds value to the students' learning process:

> "*I think about what my students need to understand first. If a digital tool can make that clearer or more engaging, I'll use it. If not, I'll stick to what works best without it.*" (Interview, Mr Xu)

Mr Xu's practice demonstrates a willingness to innovate when the pedagogical benefits are clear, reflecting a forward-thinking approach to digital engagement. This pragmatic perspective contrasts with the cautionary attitudes described in 7.4.1.1, where digital tools were often viewed as supplementary or even redundant. Similarly, Mr Zhao highlighted his resourcefulness in accessing and utilising digital materials:

> "*I rarely produce resources myself, as I can't achieve the level of making animations. But I don't need to pay for resources—I have various ways to access free ones, which are enough to cover my teaching needs. I studied computer science, so simple editing is not a problem for me.*" (Interview, Mr Zhao)

Mr Zhao's background in computer science enables him to make informed decisions about integrating digital resources, allowing him to bypass low-quality options and focus on materials that align with his teaching needs. His critical perspective on the "mixed bag" of online content earlier above, underscores the importance of digital literacy in navigating the vast array of resources available.

Mr Feng highlighted how his advanced digital skills empower him to overcome resource constraints and access high-quality materials, even those that are typically behind paywalls:

> *"With my digital skills, I have ways to access high-quality digital resources that other teachers in our school cannot. Even for paid online resources, I can find ways to obtain them for free."* (Interview, Mr Feng)

These examples highlight the variability in digital engagement among teachers. While some, like Miss Wang, Miss He, and Mrs Liu, adopt a more passive approach due to limited competence, others, such as Mr Zhao and Mr Feng, leverage their digital expertise to critically evaluate and adapt resources. The practices of Mr Zhao and Mr Feng will be examined further in Chapter 8, illustrating the potential for technology to enhance teaching when paired with strong digital competence and sound professional judgement.

7.4.3.3 Classroom dynamics in shaping agency

Classroom dynamics play a pivotal role in shaping teachers' sense of initiative and autonomy when integrating digital tools. Teachers consistently reported that student engagement directly influences their motivation t to experiment with digital methods. As Mr Deng explained:

> "*The seriousness of the students is the biggest factor affecting my teaching. If students are sleeping or chatting during class, then I have little motivation to use additional tools*." (Interview, Mr Deng)

This observation resonates with my findings in Chapter 8, where I noted instances of student disengagement—such as sleeping during lessons—which highlight the reciprocal relationship between student attentiveness and teachers' digital pedagogical decisions. This aligns with Yang and Yang's (2019) findings that rural teachers' willingness to adopt new technologies was often undermined by their perception that such tools had limited impact on students' academic outcomes or attentiveness, particularly when student motivation was low. However, teachers tended to attribute this disengagement to students' lack of motivation rather than reflecting on their own pedagogical strategies might impact student engagement. Similarly, Miss He noting:

> "*Now it feels like often it's the teachers trying hard, but it's difficult to motivate the students, so teachers try to engage their interest with multimedia, but ultimately the students' own initiative is what matters*." (Interview, Miss He)

This echoes Wu et al. (2022), who suggest that while digital tools offer potential for innovation, without addressing the deeper pedagogical beliefs and classroom relationships, the integration often becomes superficial. The tendency to locate responsibility in student dispositions rather than teaching design may reflect a broader structural tension in rural schools, where heavy workloads, limited training, and exam pressures constrain teachers' ability to reflect and adapt pedagogically. In contrast, Mr Feng observed a more positive response to digital tools, particularly among rural students who have limited access to computers at home:

> "*The students love this because it feels like a game to them. Even those not selected participate eagerly. I've found that rural students are especially eager for computer interactions, as they don't have as many opportunities to use computers as city kids do*." (Interview, Mr Feng)

Technology at here not only as a tool for enhancing student engagement, but also through Mr Feng's approach to fit his students and the existing conditions, it functioned as an aspirational resource, broadens exposure, and fosters positive classroom dynamics. This approach also observed in his classroom practice as showing in Section 8.2.3.

Taken together, these accounts highlight the dual role of classroom dynamics as both a catalyst and a barrier to teachers' digital engagement. When students are enthusiastic and responsive, it reinforces teachers' efforts and fosters creativity. Conversely, a lack of interest or participation can discourage teachers from investing time and energy in digital integration. Despite this interplay, many teachers tend to attribute classroom dynamics solely to student behaviour, overlooking the potential for reflection on their own pedagogical practices. Thus, opportunities for professional growth through reflective practice are often missed (Li et al., 2019), limiting the transformative potential of digital tools in rural classrooms.

7.4.3.4 Negotiating reality and policy

Teachers consistently navigate the challenges of balancing curriculum and policy expectations against the socio-economic realities of rural education. Such realities necessitate a pragmatic approach, as teachers adapt their methods to bridge the gap between the aspirational goals of policy and the practical needs of their students. Mr Xu highlighted how his students often lack the guidance and resources available to their urban counterparts:

"*Urban parents often have higher educational backgrounds and spend more time with their children, unlike in rural areas where most parents work away from home all year round, leaving grandparents in charge.*" (Interview, Mr Xu)

With this view, Mr Xu believe absence of parental involvement creates significant educational and social gaps, leaving these rural students without the foundational skills or support necessary to engage fully in their education. These circumstances compel teachers to adjust their methods, often prioritising foundational skills or exam preparation over more interactive or ambitious curriculum goals. As he further shared: "*So, it's difficult to ask our students to learn like the children in the city. It's more important for them to learn basic knowledge and skills, and good enough if a few of them can get into high school. We cannot expect too much from them.*" (Interview, Mr Xu)

While national policies draw up a vision of education--the development of wellrounded citizens who are prepared for internalisation--and many regulations and assessment criteria are set for it, teachers have their own approach to fit the realities. As Mr Sun noted:

"*Every teacher still has a lot of freedom. Although the goals are set (by the national curriculum), no one is constantly watching, and ultimately, each teacher completes them within what they believe is achievable.*" (Interview, Mr Sun)

Similarly, teachers like Mrs Gao emphasized the practical needs to adjust their teaching plans:

"*Yes, even if it's a little off from the (national curricula) goals, it's not a big problem. For example, with Chinese literature and language classes, whether I finish a particular lesson completely doesn't really affect me much. I can choose what to teach and what not to. Totally depends on the realities of the moment, including the level of student understanding and the time constraints.We usually select key points, especially exam points to teach, when we are running out of time to complete the entire curriculum schedule* ." (Interview, Mrs Gao)

Teachers adapted not out of preference but out of necessity, ensuring that students can meet essential academic milestones despite systemic constrains. Such adaptations were seen by teachers as a way of personalising their teaching. As Mrs Fang explained: "*I believe that every teacher has their own teaching methods and will adapt it to their students needs. Teaching methods can reflect a teacher's personal style*." (Interview, Mrs Fang)

This personalisation of teaching methods were used by teachers to address the specific challenges faced by their students, such as a lack of engagement or foundational knowledge. We will gain a more specific picture of how these methods are actually carried out in Chapter 8 with classroom observations.

Teachers' autonomy is also a response to the impracticality of some policy mandates in rural contexts. Mr Xu reflected on the difficulties of implementing collaborative learning, a method encouraged by the national curriculum,

"*For example, the curriculum standards advocate group work as a way to motivate students well… But… if our students are allowed to discuss in small groups… the*

reality is that some students will not participate and may get into trouble, which may result in the class not being able to go on." (Interview, Mr Xu)

Despite these challenges, Mr Xu strives to incorporate elements of collaborative learning by encouraging student participation and creating an environment where making mistakes is acceptable. However, as he explained, achieving the idealised goals of the curriculum often requires significant compromises:

"*I try to let the students speak as much as possible, slowly moving closer [to curriculum expectations]. But sometimes students may have inappropriate speech. i have had an experience where i felt offended. Even though I encourage them to speak, I feel uncomfortable if students challenge me in public. So it is up to the teacher to weigh the pros and cons whether to use this new teaching method.*" (Interview, Mr Xu)

This pragmatic balancing act is echoed by other teachers, such as Miss Li, who admitted to compromising her educational philosophy to meet the demands of teaching tasks. Similarly, Mr Tang emphasised the necessity of prioritising students' academic performance and future opportunities over strict adherence to curriculum standards.

The socio-economic realities of rural education also influence the kinds of teaching methods that are most effective. Mr Feng noted that rote learning often becomes a fallback strategy:

"*Now, I resort to rote learning because no matter how I explain it, they don't understand, so they must memorise… Rural children, whose parents often work away*

from home and leave them with smartphones during vacations under minimal supervision, miss out on enriching experiences." (Interview, Mr Feng)

This reliance on memorization reflects the limited opportunities for interactive and experiential learning in rural classrooms. Teachers like Mr Peng pointed out that the extensive curriculum and time constraints further restrict the use of innovative teaching methods:

"*The curriculum is very extensive, nearly every point has an associated experiment. Doing one experiment can take up an entire class period… Technology facilitates students remembering knowledge points but doesn't allow them to engage in actual operations*." (Interview, Mr Peng)

Despite these constraints, teachers remain committed to their students' success. Their ability to adapt the curriculum and navigate systemic challenges demonstrates their agency and dedication to meeting their students' needs. However, this agency is exercised within the limits imposed by socio-economic disparities, resource shortages, and the pressure to meet exam requirements.

7.5 Summary

This chapter examined the multi-layered factors influencing teacher agency in the implementation of digital education in rural Chinese schools, drawing on the ecological approach to agency (Priestley et al., 2015). The findings shed light on how policies, institutional structures, socio-cultural contexts, and teachers' individual capacities intersected to shape their experiences and actions. The analysis revealed a persistent

tension between the ambitious aspirations of digital education reforms and the everyday realities encountered by teachers in their classrooms.

The analysis of Chinese digital education policies, using Bacchi's (2009) WPR approach, provided valuable insights into the narratives and power dynamics underpinning "Education Informatisation." Policies frequently framed digital education as a solution to bridge the persistent divide between urban and rural schools, focusing on improving digital infrastructure and promoting the "deep integration" of technology into teaching practices. However, this framing often positioned rural schools and teachers as inherently deficient, drawing attention to a lack of infrastructure and digital competency while overlooking deeper socio-cultural and pedagogical challenges.

The policy discourse largely assumed that technological progress was both necessary and beneficial, prioritising access to technology over more holistic educational goals. This approach tended to neglect important aspects of education, such as critical thinking, creativity, and social-emotional development. The focus on measurable outcomes, like technological infrastructure and teacher competency, also encouraged a compliancedriven mindset among local governments and schools, as these were the easiest elements to quantify. These discussions lacked reflection on how digital education might support diverse, culturally relevant teaching practices that preserve the unique richness of rural Chinese communities.

A further tension was evident within the policies themselves. On the one hand, teachers were portrayed as key agents of digital reform, tasked with leading rural education's transformation. On the other hand, they were represented as lacking the skills and

judgment needed to use technology effectively, requiring extensive retraining and supervision. This dual narrative often constrained teachers' autonomy, as initiatives such as ITAC 2.0 and the ITACS framework placed significant emphasis on standardised assessments and external oversight. For many teachers, this undermined their ability to exercise professional judgment and integrate technology in ways that best suited their students' needs.

These tensions were reflected in the ways schools and individual teachers responded to policy expectations at the local level. While policies promoted interactive and technology-enhanced learning, the reality in rural schools was shaped by resource shortages, socio-economic inequalities, and the relentless pressures of exam-focused education. Teachers frequently adapted policies to suit their immediate circumstances, balancing performative compliance with the practical demands of their classrooms. The lack of clear guidance on how to integrate digital tools into everyday teaching further exacerbated these challenges, leaving teachers to navigate a path that frequently prioritised rote learning and exam preparation over innovation.

The socio-economic realities of rural education significantly influenced these adaptations. Teachers repeatedly highlighted how limited parental support and scarce resources placed rural students at a disadvantage compared to their urban peers. For many teachers, this meant focusing on bridging these gaps through pragmatic approaches rather than fully embracing the aspirational goals set out in policy documents. Their agency did not operate in isolation but emerged through continual negotiation between structural constraints and their professional commitment to students.

The findings also revealed how policy narratives constructed teachers as ‘digital agents’, tasked with embodying the state’s vision for educational reform. However, as Priestley et al. (2015) argued, teacher agency is shaped by the interplay between personal capacities and broader structural and cultural conditions. For rural Chinese teachers, this meant navigating a complex mix of compliance, resistance, and adaptation, as they sought to reconcile policy expectations with the realities of their schools.

These insights provide the foundation for Chapter 8, which will explore how these dynamics unfolded in practice at Yang Guang Primary School and Xing Long Secondary School. By examining the structures and cultures of these schools, Chapter 8 will delve deeper into how external factors shaped teachers’ pedagogical practices and the extent to which they were able to exercise agency in implementing digital education reforms.

8. Implementing Digital Education in Classrooms: Pedagogical Practices and Institutional Contexts in Two Rural Schools

8.1 Introduction

To explore how DE reform is implemented in everyday classroom practices in rural schools, this chapter presents findings from fieldwork in Xing Long Secondary School and Yang Guang Primary School in LY municipality, Sichuan province. Drawing on the sampling strategy outlined in Section 6.2, seven teachers were selected as cases studies for detailed classroom observations and post-lesson interviews. These cases introduced in Section 6.4.2.2 and informed by earlier interviews presented in Chapter 7, offer an in-depth lens through which to examine the lived realities of digital reform in the rural context.

The analysis in this chapter is guided by the integrated conceptual framework developed in Chapter 6, which combines Priestley et al.'s (2015) ecological model of teacher agency with Passey et al.'s (2018) concept of digital agency. Following Priestley et al. (2015), ‘ecology’ refers to the layered and interacting influences that shape teachers’ work—school structures and cultures, policy demands, material resources, and professional histories. The school’s ecology is thus understood not as a fixed context, but as a dynamic environment that both enables and constrains teacher agency.

As such, the findings are presented in the following order: first, the school-level ecology—its profile, structure, and culture—and then an analysis of how individual teachers navigate these conditions in their daily practice.

To provide an analytical overview of classroom patterns before presenting individual teacher cases, Table 8.1 summarises the dominant teaching methods and types of technology interaction observed across all seven classrooms. These patterns were based on a matrix coding query conducted in NVivo and analysed using Bernstein's (2000) theory of classification and framing, as detailed in Section 6.6.3. The findings reveal a predominant use of *stronger classification (C+)*, where technology was mainly used for presentations (14 codes) and lecture-based instruction (14 codes). This approach reflects a structured and controlled use of technology, where teachers lead the class, maintaining clear boundaries between digital and traditional teaching methods. Similarly, a *strong framing (F+)* shown in the findings, where teachers maintain control over the use of digital tools. This teacher-directed approach is evident in the high frequency of lectures (10 codes) and presentations (10 codes), where digital tools are used in a structured manner to deliver content.

Table 8.1 Summary of Pedagogical Approaches and Digital Technology Use Across Observed Classrooms (Matrix Coding Query from NVivo)

	A:observation: Teaching Methods= Lecture	B:observation: Teaching Methods= Collaborative Learning	C:observation : Teaching Methods= Individual work	D:observation: Teaching Methods= Group work	E:observation: Technology Interaction= Teacher use for presentation	F:observation: Technology Interaction= Teacher use for assessments	G:observation: Technology Interaction= Teacher use for feedback	H:observation: Technology Interaction= Teacher use for learning activity	I:observation: Technology Interaction= Students' use for learning

1: C+	**14**	**1**	**2**	**0**	**14**	**0**	**0**	**1**	**2**
2: C-	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**2**	**1**
3: F+	**10**	**1**	**1**	**0**	**10**	**0**	**0**	**1**	**1**
4: F-	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**2**	**1**

This overarching pattern is consistent with previous research on technology use in Chinese rural schools, where digital tools often serve to reinforce, rather than transform, teacher-centred pedagogical routines (e.g., Li et al., 2018; Wang et al., 2022). Technology integration frequently took the form of Power Point (PPT) slides or multimedia courseware used to present teaching contents, with limited student dialogue or independent learning. While the patterns presented in Table 8.1 provide a surfacelevel view of how digital tools are enacted in the classroom, these should be understood not as individua choices in isolation but as situated responses to the structural, material, cultural, and relational conditions in which teachers work (Biesta et al., 2015). Across both school sites, teachers navigated digital reform through varied forms of agency, ranging from strategic adaptation and performative compliance to constrained experimentation. This reflects prior research showing how teacher agency is embedded in context (Priestley et al., 2012), and how performative pressures and technostress often limit meaningful digital integration in rural settings (Wu et al., 2022; Wang et al., 2022). At the same time, moments of creativity and adaptation highlight the capacity of teachers to exercise judgment and agency, even within restrictive

systems. The analysis that follows unpacks how rural teachers respond to reform demands and their negotiations between policy pressures, local ecologies, and their beliefs.

8.2 The Implementation of Digital Education in the Ecology of Xing Long Secondary School

8.2.1 Profile of Xing Long Secondary School

Xing Long Secondary School is situated in a remote mountainous township in the LY municipality within Sichuan province. This town's economy is primarily agricultural and its location—approximately 30 kilometres from the county centre—contributes to its relative isolation and slower socio-economic development. These broader conditions form part of the school's ecological context, influencing the institutional resources, policy environment, and teacher experiences explored throughout this chapter.

The school's physical and institutional infrastructure has evolved significantly over time through multiple phases of renovation and expansion. Initially established with modest funding from the township and county governments, the school received its first major investment occurred in 2000, when the government funded new classroom buildings and a paved sports ground. A subsequent round of upgrades in 2004 was partially financed by the local government, requiring the school to bear the remaining costs—a process that took two years due to financial constraints. In 2006, the construction of a student dormitory was undertaking with county-level support.

The most transformative phase came in 2009, driven by central government investment under a national programme to renovate primary and secondary schools in western China. This funding, supplemented by county and township-level education authorities, enabled the school to expand its facilities to include physics and chemistry laboratories, a music room, library, art studio, reading room, dance studio, biochemical lab, and basketball court. These infrastructural developments reflect broader national reforms aimed at promoting educational equity but must be interpreted within the layered ecological realities that shape how such facilities are actually used.

By 2017, the school served 290 boarding students and employed 44 staff members. All teachers held at least a specialist degree, and many had received formal accolades—such as county-level commendations, provincial-level recognition, and awards for excellence in teaching ethics. These awards, detailed in the school's public profile and noted on the local education bureau website, reflect the school's alignment with statedefined standards of educational excellence. Within the ecology of Xing Long, such recognition not only enhances professional status but also incentivises performative alignment with top-down reform measures, as discussed later in this chapter.

Despite these achievements, structural limitations persist. Although the school now possesses 15 classrooms with electronic whiteboards and has installed 34 CCTV cameras, observed use of these resources remains limited. During fieldwork, I noted that many specialised rooms—such as laboratories and computer rooms—were locked and underutilised. Teachers reported limited use of the school's internet due to slow connection speeds, revealing a gap between policy-driven infrastructure provision and

the daily realities of implementation. These structural patterns are embedded in the broader ecological conditions that shape both the school's internal operations and its external constraints. The teachers' dormitories, for example, are adjacent to the classroom building but in visibly poor condition—highlighting an imbalance between infrastructural modernisation and teacher wellbeing.

A significant proportion of the student population consists of "left-behind children" whose parents work in cities and are cared for by grandparents. This demographic reality, explored in Chapter 2, intensifies the school's social responsibilities. As a boarding institution, Xing Long bears a greater pastoral burden than non-residential schools. This socio-cultural ecology of care intersects with the professional roles of teachers, who are expected to support students' academic, emotional, and social development. More broadly, Xing Long Secondary School has seen a decline in academic performance. Over the past decade, fewer than 40% of students have progressed to high school—a pattern consistent with rural trends across China. As discussed in Chapter 2, such low transition rates are symptomatic of the structural inequities that continue to disadvantage rural schools, regardless of technological or infrastructural improvements.

The school also faces an uncertain future. In 2019, its township was administratively merged with a neighbouring one, reflecting broader national strategies of urbanisation and rural consolidation. Teachers expressed growing concern over a potential school merger that would see Xing Long's functions absorbed by another secondary school in the region. Similar to cases examined in the literature (Ha et al., 2016; Luo et al., 2009), such consolidation threatens local identity, community cohesion, and job stability for

staff.

These contextual realities underscore the importance of analysing the school as an ecological system (Priestley et al., 2015)—in which historical investments, demographic shifts, political decisions, and material constraints intersect to shape how teachers experience and respond to educational reforms such as digital education. The structural and cultural patterns introduced here will be revisited in the next section and subsequent teacher case studies, which examine how these ecological conditions mediate teacher agency in the day-to-day realities of classroom practice.

8.2.2 The Structure and culture of Xing Long Secondary School

Fieldwork at Xing Long Secondary School revealed that its institutional ecology is shaped by the socio-economic conditions of the surrounding rural community and a layered governance structure. Structurally, Xing Long is directly accountable to the county educational office, which functions under the LY Municipal Education Bureau. As outlined in Chapter 2, this top-down structure mirrors the broader educational governance system in Sichuan, from the Ministry of Education (MoE) to the Department of Education of Sichuan Province and local county-level education authorities, characterised by decentralised execution but centralised accountability. While local authorities are responsible for day-to-day support, strategic planning and resource allocation remain tightly aligned with national objectives. Although formally equipped with laboratories, computer rooms, and modern classrooms, the school faces logistical and bureaucratic obstacles in maintaining and utilising these facilities. As the headteacher commented,

"*We have limited support from government and funding. The school resources are limited and equipment frequently failures, it's challenging to consistently implement digital education*." (Interview, The head of Xing Long Secondary)

The lack of localised technical support means that when equipment malfunctions, schools must navigate a time-consuming reporting and approval process involving multiple bureaucratic levels. This procedural delay often places an additional burden on teachers. In Xing Long, this additional work was assigned to a digitally competent teacher:

"*Whenever something goes wrong with the equipment—like the projector not working or the smart board freezing—everyone comes to me first," Mr Feng explained. "I've just picked things up over time because no one else really knows how to fix them. It's not officially part of my job, but if I don't step in, the class gets delayed or cancelled. We can't afford to wait for someone from outside to come every time there's a glitch*". (Interview, Mr Feng)

Teachers frequently take on additional technical and administrative responsibilities due to the absence of dedicated support staff—highlighting a resource-constrained yet hierarchically rigid system.

The school operates within a highly centralised administrative framework, where the headteacher holds significant authority over financial decisions, resource allocation, and policy implementation. As Mrs Wu put it: "*When we need to purchase something for teaching, we must seek approval from our boss (the headteacher). If he agrees, it goes through*". Despite this rigidity, government-aligned policy tasks—particularly

those related to DE reform—receive preferential treatment. Mr Xu, who was designated to lead the school's EI 2.0 project, recalled that funds were readily allocated when external accountability was involved:

"*Normally it is difficult and limited to apply for funding. However, in order to complete the assessment-related tasks of the Educational Informatisation 2.0 policy, the headteacher was particularly decisive in approving the funding. Because the teachers had to make classroom teaching recordings and upload them, we could record the videos on our mobile phones, but the audio was very poor. I explained to the headteacher that it was difficult to hear the teachers' voices and that this would affect the performance of the classroom recordings. Our leader immediately approved the expenses, and I was able to purchase professional radio equipment to help all the teachers in the school to complete the task of classroom teaching recording*s". (Interview, Mr Xu)

While these purchases were made to meet policy compliance, they had little impact on the quality of everyday teaching, as none of the teachers at Xing Long Secondary School reported using this equipment to address pedagogical needs. This prioritisation of performative compliance over substantial educational improvements reveals a broader trend where schools in rural China often focus on fulfilling externally mandated tasks rather than addressing the immediate needs of their teaching staff. These tendencies reflect broader critiques of performativity in Chinese education policy (Wu, 2016; Ball et al., 2012). These structural challenges are further compounded by environmental conditions. As Mrs Fang highlighted,

"*Technical support and maintenance are problematic... in our rural environment, there are lots of mosquitoes and flies in summer, which often fill the screens and*

greatly impact the operation of devices. So sometimes under these conditions, we choose not to use these electronic devices." (Interview, Mrs Fang)

This environmental barrier, combined with the lack of immediate technical support, underscores the structural and logistical complexities that rural teachers face, which further discourages teachers from fully integrating digital resources into their teaching.

As with Yang Guang Primary School, a substantial proportion of students at Xing Long are "left-behind children"—those whose parents have migrated to urban areas for work, leaving them in the care of grandparents. This demographic pattern creates a significant layer of emotional and academic vulnerability, amplifying the pastoral and instructional responsibilities placed on teachers. Mr Xu described the implications succinctly: "*urban parents often have higher educational backgrounds and spend more time with their children, unlike in rural areas where most parents work away from home all year round, leaving grandparents in charge*". (Interview, Mr Xuu)

This phenomenon, commonly referred to as the "left-behind children" issue in China, has been widely documented (Yiu & Yun, 2017; Bai et al., 2017; Ye & Wang, 2024), showing that prolonged parental absence can significantly hinder children's academic and social development. Teachers at Xing Long thus work under considerable pressure to bridge these social gaps while also meeting top-down performance metrics. As Mrs Fang noted, "*children struggle academically and socially due to the combined effect of their socio-economic circumstances and inadequate familial guidance*". This dual burden intensifies the emotional labour of teaching and shapes teachers' pedagogical and professional choices.

The living conditions of teachers at Xing Long further illustrate the complexity of their working environment. Teachers typically remained on campus during the week, leaving on Fridays after classes ended. If they were not scheduled for weekend duties supervising student housing, they would head back to their homes in the county town. On Mondays, they undertook the early morning return journey, navigating winding, narrow, and often treacherous mountain roads. One of these teachers, Mrs Wu, also served as a key informant and participant in my fieldwork. I joined Mrs Wu on her weekly commute, experiencing firsthand the length and difficulty of the journey. Her car wound through tight curves and steep inclines for nearly an hour, moving from the wide streets and bustling atmosphere of the county town to the remote township where Xing Long Secondary School is located.

The most striking contrast was in the atmosphere I experienced along the way. The county town buzzed with energy—busy streets, bustling markets, and a sense of growth and prosperity. In stark contrast, the small town where Xing Long Secondary School is located felt slow-paced, almost desolate, with a quiet, subdued rhythm. Life moved leisurely, and the streets were largely empty, with few signs of activity. This shift from the vibrant, bustling environment of the county to the almost deserted and languid town underscored the profound differences in everyday life between these two worlds.It was a journey not only through physical space, but also through contrasting social atmospheres—reflecting the broader challenges faced by teachers working in such remote areas.

The broader community's socio-economic conditions have further shaped the culture at Xing Long Secondary School, where teachers are often expected to take on responsibilities that extend beyond education into social and welfare roles. As Mr Xu explained, teachers are frequently enlisted to support broader state mandates such as poverty alleviation campaigns:

> "*They think teachers can be used, and should be assigned to our teachers to do poverty alleviation (work), starting from 2017… For example, if the children of poor households are in school, it seems that it has something to do with us at this time*". (Interview, Mr Xu)

This reflects the blurred lines between teaching and social governance, where rural educators are expected to act as agents of local policy implementation. This aligns with Zhao's (2014) study, which shows the multiple roles teachers in China have to play under subtle forms of state control. While framed as professional responsibility, these expectations place significant pressure on teachers and complicate their work.

A prominent structural limitation at Xing Long Secondary School concerns the accessibility and usability of digital educational resources—a challenge raised by several teachers who struggle to access quality materials through platforms intended to support national and local digital education initiatives. Mr Xu described the barriers encountered with the National Digital Educational Resources Platform, which is theoretically designed to provide centralised, high-quality educational resources. However, in practice, the access restrictions on these platforms prevent rural teachers from obtaining crucial content, as Mr Xu explained:

"*There are some platforms at the national level and some platforms at the local level that have some (digital education) resources, but there are limitations in downloading the resources there. For example, I once wanted to download a microlesson video from a Beijing teacher, but I needed an account in Beijing, which is a geographical restriction. I'm not a Beijing teacher, so I couldn't download it.*" (Interview, Mr Xu)

Despite having modern facilities, including laboratories and computer rooms, these spaces are underused due to logistical constraints and curricular pressures. During my fieldwork, I observed that although the school is equipped with laboratory classrooms, computer classrooms, and what looks like an activity room on the top floor of the main building, these rooms were locked, and through the windows, I could see that they were covered in dust. Interviews with staff indicated that these spaces were rarely used to support routine teaching practices. Mr Peng explained:

"Our rural kids rarely get real hands-on opportunities, even though there are many experiments in the textbooks and we have a modern laboratory. I teach four levels of physics classes a week, including one tutoring session, which means three regular classes per class per week, for 16-17 weeks per semester. But the curriculum is very extensive, nearly every point has an associated experiment. Doing one experiment can take up an entire class period. If students were to conduct experiments, there wouldn't be time to discuss the theory and concepts outside of the experiments. ...I don't have enough time to let everyone conduct experiments and then supervise and guide them. And with forty to fifty people's experiment equipment, even if two people share one set, that's still about twenty sets to prepare. Who does the preparation?

Who cleans up the equipment after the experiment? Everyone has such heavy tasks; who has the time for that?" (Interview, Mr Peng)

The dominant exam-oriented culture further shapes pedagogical choices. The emphasis on high-stakes exams, particularly the high school entrance examination (Zhongkao/中考) -- as outlined in Chapter 2, is a major milestone that influences teaching strategies. As Mrs Wu noted,

"*There is a strong emphasis on academic success. The school emphasizes balanced infrastructure to reduce the quality gap in education. Modern facilities help students understand the content better. However, 80% of teaching quality is judged by student performance.*" (Interview, Mrs Wu)

This pressure leads to conservative, content-heavy instruction, as noted by Mr Han, who remarked, "*Traditional methods just get us through exams, covering the necessary content for a result. But we must first deal with exams*". Additionally, the structure of the exam places significant emphasis on subjects like ideological and moral education, which, as Mrs Xiao noted, constitutes a substantial part of the Zhongkao score:

"*In rural education, particularly in my field, the emphasis is on forming a healthy mindset. Ideological and moral education counts for 90 out of 750 points in the entrance exams, which is significant. We aim to instill in students the right moral compass and political perspectives*." (Interview, Mrs Xiao)

This focus further reflects the educational priorities within Xing Long Secondary School, where instilling societal and moral values is seen as part of preparing students

for the exam and, by extension, for their future roles in society. This prioritisation of exam metrics over holistic development limits the space for innovative or studentcentred teaching practices.

Finally, the school's engagement with DE policy is largely shaped by compliance logics. When I visited Xing Long Secondary school, I asked about the school-based documents for the 'EI 2.0' initiative, and the administrators informed me that they did not have specific documents aside from those available on the municipal government website. The only document that was prioritised, printed, and easily accessible in the administrative office was the ITACS, discussed earlier in Section 7.2. The office kindly provided a paper copy of the ITACS, which was identical to the version distributed at Yang Guang Primary and matched other regional versions I had located online.

Mr Xu, a member of Xing Long Secondary School's academic affairs team—who took responsibility for coordinating the school's ITAC 2.0 learning and assessment tasks, having been the only teacher (apart from the headteacher) to attend a city-level training session—described how compliance with the ITACS framework dominated schoolwide DE efforts,

> "*The 2.0 classroom recording needs to reflect the teacher's ability to use IT. It must reflect at least two points. The teacher has to show that he/she has used two points of competence of ITACS in the lesson (recording). This is sometimes inconvenient for the teacher to say during the lesson, but it can be illustrated by pausing there when editing the video later. I helped the whole school with 80% of the editing and another 20% another teacher edited for them. It's a good thing I have my Mac, otherwise our school computers wouldn't be able to import a video for a day. (Computer hardware*

and internet speed) It's impossible to do this in a normal class. In fact, the purpose of this task is to see if the teacher can use (information technology) for teaching, and whether he/she has applied the knowledge and skills conveyed by the video training class and what I transformed to the teacher. It's equivalent to a test." (Interview, Mr Xu)

Thus, ITACS became not just a framework for teacher competence but a mechanism for external accountability. Mr Feng confirmed, "*It's a rigid policy requirement linked to professional evaluations and is considered a hard indicator for teacher assessments. I've invested a lot of effort into fulfilling the IT 2.0 requirements, even recording stepby-step instructions to ensure all teachers can complete their tasks*". Consequently, as mentioned earlier, resources for tasks like recording classroom sessions were prioritised in grant allocations over initiatives directly impacting teaching and learning. This approach to DE policy reveals a culture primarily driven by compliance at Xing Long Secondary School, where meeting procedural requirements often takes precedence over fostering meaningful improvements in pedagogy.

Additionally, the prioritisation of performative tasks over practical educational improvements underscores the tension between external accountability measures and the actual needs of teachers and students. Throughout my visit, I observed how such external pressures shaped the day-to-day functioning of the school. On one of my fieldwork days, I experienced firsthand the impact of an unexpected school inspection. During my scheduled classroom observation, the school's safety officer—my informant—explained that the day's timetable had been abruptly altered due to a surprise visit from a higher-level safety inspection team. As a result, several teachers

were reassigned to organise documents and assist with the inspection, leading to the cancellation of my observation.

This incident highlights how the inspection pressures not only disrupt the regular teaching schedule but also foster performative responses from rural schools and teachers, as demonstrated by Wu (2016). Teachers and administrators are often preoccupied with ensuring that all the necessary documents, safety manuals, attendance records, and exam countdowns are meticulously maintained to meet external requirements. The focus shifts away from genuine educational development and instead centres on measurable compliance strategies, a phenomenon also noted by Fullan (2015). This emphasis on compliance extends to the implementation of digital education policies.

The contrast between superficial compliance with digital education policies and the rigorous enforcement of safety protocols aligns with Ball et al.'s (2012) notion of schools creatively reinterpreting and recontextualising policies to fit their immediate needs. The lack of a clear, school-specific plan for digital education further emphasises this point. Rather than developing strategies that directly benefit teaching and learning, the school tends to subsume digital initiatives within broader, quantifiable targets set by higher authorities. This also echoes findings from Wang et al. (2022), who observed that rural schools often lack a comprehensive and coherent plan for digital education, with digital initiatives frequently absorbed into broader, externally mandated agendas. These structural and cultural characters shape an ecology where teacher agency is mediated by bureaucratic constraints, limited autonomy, and institutional demands for performative compliance with national policy initiatives like Educational

Informatisation 2.0 (EI 2.0).

8.2.3 Mr Feng: A digitally capable practitioner navigating systemic constraints

During my visit, Mr Feng was responsible for teaching Year 8 Mathematics and Information Technology to all three-year groups (Years 7, 8, and 9). In addition to his teaching responsibilities, he also oversees financial reporting and monitors food quality in the school cafeteria. He supports the implementation of digital education policies, including the recording and uploading of classroom lessons as part of the school's DE initiatives. As a participant in China's Free Teacher Education Policy (FTEP), introduced to address rural teacher shortages, Mr Feng returned to his home village to take up a post at Xing Long Secondary School after graduating from a provincial normal university in 2022. In accordance with the FTEP agreement, he is required to serve in a rural school for a minimum of two years. Although he is originally from the same rural area, Mr Feng expressed a clear aspiration to transfer to a town-based or better-resourced school once his service obligation is completed. His ambivalence reflects the broader tensions identified by Wang (2013), who argues that participants in the FTEP often experience a value conflict between state-imposed expectations of educational equality and their own aspirations for professional development and social mobility.

The observed lesson was a Year 8 Mathematics class of 49 pupils. The classroom was equipped with an interactive digital blackboard, which Mr Feng introduced to me as the latest provincial upgrade for rural schools—called 'Xiwo 5' and discussed in Section 7.4.1. He regarded it as a valuable technological advancement for teaching.

Before the lesson began, Mr Feng placed his mobile phone at the back of the classroom without informing students and recorded the session to fulfil ITAC 2.0 requirements. Although students turned their heads to watch him place the phone, a sense of routine prevailed, and no one objected to the unannounced recording. After positioning his mobile phone, the students' attention shifted to Mr Feng as he moved towards the blackboard.

Then, Mr Feng smoothly transitioned into the lesson, began with a concise introduction to the topic while seamlessly integrated the digital blackboard into his teaching. Mr Feng's class was one of the few observed instances where a teacher demonstrated weaker classification (C−) pedagogy, particularly during the first third of the lesson. As he adeptly navigated the digital technology to create a highly engaging and interactive learning environment. This effective use of the digital equipment/system in the classroom was reflected in the observation notes:

> *He navigates the Board, bringing up a list of student names. The names appear on the screen and are shuffled, creating a sense of anticipation among the students. Two students were randomly selected to participate in a math exercise, which were fill-inthe-blank questions. A 2-minute countdown timer was set at the top center of the screen, which added an element of urgency and excitement for students. (CO-Mr Feng, Math)*
>
> Students can drag and drop these answers into the corresponding blanks by simply using their fingers. The selected students and the rest of the students were divided into two groups based on where they stand or sit (facing the left or right-side questions). The students not selected participated enthusiastically, watching the timer closely, encouraging their teammates to work quickly and even shouting answers to

help their teammate who was standing in front of the screen. (CO-Mr Feng, Math)

By incorporating interactive elements into the lesson, Mr Feng leveraged technology as a crucial component of the teaching strategy, aligning with the structured approaches to game-based learning. Such approach is suggested by researchers (Hawlitschek & Joeckel, 2017; Li et al., 2024), can encourage active student participation and promote a shift towards student-centred pedagogies. This approach also reflects Mr Feng's ability and sense of how to integrate digital tools effectively into pedagogy to enhance the learning experience. This aligns with his interview insights, where he noted the enthusiasm of rural students for computer interactions:

"*Our region conducted a summer workshop on how to use the 'Xiwo 5' (the digital blackboard system). This system is very engaging for our rural students, as normally they don't have much access to this type of digital participation. Every time I teach, the students are most excited to see this interface. Since I am proficient in using this system, I can set timers, like a two-minute countdown to check which students have completed their exercises, and randomly select students for quizzes or games since it stores all personal information of students. The students love this because it feels like a game to them, and even those not selected participate eagerly*." (Interview, Mr Feng)

In addition to the training experience for the application of this new system, Mr Feng's teaching practice demonstrated a notable degree of digital competence and confidence, stem from his academic background and early exposure to technology. As he shared: "*My coursework included computer-related studies like C language and VB programming, as these are integral to Applied Mathematics, which also involves financial mathematics and computing, though we didn't study these extensively. We also had an important course on information retrieval that taught us how to find specific*

information on information-overloaded websites. Personally, I started using a computer in elementary school because my father, who also teaches math, was quite forward-thinking and bold. He bought our village's first computer for 3000 yuan when I was in the second grade of elementary school, a time when online shopping wasn't available and buying a computer in our rural area was not easy. That's when I began learning to use computers and chat online." (Interview, Mr Feng)

This early engagement with technology fostered both his competence and confidence, which were evident in his classroom practice. Observations revealed his ability to integrate digital tools in ways that actively engaged students, particularly in the initial stages of lessons. Moreover, as highlighted in Chapter 8, his role in mentoring colleagues further reinforces his participation in the reform of digital education within the school's ecology. Although beyond his teaching responsibilities, he is expected to support his peers with technical tasks and digital lesson planning, which also placed additional strain on his workload. He views these responsibilities as a valuable opportunity for professional growth. As he shared:

> "*This makes me extremely busy, but it is a process of self-improvement. Moreover, in helping my colleagues, I also get to reflect on my own teaching methods and enhance my professional skills.*" (Interview, Mr Feng)

He also takes pride in the fact that, as an early career teacher, he can play an active role in shaping the school's approach to educational change. This experience demonstrated not only his digital competence but also his confidence and accountability align with Passey et al's (2018) digital agency, as he leveraging these skills to mentor peers and address technical issues. His proactive support of colleagues, combined with his ability

to manage institutional demands, underscored his exercise of teacher agency within the constraints of rural education (Priestley et al., 2015). In subsequent findings, it was evidenced how Mr Feng leveraged his digital agency to support his exercise of teacher agency when facing resource limitations and administrative barriers in the digital context. As he explained,

> "*Whenever we (teachers) need some equipment or teaching aids and ask the finance department, the answer is always that there's no money, it's difficult, and we teachers have to overcome it ourselves. This is a very real problem. If these aspects could be improved, I believe the classes in every school could develop very well*" (Inter, Mr Feng).

It similar to other teachers' experiences, such as Mr Xu who highlighted the geographical and administrative restrictions on accessing high-quality digital resources. But Mr Feng offered a contrasting perspective, demonstrating a proactive approach to these challenges. Mr Feng not only navigated these systemic constraints but also leveraged his personal resources and professional networks to access high-quality digital materials. As he explained:

> *"I usually find teaching materials on Xueke Wang, a professional educational resource platform that isn't cluttered with the miscellaneous information typically found on the internet. Although our school hasn't contracted with Xueke Wang, fortunately, my wife's school in the city has, so I use her account to log in and download resources. There's also Jingyou web, which has sets of teaching materials organized by grade and subject like grade 8, grade 7, and so forth, covering the entire curriculum. These are usually of lower quality, so I prefer to use resources from*

Xueke Wang. However, these resources require one to search and filter them; they aren't handed to you as a complete set. For instance, just today, I used Xueke Wang to search for questions relevant to my lessons to create an exam. These questions were meticulously selected by me, and I am very satisfied with the final test paper I compiled. This website aggregates quality content, including both paid and free educational materials recommended by the Ministry of Education." (Interview, Mr Feng)

From a practical standpoint, this approach is an active response to resource scarcity, enabling Mr Feng to provide higher-quality materials for his students despite the institutional limitations of his school. This is where teacher agency emerges (Priestly et al., 2015). However, this practice may raise ethical considerations around digital accountability. As discussed in Passey et al.'s (2018) framework of Digital Agency, accountability involves making informed and ethical decisions in digital engagement. By using his wife's account, Mr Feng bypassed institutional protocols, reflecting both a practical response to resource scarcity and a gap in responsible digital practices.

Despite Mr Feng's strengths in digital competence and confidence, his approach to using ready-made DERs reflects a broader pattern shared by other participating teachers, as discussed in Chapter 7 and evident across multiple cases in this chapter. This finding aligns with existing literature highlighting the trends that teachers relay on internetbased materials to plan lessons, often due to insufficient institutional support or lack of time (Sawyer & Myers, 2018; Kivunja, 2013). Whether sourced from official DER platforms or shared by experienced teachers online, Mr Feng admitted, "*I rarely*

create my own content". When asked under what circumstances he might develop original materials, he explained:

> "*For example, sometimes for open classes, I would create my own teaching materials, but later I discovered that many others make similar materials, and there are services that specialize in creating teaching materials. The online resources are so plentiful that what I create is often not much different from what's already available, so I might as well use existing ones. Of course, I only opt for free resources. I can look for shared lessons from other excellent teachers on the Ministry of Education's platform.*"
>
> (Interview, Mr Feng)

His preference for using existing resources stems from a combination of perceived quality, accessibility, and efficiency. This mirrors findings from international contexts, such as Chile and South Korea, where teachers regularly utilise digital platforms to access presentations and worksheets designed by peers or third-party providers (Ibieta et al., 2017; Shin, 2015). For Mr Feng, the time required to develop original content appears disproportionate to its added value, especially when high-quality alternatives are freely accessible. His approach illustrates a pragmatic stance—prioritising functionality and time-efficiency over creative engagement—reflecting a broader trend among rural educators who operate under significant time constraints and institutional expectations (see also Section 7.4). While such practices are understandable given the workload and structural limitations, they may also restrict opportunities for deeper pedagogical innovation and teacher-led resource design.

Furthermore, his involvement in the ITAC 2.0 initiative and his perceived view on DE policy further shape his approach for DE practice. As he explained:

"Achieving municipal honours, which are difficult for rural teachers to obtain, requires uploading original, excellent teaching materials and classroom recordings to the national platform. This process must involve original content." (Interview, Mr Feng)

Elaborating on his administrative role and the digital systems in place, he added:

"They [classroom recordings] can be uploaded to three specific platforms: the national platform, the provincial platform, and the municipal platform, and I'm the administrator for the last platform. The main purpose is to help rural teachers stay connected with informatization management. However, I haven't uploaded them yet." (Interview, Mr Feng)

Despite his capability and awareness of these requirements, Mr Feng has not demonstrated greater agency in fulfilling them. This hesitation points to systemic and contextual barriers that undermine rural teachers' motivation and capacity to engage in innovative practices, even when they possess the skills and knowledge to do so. This reflected in the broader view about the ITAC 2.0 initiative as a box-ticking exercise:

"It's a rigid policy requirement linked to professional evaluations and is considered a hard indicator for teacher assessments. I've invested a lot of effort into fulfilling the IT 2.0 requirements, even recording step-by-step instructions to ensure all teachers can complete their tasks. For most, it's just about fulfilling a requirement." (Interview, Mr Feng)

The pressure to fulfil these requirements also influenced how Mr Feng approached the classroom recording for the lesson I observed. During the post-lesson interview, he shared his concerns:

> "*Recording lessons worries me because the students' behaviour might change if they know they're being recorded. As you can see, there were a few mistakes in my lesson, and the feedback from the students was very honest. But that could never be in a competent classroom transcript. So, I won't be using this video. I will find another lesson to complete the recording task.*" (Interview, Mr Feng)

This response reflects a performative approach to meeting the government's digital technology application assessment standards, where professional expectations drive a focus on compliance over authentic teaching practices. For most teachers in this study, responding to policy demands and completing assessment tasks took precedence over the creative process of knowledge creation. Even for Mr Feng, a teacher with strong digital competence and confidence who holds ideals for improving rural education, this cultural norm within rural schools diminished the role of creativity in teaching. As observed in Mr Feng's classroom, the pedagogy of using digital technology to support interaction was not followed through but turned into presentation most of the time:

> The teacher presenting slide with key points of the equation and read what was written on the slides. Then, he let students themself to think about how to apply this equation and ask them questions. For example, he read the explication of the equation from the slide, them he presented pictures and pattens to ask students to explain how the side lengths of these shapes can be calculated using the equation. Most of the students actively answered the questions, even some of them got wrong, but they keep trying. When students' answers were incorrect, the teacher controlled the use of

the stylus and chose a different color from the graphics to outline the edges of the relationship between the criteria given in the question and the corresponding relations of the equation on the screen. (CO-Mr Feng, Math)

Mr Feng's reflections further illustrate how the realities of rural education shape his approach. When asked why there was a shift of teaching methods during the observed lesson, he explained:

"I believe character education is crucial because the foundation in rural areas is incredibly weak. We talked about 'mathematical reality' in university—how frequently a person encounters math in real life and their level of mathematical literacy, which is high among city kids. For instance, I asked our students where they had seen parallelograms in real life, and many couldn't recall ever seeing one. Also, when discussing functions, which are abstract and require a certain level of mathematical reality for students to transition from concrete examples to abstract concepts, I found our rural students completely baffled. So, I resort to rote learning because no matter how I explain it, they don't understand, so they must memorize." (Inter, Mr Feng)

This statement underscores how systemic disparities, particularly students' limited exposure to foundational knowledge, real-world applications, and abstract reasoning, constrain pedagogical options for rural teachers. Despite Mr Feng's digital competence and awareness of more constructivist methods, his decision to fall back on rote learning reflects the perceived incommensurability between abstract mathematical concepts and his students' lived experiences. This mirrors what Howlett (2021) describes as the structural misalignment between centralised pedagogical expectations and local

realities in rural China, where curricular reform and innovation often presume a level of cultural capital and cognitive readiness that many students have not acquired. Thus, while Mr Feng's case reveals a teacher with aspirations and technical ability, it also illustrates how contextual limitations—particularly educational inequality and underresourced learning environments—constrain the enactment of more student-centred or inquiry-based approaches. His reliance on memorisation is not a rejection of innovation, but rather a pragmatic adaptation to the challenges of his context.

Unlike other observed cases where students fell silent during teacher-led questioning, Mr Feng's class remained responsive and engaged. Even though the technology was only used to present content, opportunities were still given for students to interact with the digital content presented, rather than the teacher unilaterally lecturing. One of his strengths was the degree of initiative he handed over to students, allowing them time to think independently and apply concepts to connect graphs with equations. His use of visual scaffolding with a stylus to guide students through problem-solving exemplified effective teaching strategies. This illustrates how Mr Feng's effective use of digital tools transformed the classroom environment, fostering a dynamic and sustained pattern of student engagement. This approach reflects a shift towards a more student-centred pedagogy facilitated by digital tools, which aligns with the broader goals of digital education to enhance student engagement and interactive learning (Selwyn, 2013).

In summary, Mr Feng's digital competence plays a pivotal role in enabling him to exercise teacher agency within the constrained conditions of a rural educational context. His ability to effectively integrate technology into his teaching is evident in both his classroom practices and his broader support for colleagues navigating digital education

policies. However, his reliance on external resources and focus on meeting policy requirements reflect the systemic barriers that rural teachers face in fully realising the transformative potential of digital education.

8.2.4 Miss He: Pedagogically committed while contextually adapted

Miss He is a female teacher with five years teaching experience, primarily taught English at Xing Long Secondary School. In addition to her English classes, she was also responsible for teaching "Family, Society, and Legal System" and a thematic course on "Life, Ecology, and Safety" during the time of my fieldwork. These subjects were part of the 课后服务 (kè hòu fú wù), or after-school service initiative, introduced under China's recent education policy reforms. This initiative aimed to reduce students' academic burdens and curb reliance on private tutoring by providing structured, supervised activities beyond regular school hours. Miss He's involvement in these courses stemmed from the school's requirement for teachers to meet a minimum number of teaching hours, which her English classes alone could not fulfil.

However, these after-school courses were not included among examination subjects. She explained that these after-school service classes were often used to complete the English curriculum, ensuring her students met academic requirements. This method of managing workload pressures while navigating the tension between policy-driven initiatives and the practical realities of teaching in under-resourced contexts was tacitly recognised by most teachers and schools during my fieldwork.

Regarding the observed class was a year 8 English lesson with 42 pupils, exemplified Miss He's approach to integrating digital technology into her teaching. The classroom layout and physical equipment were similar to those in other classrooms observed in Xing Long and most rural classes. During the lesson, Miss He utilised a remote control and an electronic stylus to manage the content displayed on the screen, including slide transitions and content sequencing. The electronic whiteboard was used extensively for displaying text and images, serving as a central tool in the teaching process. The use of digital tools demonstrated Miss He's confidence in handling technological resources, although her pedagogical approach primarily followed a traditional structure of teacher-led instruction, as noted below:

Miss He stood on the teacher's podium. The lesson begins with the teacher presenting a question "Why don't you talk to your parents?" for this lesson's topic on the screen. But she did not open a dialogue with the students on this question. She then touched the whiteboard and displayed slides blending text and images and the teacher said: 'let's review last lesson's vocabulary first'. Then she posed some questions relevant to the images. For each question she scanned the students and then used her finger to point a student to stand up and answer the question. These questions had only two option answers, true or false. When a student gave an incorrect answer, Miss He directly corrected them, providing the right answer along with a brief explanation of one or two sentences. The correct answers were then displayed on the slide using the remote control. (CO-Miss He, English)

This structured and highly teacher-led approach reflected Miss He's emphasis on efficient content delivery. While the use of technology streamlined the presentation of materials and maintained classroom order, the pedagogical strategy relied heavily on

rote learning and minimal interaction. For instance, although the lesson's opening question had the potential to encourage dialogue and student reflection, it was not used as an opportunity for engagement. Instead, the lesson prioritised reviewing and reinforcing previous vocabulary knowledge through straightforward question-andanswer exchanges. This method, commonly used to acquire basic knowledge, becomes particularly significant in contexts where educational resources and support are limited. Moreover, the large class size (42 pupils) and the limited teaching time (a maximum of 40 minutes) made it challenging to engage all students in meaningful interaction. Therefore, Miss He maintained control over the use of digital educational resources (DERs), directing how and when they were used. This included using pictures to stimulate students to recall learned knowledge and presenting subject knowledge in digital form to promote retention. These methods reflect a structured pedagogy approach where the teacher led the learning process with limited student interaction and autonomy in using digital tools. A deeper examination of rural teachers' pedagogical choices reveals that such approaches are shaped—if not constrained—by the structural conditions discussed in Section 8.2.1.

However, Miss He's integration of technology into the lesson through digital storytelling represented a shift towards more creative teaching practices:

> *Next, the teacher switched to a cartoon story related to the theme of the lesson and displayed it with English sentences one by one with animation on the screen. As the images unfolded, depicting scenes familiar to the students in their daily lives, their faces were beaming with recognition and interest. This session triggered the most enthusiastic response from the class. Students whispered to each other. When the teacher connected the story to the students' own experiences, the classroom was filled*

with the sound of vibrant responses from the students. In the midst of a lively discussion, the teacher asked questions about each cartoon. For example, in the first panel a child sits by a windowsill with sad looking eyes. The teacher asked the students: What do you think is wrong with this child? What is this picture trying to say? What would you say to explain this picture with English that you know? She paused for a few moments and then called on several students in turn to answer the above questions. Students' responses varied, sparking a lively discussion that brought the classroom to life. (CO-Miss He, English)

In this observation note, Miss He scaffolded the students' learning by summarising their answers and introducing the English sentences associated with each cartoon image. She connected the story to broader themes by posing another question: "*Who can you talk to if you have a problem?*". This question not only reinforced the lesson's vocabulary but also encouraged students to consider the personal relevance of the theme. The interaction in this segment exemplified a departure from her earlier, rigidly structured teaching approach. Instead of relying solely on closed questions or direct correction, Miss He facilitated a more interactive and meaningful learning experience by using the cartoon story as a medium for interaction and exploration. By integrating a cartoon story related to the lesson's theme and displaying it with English sentences and animations on the screen, the teacher effectively captures the students' attention and fosters engagement. It evidenced by students' enthusiastic responses and whispered exchanges.

Although the dialogue remained limited, the use of technology changed from presentation to a more adaptive and responsive approach. Miss He's selection of digital

resources and thought of pedagogical objectives demonstrated a nuanced approach to pedagogy that balancing traditional method with creative, technology-supported practice. This was evident in above observation and explained in her interview. When I asked her to share the considerations for which digital resources were chosen for above observed lesson. She stated:

> "*I chose the cartoons with such theme because I also respond to our school's mental health lesson (after-school service), and I know that many children in our rural area lack communication with their parents, and they don't know how to express their psychological pressure or emotional needs. So, the idea of this courseware was not only to incorporate English vocabulary and sentences into the storyline, but also to show them that they can talk to their parents when they have problems. At the same time, the inclusion of cartoon can attract their (students) attention. Especially when they feel that the content of these materials can be related to their own lives, they will be more likely to engage with and remember the content."* (PC-Interview-Miss He)

This response highlighted Miss He's awareness of the need to make learning relevant to her students' lived experiences while addressing broader concerns such as mental health. By linking English instruction to the students' personal and emotional contexts, she not only enhanced engagement but also demonstrated an ability to integrate crossdisciplinary themes into her teaching. Her use of cartoons and interactive questioning underscored the evolving role of technology in rural classrooms, where digital tools support both content delivery and student engagement.

In discussing her use of digital tools, she acknowledged both benefits and challenges. Miss He believed that technology had increased students' interest in learning, improved their grades, and brought her professional satisfaction:

"*I think for students, because I find educational materials or videos for them to watch, it serves as a great demonstration. If it were in the old environment, these situations would rely solely on the teacher's explanations, and they would only hear the words, but now they can see more vivid content through videos, which might better stimulate their potential or self-recognition. In terms of professional performance, I do see a benefit, as I feel the support of this technology has increased students' interest in learning, which has also improved their grades and brings me joy.*" (Interview, Miss He)

However, she acknowledged challenges in creating digital content from scratch, noting that she often relied on ready-made templates or downloaded presentations from platforms such as Xiwo or other online sources. She also noted limitations, including her own digital skills and the students' proficiency with technology. She expressed a desire to learn more to create better content and recognised a gap between her ability to apply technology and that of younger teachers:

"*I am satisfied with the current technology and hardware. However, there is still a gap in proficiency and understanding among students when it comes to using these tools. Also, there is a gap between my ability to apply technology and that of younger teachers. A lot of tools and system applications I don't know how to operate them. That's why I don't use much digital material in my classroom either.*" (PC-Interview, Miss He)

With such digital competence, she endeavoured to enhance the learning experience through careful design the instruction. As shown in the latter part of her class' practice activities. Miss He displayed complete content for identification and memorisation: The

digital screen was used to demonstrate correct sentences, emphasising key points through highlights and using coloured fonts to categorise similar sentence structures. She is resenting text sequentially, prompting students to recall before revealing the content. Showing images first and having students articulate the corresponding sentences. (CO-Miss He, English)

This approach was repeated three times, each time varying the presentation style. Her teaching practice reflected a balancing act between the school's teaching plan and her personal teaching philosophy. While she aimed to meet the prescribed teaching objectives, she also strived to ensure that students truly understood the material. She adjusted her methods based on the students' ability to comprehend and accept the content, sometimes requiring more detailed explanations than initially planned: "*It's a mix of both. We have to meet the teaching objectives, but I also incorporate my teaching philosophy to ensure the students truly understand the material.*" (PCInterview, Miss He)

Despite systemic constraints and limitations in resources, Miss He's approach reveals how rural teachers negotiate the intersection of digital education policy, infrastructural scarcity, and their own pedagogical beliefs. Her decisions were informed by a critical awareness of her students' needs and the practical constraints of her school's digital infrastructure. In doing so, she embodied a form of practical-evaluative agency (Priestley et al., 2015), responding to systemic pressures without compromising her core teaching values. Her case illustrates the often-overlooked creativity and resilience that underpin rural teacher engagement with reform.

8.2.5 Miss Hu: An early career teacher with limited professional confidence

Miss Hu is an early career teacher who has two years of teaching experience at a rural secondary school. She graduated from normal university with the major in music and dance. In this rural school, Miss Hu has a multifaceted role. In addition to teaching music, she also teaches Chinese language and literature (CLL) and biology, and serves as a form teacher (班主任/Ban Zhu Ren) in a year 7 class. The observed class was the

CLL lesson with 49 pupils in year 9. As mentioned in section 7.4.1, Miss Hu shared her experiences of digital integration for teaching, shown a committed to leveraging technology to enhance teaching and learning process, at least in theory. Her greatest interest in using technology seemed to be in generating student interest and make knowledge accessible and memorable. I came to know this when I observed her class:

This lesson focuses on ancient Chinese literature "木兰诗" (The Ballad of Mùlán). The teacher uses the electronic screen to display the slide with lesson title and segments of Mulan. Throughout the lesson, the slides are showing full pages of texts and is identical to the content of the textbook in the hands of the students. Even the translation of classical Chinese, which is dynamically presented sentence by sentence using PowerPoint animation, is exactly the same as that in the textbook. (CO-Miss Hu, CLL)

In this observed lesson, the electronic whiteboard served as a modern replacement for the blackboard, presenting the textual content of students' textbook. This reveals a structured and meticulously planned use of digital tools to support traditional pedagogical method. The use of digital technology is primarily focused on presenting

information clearly to ensure that students were able to follow the teacher's instructions. Miss Hu confirmed this in the post-class interview. When asked if the digital resources used in the classroom were self-produced and the reasons for the content selection, she responded:

"*The slides were ready-made ones that I download in 'Xiwo' system, sometimes I also download them from the Internet. The content was the text of the 'Mulan' which was the same as in the textbook. The advantage of presenting text in segments on the screen is that it helps students to concentrate. That way, even if they got distracted, they could look up at the screen and see where I am talking about. And the use of highlighting to emphasise key points helps them remember the content better too. Because this lesson was mainly about read and remember the content of this poem and its meaning, so I don't need too many pictures. I do make slight changes to adapt my class. Each teacher has their own style, so some adjustments are necessary. Sometimes, I also consider my students' level. For example, for this lesson's courseware, I removed some difficult slides that were not suitable for our rural students.*" (PC-Interview-Miss Hu)

From this interview, the class was designed more in terms of instruction reflected a strong classification of knowledge. Also, the teacher's emphasis on text-based materials and based on the teacher's personal preference highlighted the strong framing of technology integration. It worth notes that Miss Hu made slight modifications to the digital content to better suit the circumstances of the rural students, showing the informed decision in her selecting and integrating digital resources. Moreover, Miss Hu believed that presenting rich digital elements in teaching is an effective way to keep the students engaged. She said:

"*I usually integrate various elements to keep students engaged. For example, I might use temporary figures or different resources to make the lessons more intuitive. Students tend to get distracted easily, so it's important to have clear, engaging materials. I focus on making the main paragraphs clear and accessible.*" (PC-Interview-Miss Hu)

This view of presenting digital courseware to capture students' attention as engagement is consistent with the general sentiment among most teachers as shown in 7.4.1 and other cases. However, despite these thoughtful adaptations, the classroom observation revealed minimal student engagement:

> The teacher reads aloud the first segment displayed on the screen, prompting students to follow along in their textbooks. Throughout the lesson, the students were client most of time. Some students appeared distracted, burying their heads deeply or staring blankly at the screen, and some rest their heads on their hands. A few students in the front rows occasionally looked up at the screen then returned their attention to their textbooks. They appeared to be less than excited about what the teacher is presenting and going to do. Occasionally, the teacher pauses to ask questions related to the text. Despite these pauses, there is little student interaction. Students usually remained silent, few sparse voices from students are responding to 'yes' or 'no' questions. They only reading the texts aloud when prompted by the teacher. (CO-Miss Hu, CLL)

The lack of interaction observed in the classroom aligns with the broader trend in rural education where technology is used to enhance traditional teaching methods rather than transform them. Rather, this technology enhancement remains at the service of the exam. As observed in her class:

> The teacher uses various colors to highlight keywords and phrases to draw attention to important information and emphasises that these information need to be memorised as they are subjects to exam. (CO-Miss Hu, CLL)

Also, Miss Hu stated, "*Because this lesson was mainly about read and remember the content of this poem and its meaning, so I don't need too many pictures.*". In the case of only memorization is required to serve the exam, Miss Hu's choose to transmitting knowledge in a "feeding and absorbing" manner of traditional lecture, where the teacher provided information and the students passively receive it.

From the classroom observations, Miss Hu's teaching approach was consistent with what was observed in Mrs Zhang and Mr Chen's class. The use of digital tools in this context primarily serves to reinforce the content that needs to be memorized for exams, rather than to foster critical thinking or deeper engagement with the material. However, compared to Mrs Zhang and Mr Chen, the teacher Miss Hu showed some level of customisation to better fit her students' needs. More importantly, this slight difference indicates that while the overarching approach remains traditional and teacher-centered, there is room for individual teacher agency and contextual adaptation. This became evident when I asked her why she follows specific pedagogical principles and integrates technology in her classroom. She explained,

> "*This is the second lesson of 'Mulan', we had the first one last night. In the first lesson, I played some Mulan films and videos for the students in the classroom to introduce the topic and capture their interest. It helped a lot. If it was just me talking and reading the text, they would find the words very complicated and struggle to understand the characterisation and background of Mulan. But with the film and the*

video, they can quickly grasp the character and the historical context of the lyric. I left more time for them to feel and understand the characterisation in the film by themselves. But today's focus was on translation, and like all literary lesson, there was an instruction: explaining the meaning of the texts and giving the students a clear explanation of what they should understand in order for them to memorise it." (PCInterview-Miss Hu)

Miss Hu's case illustrates the projective and practical-evaluative dimensions of teacher agency (Priestley et al., 2015). While she aspires to innovate and engage students through technology, her use of digital tools is influenced by a combination of her early career stage, heavy workload across unrelated subjects, and a lack of targeted digital pedagogical training. Being required to teach beyond her disciplinary expertise further complicates her ability to meaningfully integrate digital tools into subject-specific instruction.

8.2.6 Mr Chen: Exam-driven approach to digital integration

Mr Chen is an experienced teacher who has over 20 years of teaching experience at a secondary school. He graduated from a local college with a major in education, then he started his teaching career in the secondary school where he used to be studied in his hometown till now. Over his extensive teaching career, he has taught a variety of subjects, including Chinese Language and Literature, Moral Education (思想政治), and Geography. Currently, besides teaching mathematics to Year 9 students, Mr Chen also undertakes office work, sharing some administrative duties of the school. In observing Mr Chen's mathematics class, a similar pedagogical approach as Mrs Zhang was

evident, albeit with the inclusion of digital technology for presentation. Throughout the lesson, the use of digital technology was structured and meticulously planned to support traditional teaching methods. The technology was primarily used to display content, without interactive features:

> *The primary content of the lesson revolved around explaining and solving exam questions. To aid in this, Mr Chen used a projector to display the paper-based exam questions onto a large screen at the front of the classroom. For instance, during the explanation of a question, the teacher taps the screen to highlight and circle key points in the text, ensuring that the visual aid complements the verbal instruction. The teacher provides explanations by pointing to the corresponding information on the screen and selecting the highlighting function in the whiteboard system. Once the questions were projected, the screen remained blank for the rest of the session, and Mr Chen switched to using a physical textbook for verbal explanations. (CO-Mr Chen, Math)*

Mr Chen's classroom practices mirror of Mrs Zhang, where the focus is on the teacher presenting information and students following along passively. Mr Chen used the projector to display exam paper, this approach was also seen in Mrs Zhang's mathematics class, where PowerPoint slides were used to present text-based questions and key points, with minimal student interaction. Despite the digital twist, the instructional strategy remains traditional and teacher centered. The pedagogy approach seemed to be no significant difference with or without technology integration. As I observed,

> *At one point, Mr Chen displayed a section of the exam paper, which included a question and a table for students to complete. While he selected a student from the*

front row to verbally provide answer, he doesn't ask the student to explain more. He used a electric pen to fill in the answer on the screen and verbally provided detailed explanations of the calculation rules. (CO-Mr Chen, Math)

In the post-class interview, Mr Chen elaborated on the use of technology in his teaching, highlighted a pragmatic approach to integrating technology that has been accumulated from his over 20 years of teaching experience within the constraints of a rural school environment:

"*During the lessons, I primarily use the screen to display key points, mathematical equations, and sometimes illustrative images. I also use PPTs sometimes, it's easy to download from the Xiwo system. It's plenty informative enough. Mr Chen's post-class interview provided further insight into his approach and the rationale behind his limited use of technology. For this lesson, using projector already quite challenging. This set of exam papers does not have a digital version, so I have to project questions with graphics and tables onto the screen. This way, I don't have to draw diagrams or create tables, and I can annotate directly on the screen."* (PC-Interview-Mr Chen)

The prepare and use of digital education resources (DERs) was similar as Mrs Zhang--even broadly similar as most teachers in this research—who also relied on ready-made DERs. Furthermore, Mr Chen and Mrs Zhang, both with more than 20 years of teaching experience, preferred to use the downloaded sample courseears, suggesting that these experienced teachers appeared to be more reliant on ready-made DERs with less creative and adaptation. In **Chapter 9** the discussion of digital competence will explain this phenomenon. It is also in this situation where teaching resources may not be appropriate for the students (as expressed by Miss Hu), that classroom interaction

became less happen. Research has revealed that presenting instructional content through screens is not a change in pedagogy and does not effectively facilitate the construction of knowledge (Szabo and Hastings, 2000). On the contrary, Bartsch & Cobern (2003) reported that this visual element even resulted in poor learning outcomes.

However, in comparison to examinations, the teacher does not seem to care as much about classroom interaction. When I asked, "*What are your thoughts on engaging students more interactively using these tools*?" Mr Chen replied:

> "*Honestly, I don't think there's a strong need for that. My focus is on ensuring students understand the material for their exams. I believe they just need to practice more. Maths lessons' courseware no need to be too fancy. The math syllabus already covered in previous semester, and the main task this semester is to have students to practice solving math problems and I explain key and difficult questions in class to prepare for the high school entrance exam."* (PC-Interview-Mr Chen)

Mr Chen's approach focused heavily on the teacher's presentation and the students' memorisation of exam content. This reflects traditional pedagogy in China, deeply rooted in Confucian educational values, which emphasise rote memorisation, teacher authority, and exam-focused instruction, as discussed in Chapter 2. This cultural context shapes the way technology is perceived and utilised in the classroom. Apparently, prior to the exam, with or without technology, knowledge is taught and memorised, rather than constructed in experiences and dialogues. As observed in Mr Chen's class, rather than using technology to create a more dynamic and engaging learning experience, the focus remained on maintaining discipline and serving exam preparation. This idea of integrating technology in the service of exams is something we're already very familiar

with from the findings of primary interviews in **7.4.1** and the previous cases. His case also echoes broader patterns observed across other teachers in this study—particularly the tendency to instrumentalise technology for visible, measurable outcomes tied to accountability structures. This performative engagement with digital education will be further unpacked in Chapter 9, where it is discussed as a defining feature of teacher agency under the conditions of policy enactment and systemic constraint.

8.3 The implementing of Digital Education in The Ecology of Yang Guang Primary School

8.3.1 Profile of Yang Guang Primary School

Yang Guang Primary School is located in a rural town approximately 30 kilometres from the county and under the same municipality as Xing Long Secondary School. This area has a long-standing history of traditional agriculture, with economic and social development lagging behind urbanised regions. In 2020, the township underwent administrative restructuring, during which several smaller townships—including Yang Guang's original jurisdiction—were merged into a larger administrative unit. This reorganisation led to the closure of the local township office, further reducing the community's institutional presence and development capacity. This process exacerbates what Section 2.3.3 refers to as the 'hollowing out' (kongxinhua/空心化) of rural communities, where many villages are now sparsely populated and socially fragmented.

Within this shifting demographic landscape, Yang Guang Primary School serves as a key educational institution (Centre Primary School/中心小学), catering to students

from six villages and one community. It operates across two campuses: a main campus with 487 students and 12 classes, and a smaller satellite campus with 67 students across six classes. A total of 30 teachers work on the main site, while the satellite site is staffed by eight teachers, some of whom teach across both campuses. Most of the teachers at Yang Guang Primary School live in the county and commute daily between their homes and this rural school. Despite working in the rural setting, many teachers choose to have their own children attend schools in the county, which they perceive to offer better educational opportunities and resources compared to the school where they work.

Class sizes typically range from 35 to 46 pupils. The teachers told me, the number of younger students has been gradually decreasing due to China's declining birth rate and more families moving to cities (Murphy, 2020). More than half of the students are leftbehind children-- students whose parents have migrated to cities for work, leaving them in the care of elderly relatives (defined in Chapter 2). Of the total enrolment, 110 students receive government assistance, and nearly 10 students live with special illnesses or disabilities. This intergenerational caregiving model, while common in rural China, poses unique challenges for both learning and pastoral care (Bai et al., 2017; Ye & Wang, 2024).

Despite its status as a central primary school, Yang Guang Primary faces limited conditions, as described in the school's orientation paper:

> "*The students' desks and chairs were donated by charitable individuals in May 2022. The digital equipment for teaching is the second-generation whiteboard, and there is no class library cabinets, and classrooms are equipped with outdated wall-mounted*

fans nearing disrepair. The school library consists of mostly outdated books, and there is a significant shortage of suitable equipment for music and art instruction. The office facilities are basic, with aging desks, chairs, and antique-style cabinets. There is no air conditioner in office, teachers rely on electric fans during the hot summer months to cope with the heat." (Yang Guang Primary School Orientation Paper)

This suggests that teachers at Yang Guang Primary must adapt their teaching practices to outdated technology and limited resources. These material conditions not only define the physical environment in which teaching occurs but also influence pedagogical possibilities and the school's organisational culture (Biesta et al., 2015; Priestley et al., 2015). Together, these contextual features form part of a broader educational ecology, as the next section explores, this ecology plays a significant role in shaping how teachers at Yang Guang Primary School engage with DE reform initiatives.

8.3.2 The Structure and culture of Yang Guang Primary

Yang Guang Primary School shares many structural features with Xing Long, including dependence on county-level education authorities and alignment with the same decentralised but vertically coordinated governance model described in Section 2.4.2. However, the internal management structure at Yang Guang differs in its reliance on a lean administrative team. Day-to-day operations are largely managed by the academic affairs office. The headteacher, although officially in charge, was rarely seen on campus during my visits. The academic affairs office, administrated by Mrs Huang (Director)

and Mrs Liu (Deputy Director), shouldered much of the responsibility for running the school. The responsibilities of the academic affairs office were vividly illustrated during an interview with Mrs Huang, who pointed to a large lesson schedule displayed prominently on the office wall, said, "*I did all the lesson schedules by myself. If any teacher needs to switch classes, or if there are any changes, it's all up to me to make the adjustments*". This hands-on approach reflects the critical role the academic affairs office plays in keeping the school functioning smoothly. As Mrs Liu noted, "*The school can function without the headteacher for weeks, but without the teaching office, even for a day, the school would be in chaos*".

However, when it comes to school funding, the decision-making power is firmly in the hands of the headteacher. Like Xing Long, Yang Guang faces systemic funding shortages and relies heavily on government grants and occasional private donations. Mrs Liu commented, "*Our school has to fight for every bit of funding, and when it comes, the headteacher have to make hard choices about where to spend it*". The school's limited financial autonomy also means that teachers have little input into how resources are distributed. This issue is further elaborated in Chapter 9.

The school's hierarchical structure and top-down decision-making approach inhibit collaborative teaching cultures. Teachers often work in isolation, completing tasks assigned by their subject leaders without meaningful coordination. This weakens peer learning and collective professional development. As Mrs Liu observed in relation to EI 2.0 activities, "*For the school's teaching activities, including teaching competitions and open classes, as well as teacher assessment, ideally, those good at lesson design would focus on that, and those skilled in technology would handle the digital content.*

But now, each teacher is left to complete their tasks individually". This approach not only increased the workload but also limited opportunities for professional growth and collaborative innovation. As noted by Priestley et al. (2015), teacher agency is constrained when institutional cultures fail to support professional collaboration and distributed expertise.

Yet, a distinctive feature of Yang Guang's structural ecology is the prioritisation of performance-oriented activities—such as teaching competitions and policy demonstrations—over infrastructural or pedagogical investments. The precarious financial situation places significant pressure on the administration to allocate resources judiciously, often prioritising high-visibility initiatives like teaching competitions over fundamental classroom needs. Symbolic modernisation is visible in the physical infrastructure of the school. For example, I observed that Yang Guang Primary had dedicated specific classrooms for competitive and public teaching demonstrations, set apart from standard classrooms. Although this classroom was set up specifically for open classes, its layout remained traditional. Students were seated facing the lecturer, with narrow spaces between desks that limited movement. Notably, there was no aisle between rows, so the teacher could not get close to the students sitting in the middle. While this arrangement did not support student-teacher interaction, it functioned effectively as a stage for the teacher. From the back rows, observers had an unobstructed view of the teacher's movements and expressions, making it well-suited to a performance-oriented observation. At the front of the class where the teacher stood, there was a large digital screen between traditional blackboards.

These events not only demonstrate compliance with national education reforms but are also viewed as mechanisms for enhancing the school's reputation and supporting teachers' professional development, as highlighted in interviews presented in Section 7.4.2. These activities were also aligned with 'EI 2.0' and mainly followed the instruction of ITACS. During my fieldwork, teachers' offices were often empty, as staff were frequently occupied with preparations for competitions and open classes. I observed that there were several classrooms going through the open class or a mock teaching competition at the same time. However, these performative teaching activities did not necessarily translate into meaningful improvements in day-to-day classroom teaching.

At Yang Guang Primary, this performative compliance with policy is evident in the school's investment in digital display equipment, despite limited funding and a scarcity of learning resources. Outside each classroom, a small digital screen displayed the daily schedule and real-time attendance. However, teachers generally viewed these screens as functional yet non-essential to the educational experience. Miss Wang remarked, "*They are useful, I guess. After all, the school spent so much money acquiring them. The students can see exactly what the next lesson is, and they can prepare for it in advance. It's a sign of the modernisation of our school*". Eventually, During my observation in Mrs Zhang's class, the teacher only noticed a student's absence after the lesson had already begun. This incident underscores the decorative function of these screens, which, while projecting an image of technological progress, contribute little to actual teaching or learning. Instead, they represent the school's commitment to the appearance of modernisation rather than a meaningful integration of technology to enhance educational outcomes.

In the classroom, under the DE policies, Yang Guang Primary School updated its digital equipment, installing new interactive whiteboards. The big screen was set into outdated walls alongside traditional blackboards, with gaps revealing unpainted brick. However, this top-down push for modernisation has not addressed deeper structural issues. For instance, similar to Xing Long, maintenance of this equipment is also a challenge. As the headteacher explained,

> "*Well, equipment often breaks down and there isn't anyone on-site to fix it. We report the issues and wait, sometimes for a long time, for a technician from the "Xiwo" company, which is responsible for maintenance. If there were local repair centers in each district that could respond quickly to problems, things might improve*". (Interview, The head of Yang Guang Primary)

Larger repairs are costly and can quickly exceed the school's budget if not covered by the warranty. However, this reliance on in-house expertise is limited by the warranty and service constraints of the equipment itself. When asked if the school covers these expenses, the headteacher further explained,

> *"The warranty is only three years, and we're past that. Only the vendor who sold us the equipment can repair it, and others either won't fix it or can't. Our headteacher says the technology works, but the cost of repair is just too high*". (Interview, The head of Yang Guang Primary)

These findings align with those in Section 2.4.3, which highlight the fragmented responsibilities and limited technical capacity at the township level, contributing to significant implementation gaps in DE initiatives.

Adding to these challenges is the issue of intermittent internet access, which not only disrupts the consistent use of digital tools in the classroom but also limits the extent to which teachers can incorporate online resources into their teaching. As Miss Wang noted the impact of unreliable connectivity: "*The intermittent internet access is a significant challenge, restricting when and how I can use digital tools*". Similarly, Mrs Liu explained, "*The internet often drops during crucial moments, especially when we're using digital platforms or streaming videos. It's frustrating and makes it hard to rely on these tools*". This situation reflects broader systemic challenges. High maintenance expenses, coupled with inadequate network connectivity and limited service support, reveal a gap between the DE policy's intended benefits and its practical application in rural schools.

Unlike Xing Long, Yang Guang Primary does not face the pressure of high-stakes entrance examinations. However, students with stronger academic performance are often pre-selected for "重点中学" (key secondary schools) with better reputations and resources, reflect the educational structure and culture discussed in Chapters 2 and 3. Mrs Liu explained,

> "*In our area, sixth grade is the exit grade with some selective testing, but our county administers a uniform test for all sixth graders. Private and top schools do not require our students to take selective exams; instead, they select students based on their performance from the latter half of fifth grade through sixth grade. However, the student resources of (rural) schools like ours is getting worse. Many parents think that city schools have better teachers and better facilities, and that they teach better things. Especially in the last few years, educational opportunities in the higher*

sections, including secondary and high school, have been affecting enrolment in our school." (Interview, Mrs Liu)

This selective process creates a self-reinforcing cycle where Yang Guang Primary primarily serves students who have fewer opportunities to advance. As a result, the pressure to achieve high academic performance is diminished, and teachers are less motivated to encourage excellence, aware that many students are not pursuing elite academic pathways. This practice, though informal, reflects systemic patterns of educational inequality and status differentiation within China's compulsory education system (Fan, 2014; Li & Li, 2021).

Demographic pressures also define Yang Guang's ecology, as the school serves a community largely made up of left-behind children. This has created structural barriers to education, stemming from a lack of family involvement and support. As Mrs Huang explained, "*There isn't much pressure for academic progression from parents, since our school has many children with parents working away from home. Most of their guardians either don't know or don't care about education*". The structural impact of this demographic reality extends far beyond academics. Lack of parental engagement creates a vacuum in the school's structure, where teachers must compensate for the absence of family-driven educational support (Friedman, 2022).

During my fieldwork, I observed that teachers spent a significant amount of time addressing issues related to personal hygiene and discipline. Moreover, I identified a tension in the relationship between the school and the pupil's families. As one teacher, Mrs Liu stated, "*Parents are hard to communicate with and they usually blame the*

school when there is any issue arising with their child". This low level of parental involvement mirrors findings in rural education literature, which often highlights the disconnect between rural families and schools, where education is not always seen as a priority (Wu, 2016). Without the active involvement of parents, therefore, the teachers are left to manage student behavior and academic progress largely on their own. At Yang Guang, this dynamic shaped the expectations and attitudes of both teachers and students, as discussed in Section 7.4.2 and observed in Chapter 8.

Teachers themselves often commute from the nearby county town, motivated by better schooling opportunities for their own children. This spatial separation further distances them from the communities they serve, reducing opportunities to build stronger teacherstudent relationships. As Mrs Huang shared, "*Even though I originated here, I moved to the county and I commute an hour a day on rough roads, and I'm willing to do that because I prefer to live in the city, and my family is in there which is good for them*". Similarly, Mrs Liu explained, "*My kid goes to school in the county, and the school has better resources and the whole learning atmosphere is better there"*. This daily commute highlights a clear socio-economic disconnect between the teachers' professional environment and their personal lives. While they work in a less developed rural setting, their families benefit from the urban advantages of better schools and resources. This physical and emotional distance between their work and home life reflects a broader disconnect between the teachers and the rural community they serve.

The structural and cultural dimensions of Yang Guang Primary thus illustrate how teachers and administrators respond to these challenges; balancing policy demands with local realities. This tension significantly shapes the school's approach to implementing

DE policies, the agency exercised by teachers within these constraints, and the practical adaptations in their pedagogical practices--a theme that will be developed further as we continue to examine the subjectification of rural teachers under DE. The following sections will provide an in-depth analysis of these observations, offering a detailed review of the implementation of digital education in Yang Guang Primary School.

8.3.3 Mrs Huang: Strategic use of digital tools within performative constraints

Mrs Huang is a CLL teacher who has been teaching at different rural primary schools for about ten years. She graduated from a local university with a major in computer design. She transitioned from the computer design industry to a teaching career due to the more stable job opportunities available in rural education. After passing the common teacher recruitment examination, she worked at a village primary school for a few years before transferring to her current post at a town school. In addition to her teaching responsibilities, she also serves as the Director of the Academic Affairs Office. Mrs Huang's background in computer science underpins her strong commitment to integrating technology into her work, as she expressed:

> "*(using digital technology) It's not really much of a challenge for me. I was originally a computer design professional, often use these technologies, learning new technology applications is relatively easy, like office software is to learn after work, and now also have a basic grasp of all*." (Interview, Mrs Huang)

This proficiency in technology sets Mrs Huang apart, positioning her as a confident user of digital tools. However, the observed lesson revealed both the possibilities and the practical challenges of integrating technology into her teaching practice.

The observed lesson by Mrs Huang was a mock competition lesson in CLL for a Year 2 class, themed “Chinese Cuisine”. It took place in the specifically designated for open classes, as described in Section 8.3.2. A half hour before the class began, Mrs Huang rehearsed the interactive segments with the students, ensuring they were familiar with the questions and activities planned. This reflects the broader performative behaviour under accountability-driven culture discussed in 7.4.2.3, where teachers devote extensive time and effort to refining their lessons for such high-stakes events. However, the technical challenges she faced during the observed lesson, such as difficulties connecting the interactive whiteboard, underscored the fragility of these preparations in the face of practical constraints. She encountered technical difficulties activating the whiteboard equipment in the classroom, as all computer prompts were displayed in English—a challenge for which she appeared unprepared. She called for assistance from a colleague, but he was unable to leave his own commitments in time. The lack of on-site technical support exacerbated the situation, leaving her visibly anxious. So, I stepped in to translate the on-screen instructions and noticed that following the prompts would resolve the issue. Unfortunately, Mrs Huang faced another setback as there was no mouse available in the classroom. I suggested using the keyboard’s Enter key to activate the command, which ultimately resolved the problem.

This incident reflects the challenge faced by rural teachers when applying digital technology in classrooms, as highlighted in the most interviews. Its effective use often depends on reliable infrastructure and technical support—both of which are frequently lacking in rural schools. As Mrs Huang noted in her post-lesson interview, technical issues are a recurring challenge:

"*As you have seen, we encountered a technical issue, but we don't have specialised technical support in our rural schools and usually rely on our school computer teacher. The guy I called, he's not actually a computer teacher, he's the assistant director of the general office, but he also knows how to operate these devices because they're usually kept in his area. So he's very familiar with how to turn these devices on and off. But now that the system is updated, the machine keeps asking which key to press to reboot and as you can see it is in English. He probably didn't know how to handle it after reloading either*. This is why I went to the classroom so early, to avoid such incident happing when the lesson starts." (PC-Interview, Mrs Huang)

This reliance on non-specialised staff for technical support underscores the infrastructural limitations that rural teachers face, even when they are adept at using technology themselves. The initial delay caused by the technical issue also emphasised the vulnerability of lessons to disruptions when technical assistance is unavailable, or systems are not user-friendly. These challenges are a common reality in rural schools, as reflected in the majority of teacher interviews presented in Section 7.4.

Once the classroom was ready for the lesson, several other teachers came into the class and sat at the back of the room, alongside me, to observe, while Mrs Huang conducted the lesson at the front. During the session, the observers held evaluation forms, on which they rated and commented on Mrs Huang's instruction. This highlighted the significant pressure placed on her to deliver a polished performance under the scrutiny of colleagues and evaluators.

Although technological integration played a central role in the observed lesson, its pedagogical impact remained limited, mirroring broader trends in rural classrooms:

> *The lesson began with the display of the theme "Chinese Cuisine" alongside the school's name and the teacher's name. Mrs Huang engaged the students by asking questions about Chinese dishes, shown photos of various common dishes on the screen. The students compete to be the first to name different dishes. (CO-Mrs Huang, CLL)*

This visual introduction captured the students' attention and by asking question to engage students, Mrs Huang set a lively tone for the lesson. As the lesson progressed, Mrs Huang displayed content from the textbooks on the screen and invited students to read all the dish names aloud. She then asked, "*What ingredients are needed for these dishes?*" Several students eagerly participated, naming ingredients aloud. The teacher then presented a cartoon character image of herself shopping for groceries, which added a personal and relatable touch to the lesson, as observed below,

> *The teacher displayed a cartoon image of herself shopping for ingredients. The figure had a cartoon body and a large head clearly visible as a picture of Mrs Huang herself, holding a shopping basket and shaking her head. When the students recognised the cartoon character on the screen as their teacher, it elicited giggles and enthusiastic reactions from the students. They pointed to the screen and whispered something to those around them. Some pictures of ingredients were then presented one by one to the cartoon character. Then she questioned students, what ingredients are needed for these dishes? (CO-Mrs Huang, CLL)*

While the tools successfully engaged the students and brought energy to the classroom, the integration of technology in this instance served more as an enhancement to traditional teaching methods rather than a fundamental shift in pedagogy. This use of digital elements was shared by Mrs Huang, as her said:

> "*I use IT in almost every class, using PowerPoint for lectures and projectors for reviewing homework. Mainly, it's about presenting knowledge points, textbook content, or some images and videos to make the class more engaging and interesting for the students.*" (Interview, Mrs Huang)

Also, it further explained in her post-class interview,

> "*The biggest reason is because younger students especially have very short attention spans. A child can maintain focus for about 5 minutes before becoming distracted. To keep their attention, you can add audio-visuals, animations, and sound to each segment. You saw that cartoon in my presentation, right? It included the photo of me grocery shopping, where I edited my own face into the picture to attract the children's attention. I wanted to make the lesson more relatable by adding my own avatar.*" (PCclass interview, Mrs Huang)

These reflections highlight her desire to move beyond performative teaching to more collaborative and engaging practices. However, the use of digital content focus on visual interest more than a deeper, student-centred approach to learning. Instead, technology functioned as a means to deliver pre-prepared materials and facilitate a structured, teacher-led interaction. Mrs Huang's approach to integrating digital technology was evident in her use of images and animations to make the lesson more interesting as observed. For example, in learning the key knowledge of this lesson - the

Chinese characters and pinyin for the word "tofu" - Mrs Huang has gone back to the lecture and presentation approach.

Mrs Huang chose a tofu dish that is representative of the region and is most common in the daily lives of the students. When discussing the word "tofu (豆腐)", Mrs Huang used images, Chinese characters, and Pinyin to show the students. She queried the students about the raw materials needed to make tofu, selecting two students to respond. Mrs Huang asked, 'Can anyone tell me what tofu is made from?' Two students responded, 'Soybeans'. Then she acknowledged their answers. However, when a student commented that the dish showed by Mrs Huang including oracle bone script resembled other objects, no feedback was provided. Mrs Huang just sent straight to another page of slides, and played a video showing the tofu-making process, which was an adult perspective video of a professional introduction to tofu making. At the end of the video playback, Mrs Huang summarised the knowledge of the lesson - learning the word 'tofu' from Chinese cuisine production. (CO-Mrs Huang, CLL)

This observation highlighted a missed opportunity for deeper engagement and exploration of student insights. This aligns with the primary interviews in section 7.3, which revealed that open classes and teaching competitions often influence teachers' pedagogical decisions. The emphasis on polished presentations and adherence to curriculum standards frequently takes precedence over exploratory and interactive methods. As part of her preparation, For Mrs Huang, while her demonstrated significant effort to prepare this lesson in the following interview, it also reflected the challenges of balancing performative demands with meaningful teaching. As Mrs Huang detailed her effort to overcome limited resources:

"*I went online to 'Baidu' to find some cartoon images. After I find a good one, like when he's buying groceries, I first check the orientation of his face, whether it's to the left, facing forward, or sideways. Then I take a selfie with my phone, immediately send it to my computer via QQ, and insert it into the PPT. There's an option to edit the image in PPT, where I adjust my face to the shape I want, though the fit isn't always perfect. If I could use Photoshop or other photo editing software, I could make the face shape more accurate, but I don't go into that much detail, I just connect my head to the image simply*." (PCclass interview, Mrs Huang)

While these efforts showcased her ingenuity in navigating resource constraints, Mrs Huang acknowledged that they often required considerable time and effort, which may not always align with the expectations of competition judges. More importantly, such efforts often came at the expense of deeper pedagogical innovation. Limited lesson time and the need to cover specific knowledge points constrained her ability to incorporate more interactive or student-centred activities. Reflecting on the lesson, she candidly admitted:

"*First, I missed a big part, which was a big mistake. Another teacher also pointed out to me that my class doesn't look like a typical open class; the teacher is supposed to be fully engaged from start to finish. ... We think this is the current model for our future teaching competitions, trying to keep the language clean and tidy, not to drag on like I do.*" (PCclass interview, Mrs Huang)

This comment reflects a shift in her focus from the content and learning outcomes of her lesson to the surface-level presentation of teaching. Her self-criticism about her usual teaching style coupled with another teacher's comment that her class "*doesn't*

look like a typical open class" highlights the tension between authentic teaching practices and the performative demands of teaching competitions or open lessons. As she explained:

> "*Because this competition had specific requirements; they asked us to choose a lesson from grades 2 to 5. Since it wasn't the grade I normally teach, and since there were already two contestants from fifth grade, I wanted to try something different and didn't research third or fourth grade. I just flipped through a second-grade textbook, found a text that felt right, and went with it*." (PCclass interview, Mrs Huang)

This disconnect between regular teaching and competition requirements exemplifies a broader trend in rural schools, where visible compliance with digital education policies and external assessments often drives teaching practices. Teachers like Mrs Huang are compelled to invest significant time and energy into crafting lessons that meet highstakes criteria, frequently at the expense of authentic, student-centred learning experiences.

Like many rural teachers interviewed, the pursuit of recognition through teaching competitions served as a significant motivator for Mrs Huang to refine and enhance her lessons. This was evident in her reflections on areas for improvement and her aspirations to optimise her lesson for future competitions:

> "*My next step, if I succeed in this competition, is to turn the animation of me buying groceries into a real or animated form, carrying a basket and moving around. ... If allowed, we would divide each table into groups of four, categorise the groceries by method and ingredients, and have them reassemble them. ... I regret not being able to implement this today because it would take time to create that*." (PCclass interview,

Mrs Huang)

Her vision highlights a desire to move beyond traditional teacher-centred approaches to create a more interactive and collaborative learning environment. However, time constraints and the performative demands of teaching competitions limited her ability to implement these ideas during the observed lesson.

At the end, the lesson concluded with a video depicting the tofu-making process, which visually reinforced the subject knowledge. This application was explained in her postclass interview. She stated,

> "*It's actually not very important. It's about the character '腐' in tofu, which implies something rotting or decaying. Tofu itself fits with the character '腐' as it's mashed and then reformed into something new. Also, the character itself is quite difficult. Through the video, the child feels the complexity of the tofu making process and remembers a character that's hard to write, like this.*" (PCclass interview, Mrs Huang)

Her explanation demonstrates thoughtful consideration in selecting digital resources—not only to engage students but also to support their understanding of complex content in a visually accessible way. While she possesses the competence and confidence to engage with digital tools (Passey et al., 2018), her approach underscores a growing trend among rural teachers in this study who view technology as a supplemental tool to aid in content delivery rather than as a transformative medium to deepen student engagement and promote student autonomy. Her participation in teaching competitions further constrains her autonomy. As noted during fieldwork and interviews (see also

7.4.2), the demands of preparing for public lessons and evaluation-based performances diverted time and energy away from classroom innovation. This performative culture—driven by local enactments of national policy such as ITACS—shapes the school's ecology and teacher priorities. Mrs Huang's case thus exemplifies a teacher navigating between individual capacity and structural constraint (Priestley et al., 2015), where daily decisions are filtered through a lens of institutional expectations and personal pedagogical commitments.

8.3.4 Mr Zhao: Navigating between curriculum pressures and unfulfilled technological potential

Mr Zhao completed a five-year programme at a normal university, majoring in Information Technology (IT), and identifies as an early career teacher. After passing the teacher recruitment examination, he joined this primary school, where he currently teaches both IT and mathematics across multiple grade levels. His class stood out among the observed cases, as his IT classroom provided each student with access to a computer. Like Mrs Huang's session, Mr Zhao's observed lesson was also delivered as part of a teaching competition in an open class format. The observation revealed his strong proficiency in using digital technologies and his conscious efforts to integrate these tools into his teaching. Although he encountered some minor difficulties, the lesson nonetheless demonstrated an emerging willingness to explore more interactive and student-centred pedagogical approaches. For example, I observed that,

> *The lesson begins with the teacher standing at the front of the classroom, introducing the day's activity. He uses the whiteboard system to display the slide with lesson title. The screen shows a neatly arranged interface of a drawing software (the "MicrosoftPaint"), with various tools and options clearly visible. The teacher points*

to each tool with an electronic stylus, explaining its function. As he speaks, the screen dynamically changes, showing text descriptions and animated images that demonstrate the capabilities of each tool. For example, the brush tool is highlighted, shows some brush strokes and colors. When finished introduction of all functions, the teacher opens the "MicrosoftPaint" in his computer (the whiteboard screen showing his computer interface) to demonstrate the functions he had just introduced, such as how to draw circles, how to fill in colors and how to delete unwanted content. This took about more than third of a lesson (15 minutes out of 40). (CO-Mr Zhao, IT)

As observation reflects Mr Zhao's significant efforts to incorporate technology into his lesson, by ensuring that students were familiar with the tools and their functions before moving on to practical application. However, the initial one-way output from the teacher, while informative, highlighted an unbalanced pedagogy approach that direct instruction was overly used than interactive learning. As above observation was an IT lesson for year 3 students (aged around 8-9 years old), while Mr Zhao's effort to incorporate technology into his lesson was commendable, it may exceed young students' attention span, leading to potential disengagement. Also, presenting too much information at once may overwhelm young children. They need time to process new concepts, and breaking down the instruction into smaller, manageable segments is more effective.

During the post-class interview, Mr Zhao expressed that his decision to use technology was influenced by structure mandates rather than personal pedagogical choices: "*I use the technology because it's expected of us. The district evaluations focus heavily on*

whether we're integrating digital tools, so it's something I have to demonstrate, especially in public lessons" (Int-Mr Zhao).

In this instructional approach, the digital contents (the drawing software and step-bystep guide) were used in a controlled manner, with the teacher directing every aspect of the lesson. In his post-class interview, Mr Zhao explained his decision on such approach, "*This was an open class for selecting teachers for the upcoming teaching competition in the county. To introduce the class, I started off by showing a computer drawing of a panda on a slide to let the students know that our learning objective for this lesson was to learn to draw a panda using the computer's drawing software. Then came the knowledge explanation, I had to cover all the basic functions.*" (PC-Interview-Mr Zhao)

Mr Zhao mentioned that the lesson was designed for teaching competition. This context is crucial because it sheds light on the external pressures that shape how teachers plan and execute their lessons. Moreover, the pressure of open class expectations significantly influenced both Mrs Huang and Mr Zhao's pedagogical choices. While both teachers demonstrated competence in using digital tools, their focus on delivering structured and comprehensive presentations for competitions limited the opportunity for more interactive and student-centered learning experiences. This echoes the effects of the policy discussed in **chapter 7.4**.

In fact, with a background in information technology, Mr Zhao has an extent level of competence in handling digital technology. Mr Zhao described how he prepare the lesson, "*Before a class begins, I might start with some animations, so I need to prepare*

these materials in advance. During the teaching process, I might use some images and show these animations to the students. I rarely give digital feedback during class. I use IT in almost every class, using PowerPoint for lectures and projectors for reviewing homework. Mainly, it's about presenting knowledge points, textbook content, or some images and videos to make the class more engaging and interesting for the students" (Inter, Mr Zhao). Moreover, he mentioned the use of external resources from educational websites and national platforms for teaching materials, which shows his capability to adapt and utilise tools to meet educational needs. However, he has low level of confidence in creating digital resources, "*I rarely produce them myself, as I can't achieve a high level of making digital resources. I can only say I can edit videos, using simple editing apps on my phone or video editing tools on the computer*".

Despite his IT background, he shows no significant enthusiasm for pursuing advanced applications or innovations in educational technology. As he recognised, "*In fact, I could have invited the students to try out the different functions while I was explaining them or let them explore on their own for a while.*" (PC-Interview-Mr Zhao). He explained further, "*But the lesson time is not enough, I have to reflect the knowledge points and finish the lecture within the time limit*." (PC-Interview-Mr Zhao). His recognition of the potential for student interaction and exploration, even though it was not implemented due to time constraints, indicated a progressive mindset towards teaching with technology. Also, it reveals the tension between adhering to traditional education standards and embracing more interactive, student-centered methods.

The later approach, albeit limited, was observed in Mr Zhao's classroom showing the potential of changes:

Following the introduction, the teacher displayed a panda image on the screen with a task for the students: draw a panda by using the introduced functions in "MicrosoftPaint". Students are allowed to explore the drawing tools independently and use different colors and shapes to create themselves panda image. During the time that students were using the computer to draw Panda, the teacher walks around to observe the students' work, offering individual assistance and feedback. For example, the teacher randomly walked over to a student, looked at the student's drawing for a few seconds, then told this student as him pointed a place on the screen could use the eraser tool to remove the unwanted parts. Then the student following the guidance from the teacher removed a shape on the screen. (CO-Mr Zhao, IT)

The example interaction observed was from a student who sit closet to me, so I can hear and see clearly what the interaction is. A few other interactions were at the front of the classroom and I couldn't catch the details. But I could see that two were initiated by Mr Zhao, like this student, and two were students raising their hands for the teacher's support. The individual work of students observed illustrates a more flexible and permeable boundary between guided instruction and independent learning process. However, this shift came when the courses were designed by teachers to provide opportunity to students with hands-on practice, and most students had accessibility, as this was an IT room with sufficient computers for IT lesson. The reality in most classes was that conditions are not sufficient for students to access digital devices.

Teachers, constrained by these limited resources, often do not design lessons that incorporate technology in meaningful or interactive ways. This issue became apparent

in many classroom observations and in teacher interviews both in Yang Guang and Xing Long secondary schools showing in this chapter. For example,

Mrs Zhang pointed out the reason, "*One reason is the limited equipment; we only have one electronic drawing tablet for dozens of students in a class, so who gets to use it*?".

Many educators acknowledged that, although digital tools were available, they were not consistently employed to enhance student engagement or promote interaction. In Mr Zhao's class, while students had more space for self-exploration during parts of the lesson, he was observed pacing the aisles of a large classroom, supervising dozens of pupils with limited interaction. Even in a well-equipped setting, meaningful teacherstudent dialogue remained minimal.

Mr Zhao's approach to integrating technology reflects an ongoing struggle between tradition and innovation, and between the ideal and the reality of DE in classroom practice. He recognised the potential for more interactive use of technology but cited time constraints and the pressure to cover mandated knowledge points as reasons for not facilitating more student-led exploration. This highlights a central tension between the demands of curriculum coverage and the opportunities for deeper student engagement through technology.

Despite his background in information technology, Mr Zhao showed limited interest in pushing the boundaries of DE practices. In his interview (see Section 7.4.1), he admitted to lacking a long-term educational vision, "*It's (teaching) just a job for me; I don't really have any particular vision*". This comment represents a form of passive agency, where the teacher is not resistant to digital reform but also not actively driving it. As such, he

does not actively seek out innovative teaching strategies or advocate for pedagogical change, but instead focuses on fulfilling institutional expectations. Moreover, Mr Zhao's case underscores a key concern in the development of digital agency (Passey et al., 2018). Although Mr Zhao possesses the competence, his confidence and accountability appear underdeveloped—possibly due to his status as a relatively new teacher with limited institutional authority. His story highlights the importance of fostering not only skills but also a professional identity that encourages purpose, confidence, and forward-looking engagement with DE.

8.3.5 Mrs Zhang: Replicating tradition through technology in a climate of waning motivation

Mrs Zhang, who has 25 years of teaching experience, graduated from a local normal college with a degree in general education Since graduating, she has been teaching at the same rural primary school and has taught various subjects, including moral education, language arts, and art. As indicated in Mrs Zhang's initial interview (Section 7.3), she adopts a pragmatic approach to technology and pedagogy, focusing on tools that support her established teaching methods without creating additional complexity. In the classroom observation, this pragmatic approach was evident. For example, *The teacher uses the whiteboard to display PowerPoint slides that blend text with a few images. The primary function of these slides was to present textbook content in a digital format (I can see the same math questions on the textbook in front of the student who closest to me). The digital content displayed primarily consists of text and occasional images that animate to illustrate mathematical questions. While the teacher posing questions related to the images shown, the overall interaction remains limited to visual presentations without further explorative or interactive technological use. For example,*

when the teacher presented text questions and pictures related to the questions, the classroom fell silent. The teacher stood at the lectern and waited for a few seconds then shook his head followed by showing a slide of the answer. (CO-Mrs Zhang, Math)

This approach relied heavily on teacher-led delivery, with students following along—mirroring a traditional lecture-based pedagogy. The technology, in this case, served more as a tool for visual reinforcement rather than transforming the instructional strategy. In the post-class interview, Mrs Zhang reflected on her approach to using technology, and her modesty and pragmatism became even more apparent. She stated,

> "*Honestly, my ability to use technology is quite limited. But I think the use of PPT (Power-Point) already enough for my lessons. In our math lessons, it's mostly about showing some questions and inserting some pictures to attract the students' attention and improves their interest. It also saves a lot of time because I don't have to write the instructions on the blackboard. However, there is no need to use complicated digital resources.*" (PC-Interview-Mrs Zhang)

Moreover, the technological presentation was in a highly structured manner reflected a stronger framing (F+), where the teachers were maintained control over the use of digital tools, directing how and when they are used. For example:

> *The lesson began with the teacher writing the word "multiplication" on the chalkboard, signaling the start of a review session. She asked the students if they remembered the multiplication algorithm they had learned in the previous lesson. The classroom was filled with sparse and hesitant voices as students attempted to recall the steps. Without engaging in any feedback or reflective discussion, the teacher immediately clicked on the screen, revealing the answer. (CO-Mrs Zhang, Math)*

Indeed, there was limited information gained from Mrs Zhang, as she was not very enthusiastic about discussing technology-related topics and same felling in her teaching. At the end of her classroom observation, I noticed she was deeply engrossed in

instruction:

> *The teacher strictly following the textbook content and the questions displayed on the slides. Her focus was on delivering the material as prescribed, with little deviation or engagement with the students beyond the basic instructional content. Whether the students in the back row were sleeping or chatting, she never paused to maintain order. She remained at the front of the classroom the entire time and never walked to the back to engage with students. The slides she used were containing only the mathematical methods she was explaining, without any additional interactive or visual elements. (CO-Mrs Zhang, Math)*

This behavior was explained during the post-class interview. She said, "*I'm about to retire, so I'll leave these digital things to the younger teachers. I just picked one PPT from the Xiwo system. Although the system comes with a limited choice of courseware, it's good enough for me.*" When I asked why she adopted such teaching method, she simply responded, *"This lesson I already thought so many times, and I've been teaching this way for decades and haven't found anything wrong with it"*. This highlighted her resistance to change and her satisfaction with traditional teaching methods which shaped her approach to teaching and her views on technology integration in the classroom.

Mrs Zhang's case highlights a significant challenge in the implementation of DE in rural China. There is a lack of, or fading, enthusiasm for teaching (as expressed by other teachers in Chapter 8), as well as limited engagement with digital tools among experienced teachers such as Mrs Zhang and Mr Chen. While not resistant to technology, Mrs Zhang's use of it was instrumentalist, lacking the transformative intent associated with digital agency. The focus remained on teacher-led presentations and information delivery, with limited opportunities for student interaction or engagement. As Freire (2018) reminds us, education that relies solely on transmission reinforces the "banking model" of learning, in which students are passive recipients of knowledge. In this approach, technology is used primarily as a tool for information delivery rather than as a means to foster critical engagement and autonomous learning. Mrs Zhang's case thus highlights the limits of digital reform when teacher agency is shaped more by habit and practicality than by critical engagement or aspirational vision.

8.4 Comparative Insights from Two Schools

Building on the findings from Xing Long Secondary and Yang Guang Primary, this section uses a comparative lens to examine how teacher agency is enacted, constrained, and negotiated within their institutional ecologies. Despite their differing levels in the education system, both schools share structurally characterised ecologies defined by hierarchical governance, limited financial autonomy, and a compliance-oriented culture. These features reflect broader systemic issues in China's rural education landscape, where centralised control, uneven resource distribution, and performance metrics dominate school governance (Howlett, 2021). Both Xing Long and Yang Guang rely heavily on provincial and county-level funding, lack in-house technical capacity, and face rigid top-down implementation of DE policies. Such structural constraints

contribute to a performative use of digital tools, where ICT is often employed more for visibility and alignment with policy expectations than for pedagogical transformation.

Across both schools, teacher agency was shaped by three key factors: individual digital competence, career stage, and perceived professional purpose. Teachers with higher digital literacy, such as Mr. Feng at Xing Long, demonstrated greater capacity to support their peers and adapt DE policies pragmatically. However, even among technically capable teachers like Mr. Zhao, enthusiasm for innovation was limited by time pressures, weak professional vision, and institutional indifference. These dynamics resonate with Priestley et al. (2015), who stress that agency is relational and contextually mediated, not merely a matter of personal skill.

In Yang Guang, Miss He's adaptive use of technology exemplified agentic responses grounded in student-centred values, while Mrs. Zhang's traditional, teacher-led approach highlighted how veteran teachers often default to familiar methods. These cases illustrate the spectrum of engagement in DE, from compliant to creative, and the degree to which pedagogical choices are bounded by institutional expectations. Miss Hu's experience as a multi-subject, early-career teacher further illustrated the negotiation between professional aspiration and structural constraint. Her selective integration of multimedia tools demonstrated intent to engage learners but was hampered by limited training and excessive workloads. Similarly, Mrs. Huang's digital use—strategically designed to meet competition requirements—highlighted how performative pressures can displace pedagogical depth.

Notable differences also emerged between primary and secondary contexts. In Xing Long, DE was tightly aligned with exam preparation, framing technology as a means of improving test outcomes. This narrowed the scope of agency, as teachers prioritised efficiency and discipline. Conversely, in Yang Guang, the absence of high stakes testing allowed for greater pedagogical latitude, but this freedom was undercut by diminished teacher motivation and weaker parental expectations. This dichotomy reflects how structural stratification—linked to reputational hierarchies and urban-rural divides—reproduces educational inequalities, even in compulsory education (Tan & Chua, 2015; Howlett, 2021).

Family background and student demographics also shaped teacher agency in distinct ways. Both schools served large populations of left-behind children, but the age difference created divergent responsibilities. In Yang Guang, teachers assumed broader pastoral roles, often substituting for absent family support. Mrs. Liu and Mrs. Huang described spending significant time on hygiene and behavioural issues, underscoring the emotional labour embedded in rural teaching. These socio-emotional dimensions, largely invisible in policy narratives, complicate the implementation of DE reforms and affect how teachers perceive their roles.

Together, these case studies highlight both the systemic constraints and situated adaptations that characterise rural teachers' engagement with technology and distinct patterns of teacher agency.

8.5 Summary

This chapter examined teacher agency in the context of digital education reform across two rural schools—Yang Guang Primary and Xing Long Secondary—through an ecological lens. By analysing school structures, cultures, and classroom practices of seven teachers, it uncovered the complex interplay between systemic constraints and individual agency in the implementation of DE. While some teachers displayed creative agency within constraints, others complied passively, shaped by limited autonomy, performative policy pressures, and systemic inequalities. These findings reaffirm the need to consider teacher agency not as a static trait but as a dynamic process embedded within broader educational ecologies (Priestley et al., 2015). These insights lay the foundation for Chapter 9, which further theorises these dynamics and explores how rural teachers mediate between reform ideals and classroom realities.

9.Discussion & Conclusion

9.1 Introduction and Summary of Key Findings

In this chapter, I draw on the broader findings presented in Chapters 7 and 8, which trace China's DE ecology from national policy framings to school-level enactment, and bring these into dialogue with the fieldwork findings. It answers the below three main research questions:

RQ1: How is de framed in Chinese educational policies, and what are the implications for educational practices?

RQ2: How is DE implemented in rural China?

RQ3: How is DE reform represented in national policy, and what structural and discursive conditions does this create for teacher agency in rural schools?

In answering these questions, I engage with the conceptual framework outlined in Chapter 6, which integrates the ecological model of teacher agency (Priestley et al., 2015) with the concept of digital agency (Passey et al., 2018). This framework is applied to empirical data collected through national policy analysis, school-level documents, classroom observations, and teacher interviews.

The findings across the three research questions reveal persistent tensions between national DE reform aspirations and the lived realities of rural teachers. These tensions are shaped by a combination of policy discourse, institutional conditions, and teachers' individual capacities. While DE is promoted as a vehicle for equity and innovation, its enactment in rural schools is often characterised by symbolic engagement, structural limitations, and constrained pedagogical transformation. In the sections that follow, I present a synthesis of key findings organised around the three research questions. Each subsection draws on the empirical evidence to critically reflect on the broader themes that emerged from the study.

9.1.1 The politic environment of DE in China

I begin this discussion with how national DE policies construct the "problem" of rural education and how such framings inform the roles expected of teachers. It draws on the findings presented in Chapter 7, which critically examined the "problem" and assumptions within national DE policy texts. This enables a critical understanding of how broader political and structural forces shape the educational ecosystems in which

rural teachers operate. In particular, my analysis highlights how policy—understood as a form of power (Priestley et al., 2015)—not only defines reform priorities but actively structures the spaces in which rural teachers can act, respond, or resist.

Within this framing, digital infrastructure and teacher capacity are identified as key drivers of educational modernisation. However, this narrative is underpinned by technocratic and ideological assumptions that position technology as inherently progressive and transformative, while simultaneously casting teachers as both enablers and barriers to reform. China's DE reform agenda is further shaped by a hybrid governance model that blends global EdTech discourses, neoliberal forms of accountability, and strong centralised state control (Li & Christoph, 2024). This results in a reform vision that privileges standardisation, visibility, and data-driven performance, often at the expense of pedagogical depth, contextual responsiveness, and teacher autonomy. The overarching political environment, therefore, constructs a policy ecosystem in which the symbolic presence of digital technology is equated with progress—obscuring the complex realities of local implementation and the everyday work of rural teachers. It is within this policy-saturated, institutionally bounded space that teacher agency unfolded in highly situated and differentiated ways, shaped by the interplay of systemic pressures and local realities.

9.1.2 The DE implementation in rural schools

Despite the ambitious rhetoric surrounding digital reform, this study found that the implementation of DE in rural schools was largely symbolic, fragmented, and performative. Teachers in this study described engaging with digital tools primarily to demonstrate policy compliance, such as satisfying inspection targets or fulfilling

administrative reporting (Chapter 7). The realities of implementation were shaped by a combination of unstable infrastructure, limited training, and deeply ingrained examoriented educational cultures, which constrained both innovation and deeper engagement with digital pedagogies. While digital elements—particularly governmentdistributed tools such as the XiWo interactive whiteboard—were visibly present and routinely used in classrooms, their function was largely limited to presentation purposes. As observed in classroom practice (Chapter 8), these tools were deployed mainly as presentation devices to display slides, while the underlying pedagogical model remained teacher-centred and didactic. This mode of implementation falls significantly short of national policy expectations for digitally mediated pedagogical innovation (MoE, 2016; 2018). There was little evidence of the interactive, student-led approaches promoted in these policies or supported by international research on technologyenhanced learning aimed at improving student engagement, collaboration, and autonomy (Ertmer & Ottenbreit-Leftwich, 2010; OECD, 2021).

In this context, the visibility of technology was often mistaken for its meaningful use. The symbolic value of digital infrastructure—its ability to signal modernisation and alignment with national priorities—appeared to outweigh its pedagogical function. Reform, in effect, became performative: digital tools were present, but their potential remained under-utilised or misaligned with classroom realities. These findings highlight a critical disconnect between policy ambition and practice, suggesting that without greater coherence, leadership support, and contextual sensitivity, digital reform in rural schools risks reproducing existing inequalities under the guise of modernisation.

9.1.3 Teacher agency in the context of DE reform in rural China

Building on the ecological approach to teacher agency (Priestley et al., 2015), I then analysed how the iterational, projective, and practical-evaluative dimensions of agency shaped teachers' responses to DE reform. In doing so, I also draw on the concept of digital agency (Passey et al., 2018), which has been incorporated into the analytical framework to better capture the technology-specific capacities and conditions influencing teachers' actions. As explained in detail in Section 6.3, digital agency offers a complementary lens that helps illuminate how digital competence, confidence, and accountability mediate the enactment of agency in digitally driven reform contexts.

Through this integrated lens, I identified multiple manifestations of teacher agency in the reform of DE in rural China and how digital agency conditions their choices. One of the central findings was that teacher agency manifested most visibly through the practical-evaluative dimension. Teachers continually assessed digital expectations against local realities—balancing policy mandates, performance indicators, infrastructure limitations, and personal workload. Many exercised bounded innovation or strategic compliance, adopting digital tools to a degree that would meet institutional demands while avoiding disruption or failure. For example, the data indicate that many teachers made pragmatic adaptations in response to overlapping difficulties such as unstable connectivity or insufficient training. These adaptations often involved reverting to familiar, non-digital practices in order to protect instructional flow and minimise classroom disruption. Such decisions, while cautious, reflected practicalevaluative agency, grounded in a cost–benefit assessment of effort, risk, and return.

In some cases, teachers' actions revealed more subtle or covert responses to the tensions created by top-down digital reform. For instance, many teachers engaged with mandated DE platforms only to the extent necessary to meet performance checks, while continuing to rely on traditional practices in their actual classroom teaching. These forms of strategic compliance often carried ambiguous implications. While they allowed teachers to preserve their pedagogical judgment, they also served to maintain surface-level engagement with reform, rather than deeper pedagogical change. In a few instances, these covert actions were more clearly in tension with reform goals—for example, the ongoing reliance on rigid, teacher-centred instruction despite policy rhetoric promoting student-centred digital learning.

The findings also show that agency was sometimes achieved collectively, such as when teachers negotiated shared strategies for dealing with unreliable platforms or divided labour around digital lesson planning. However, in other cases, agency was exercised more individually. For instance, one teacher took the initiative to adapt multimedia materials to suit the local curriculum, while another led informal peer training sessions to support digital tool use. A small number of teachers adopted more innovative approaches, such as experimenting with hybrid models that combined student-centred and teacher-led instruction, supported by selective digital integration, or drawing on local resources to enrich digital content. There were also instances where teachers exercised agency through inaction or selective withdrawal—choosing not to engage with digital tools or reforms when the perceived costs outweighed the potential benefits.

These examples illustrate how teacher agency, while often framed as discrete in analytical terms, is enacted in practice through a dynamic negotiation between multiple influences. Although Section 9.4 discusses the three dimensions of teacher agency separately, they inevitably overlap, operating simultaneously and interactively within teachers' everyday practices (Priestley et al., 2015). Within and across these dimensions, the interplay between digital agency and teacher agency was consistently evident.

Teachers' digital competence and confidence shaped the scope of options they perceived as viable when responding to reform expectations. Teachers' digital competence and confidence shaped what they perceived as viable responses to reform expectations. Those with higher confidence tended to experiment and adapt digital tools to their teaching needs, while those with limited competence often relied on mandated or pre-modelled tasks. This directly affected their capacity to act reflectively and flexibly in day-to-day teaching. Digital accountability emerged as the most underdeveloped aspect of digital agency. While a small number of teachers expressed forward-looking aspirations tied to meaningful digital engagement (e.g., designing blended learning experiences or promoting digital literacy), the majority did not demonstrate such intentions. In these cases, digital accountability was either externally imposed (e.g. through performance targets) or absent altogether. This limited the development of longer-term, value-driven professional goals related to DE.

Finally, the findings indicated that digital agency intersected with teachers' existing beliefs, habits, and histories. Teachers who had not encountered digital tools during their own education or early professional experiences were often hesitant to incorporate

them into their teaching, regardless of current policy pressures. Their low digital agency reinforced established routines and contributed to the reproduction of traditional, teacher-centred pedagogies—highlighting how past experiences continued to constrain present choices.

Overall, the findings demonstrate that teacher agency is not a fixed capacity but a contextually situated response to overlapping demands. It operates within a constrained policy ecology shaped by reform discourse, material conditions, and institutional culture. Where agency is enabled—through trust, training, time, and autonomy—teachers can become co-constructors of meaningful digital reform. These findings align with Biesta et al.'s (2015) view of agency as a context-responsive capacity, rather than an individual trait.

9.2 RQ1: How is DE reform represented in national policy, and what structural and discursive conditions does this create for teacher agency in rural schools?

Addressing RQ1, it examines how national policies represent DE, and what structural and discursive conditions these representations create for rural teacher agency. The findings presented in Chapter 7 demonstrate that DE in China is framed as a comprehensive solution to persistent rural-urban educational inequalities, with digital infrastructure and teacher capacity positioned as key levers of modernisation. The discussion is divided into two parts. Section 9.2.1 explores how DE is framed as a solution to rural underdevelopment, underpinned by particular political and ideological assumptions, reflecting what Rahm (2023) terms a form of socio-technical imaginary. It also identifies the governance model -- what the literature increasingly describes as a

hybrid form of governance (Li & Christoph, 2024) -- that combines global neoliberal features with strong centralised ideological control. Section 9.2.2 then turns to the discursive construction of teachers within this policy landscape. It considers how policies simultaneously position teachers as both enablers and impediments to reform, and how these representations shape their perceived roles, responsibilities, and the conditions under which they can exercise professional agency.

9.2.1 Framing the problem: technological deficit and hybrid governance in China's DE reform

As demonstrated in Chapter 7, national policy documents, particularly the Education Informatisation 2.0 Action Plan (MoE, 2018), constructed the problem of rural education primarily as a matter of technological underdevelopment. Rural schools are consistently portrayed as lacking the necessary digital infrastructure, modern teaching tools, and teacher competence to meet the demands of the digital era. This framing reflects a form of technological determinism, where improved access to devices and platforms is assumed to directly enhance educational equity and quality. Within this vision, rural teachers are not seen as agents of reform but as conduits for delivering technological change.

Yet, this narrow framing carries important implications. By reducing complex educational challenges to issues of access and tool adoption, DE policy risks reinforcing surface-level compliance rather than enabling the deep pedagogical shifts it claims to promote. This technocratic view sidelines the social, cultural, and professional support systems that are essential for meaningful innovation—particularly in rural settings. As discussed in Chapters 2 and 3, this logic is deeply embedded in China's broader political

and governance structures, which favour top-down, target-driven policy implementation over consultative or contextualised approaches.

A key finding from my policy analysis (see Sections 7.2.2 and 7.2.3) was the emergence of a hybrid governance model within China's DE reform—one that blends elements of global neoliberalism with strong centralised control. This finding aligns with prior literature detailed in Section 3.6.1 and recent scholarship by Li and Christoph (2024), who characterise China's digital governance as both market-oriented and state-led. On the one hand, the reforms reflect global education trends associated with neoliberal governance: decentralisation, performativity, standardisation, and an emphasis on measurable outcomes (Ball, 2012; Verger et al., 2016). Targets such as teacher digital competency standards under ITAC 2.0 (MoE, 2019) exemplify this logic, delegating responsibility for implementation to provinces and schools, while holding them accountable for outputs. As Clarke and Ozga (2011) note, this resembles the global shift toward "new public management" in education—where performance metrics and audit cultures dominate policy enactment.

On the other hand, China's DE reform diverges from typical neoliberal models by retaining strong ideological and structural centralisation. The state maintains tight control over curricular content, technological platforms, and the alignment of educational initiatives with national goals. Policies frequently frame DE not only as a means of reform, but as a strategic instrument of national development—linked to goals such as constructing a "learning society" or enhancing China's global competitiveness in the knowledge economy (The State Council of China, 2010; MoE, 2018). This is

evident in the state's push for "smart classrooms" and AI-assisted personalised learning, as well as its efforts to embed big data and cloud computing into education governance.

These ambitions reflect an uptake of global EdTech discourses, including 21st-century skills, digital personalisation, and platform-based learning. However, as my findings and those of Li and Christoph (2024) show, such ideas are selectively appropriated and tightly localised within China's centralised political system. The discourse of "smart education" is not simply borrowed, but repurposed to align with national ideological imperatives. While policies promote advanced tools, these are centrally managed and standardised—leaving limited space for teacher input or locally adapted pedagogical experimentation.

Underlying these discourses is a sociotechnical imaginary in which "good education" is envisioned as high-tech, data-driven, and globally competitive (Rahm, 2023). This vision imagines rural underdevelopment primarily through the lens of digital access and usage (Van Dijk, 2005), thereby obscuring deeper issues of professional development, contextual relevance, and school culture. The assumption that digital tools will automatically equalise educational opportunities is rarely problematised in policy texts, and little attention is given to how such tools are actually used or made meaningful by teachers in practice.

However, the discourse of digitalisation has been internalised by local education departments and schools, resulting in widespread investment in digital infrastructure, even when such investments have limited pedagogical utility. As shown in Chapter 8, Yang Guang Primary School's installation of electronic display boards and Xing Long Secondary School's purchase of advanced recording equipment served primarily to

signal institutional alignment with national reform goals rather than enhance everyday teaching and learning. These findings resonate with Selwyn's (2011) critique of international DE initiatives, where the presence of technology is often conflated with educational progress, regardless of its integration into classroom practice.

In this political ecology, the state's aspirations for digitally transformed, globally competitive education create both opportunities and constraints for rural teacher agency. While policies aim to modernise the system through innovation and equity, they simultaneously impose narrow pathways for engagement, often driven by compliance, performance indicators, and rigid implementation schedules. These structural and discursive conditions shape how teachers perceive their roles, what choices they feel they can make, and how they ultimately engage with reform. The following section (9.2.2) explores this dynamic in more depth by examining how teachers are constructed within policy discourse and what this means for their professional autonomy and agency in digital reform.

9.2.2 Constructing teacher's role: policy expectations

Building on the policy framings discussed above, another key strand in China's DE policy discourse is the construction of the teacher—not as a policy designer or collaborator, but as the subject of reform and the instrument of its implementation. As analysed in Chapter 8, national policies such as the Ten-Year Development Plan for ICT in Education (2011–2020) and the IT Application Competency Standards for Teachers (ITAC 2.0) (MoE, 2019) imagine an ideal teacher who is digitally skilled, innovative, and capable of realigning classroom practices with national goals for smart, studentcentred learning. This vision aligns with globalised discourses of constructivist,

student-centred learning, which promote teacher facilitation over knowledge transmission (Baeten et al., 2010; Struyven et al., 2010). As discussed in Chapter 3.5.4, these ideas challenge China's traditional teacher-centred pedagogical norms rooted in Confucian philosophy, where teachers are regarded as moral authorities who propagate the doctrine, impart knowledge, and resolve doubts (Tan, 2015; Li, 2012). DE policy expectations thus imagine a future-oriented professional identity: the teacher as an innovative, digitally literate facilitator of learning.

However, these discursive ideals are embedded within a performance-oriented framework, where expectations of creativity coexist with tightly defined metrics for digital tool usage. As highlighted in Section 7.2.4, these frameworks rarely provide clear guidance on localising such standards to rural schools, nor do they address the infrastructural, cultural, or pedagogical barriers teachers must navigate to realise them. Schools are often required to report the number of digitally delivered lessons, and teachers are evaluated on their use of DE platforms. Teachers are encouraged to integrate digital tools into their lessons, but this encouragement is structured through centralised criteria, rigid standards, and externally imposed timelines. As visible in both schools: in Xing Long, Mr Feng and Mr Zhao were tasked with recording and uploading lessons weekly; in Yang Guang, Mrs Huang prepared elaborate multimedia lessons for evaluation by county officials. These expectations created a logic of strategic compliance, where teachers perform policy-aligned behaviours to meet standards, even if pedagogical change remains superficial (Wu, 2018; Wang, 2009).

At the same time, policy documents such as The Rural Teachers Support Plan (20152020) (The State Council of China, 2015) routinely frame rural teachers as

underskilled and in need of intensive re-professionalisation. Digital competence is explicitly tied to career progression, and teachers are expected to meet usage benchmarks and technical standards monitored through inspections and reporting systems. Within this logic, teachers are expected to attend digital training, adopt national platforms, and demonstrate integration in their teaching. Yet, the ITAC 2.0 framework and similar documents provide little space for teachers to adapt tools to local needs or challenge prescriptive content. At the same time, DE policies often rely on global discourses of lifelong learning and professional autonomy (OECD, 2005; Ertmer & OttenbreitLeftwich, 2010), portraying teachers as self-motivated actors responsible for their own digital upskilling. However, within China's highly centralised governance structure, this form of autonomy is conditional and tightly bounded.

This dual discourse empowerment through reform and discipline through compliance, leaves rural teachers in a paradoxical position. They are expected to self-improve and innovate, but within rigidly scripted parameters, limited autonomy, and infrastructural constraints. As the case studies in Chapter 8 shown, even highly capable teachers like Mr Feng tend to adopt efficiency-oriented strategies, not because they reject innovation, but because they lack time, support, or incentives to do otherwise (Wu et al., 2022; Sawyer & Myers, 2018). In this way, the burden of reform is individualised, while structural conditions remain unchanged. As Li and Christoph (2024) argue, such policy design conflates professional responsibility with personal obligation, deflecting attention from systemic barriers.

Taken together, this section has shown that China's national DE policy constructs rural education as a technical problem solvable through digital means and positions teachers

as both the agents and subjects of reform. The resulting conditions characterised by technocratic visions, hybrid governance, and performative accountability, narrow the space for meaningful teacher agency. These policies impose both aspirations (to be innovative, skilled, student-centred) and constraints (through metrics, inspections, and platform mandates), often without addressing the local ecologies in which teachers operate. These discursive and structural conditions characterised by centralised control, aspirational teacher identities, and output-focused implementation, form part of the ecological architecture within which rural teachers attempt to exercise agency. The next Section 9.3 will build on this by examining how these macro-level policy frameworks are enacted and interpreted within local school contexts, offering further insight into the institutional dynamics that condition rural teachers' engagement with digital reform.

9.3 RQ2: How is DE Implemented in Rural China?

This section addresses RQ2, examining how DE is implemented in rural China and how rural teachers experience and respond to DE reform in practice. It focuses on the institution level, including school ecologies, institutional logics and the lived realities of teachers presented in Chapters 7 and 8. The findings reveal while national DE policies promote a vision of integrated, student-centred digital transformation, what emerges on the ground is a fragmented and often performative implementation.

Teachers' experiences highlight a complex interplay between policy expectations, institutional demands, limited infrastructural support, and professional autonomy. By examining two case study schools through an ecological lens (Priestley et al, 2015), I found both schools demonstrated relatively coherent internal coordination, but they also encountered external tensions with district authorities, technology providers, and policy

directives. Both schools continue to face critical deficits, such as a lack of technical support, limited localised instructional materials, and underdeveloped digital cultures.

Culturally, a strong emphasis on exam performance, traditional pedagogical norms, and conflicting expectations from leadership and district authorities made it difficult to prioritise innovation. Although the schools adopted certain policy requirements, such as digital lesson planning and equipment usage, they largely resisted deeper reforms associated with pedagogical change, such as promoting creative, student-led learning or implementing the automatic promotion policy. Teacher interviews revealed varied capacities and dispositions in engaging with the reform. Their biographical profiles reflect unequal levels of qualification, digital experience, and pedagogical training. Some drew on their personal strengths to adapt to the reform in contextually appropriate ways, while others struggled to make meaningful use of digital tools. In many cases, teachers deployed surface-level digital practices to meet compliance demands, rather than to transform their teaching.

9.3.1 Fragmented governance and symbolic implementation: digital reform as sociotechnical imaginary

Drawing on interview and observation data, the findings reveal a significant disconnect between national policy visions and the lived realities of rural schools, with implementation often taking the form of symbolic engagement rather than meaningful pedagogical transformation. While policy initiatives such as the EI 2.0 (MoE, 2018) articulate a vision of pedagogical innovation, equity, and transformation through technology, the ways these reforms are experienced and enacted by rural teachers remain constrained, inconsistent, and often symbolic in nature. This disjuncture echoes

global patterns where national policy rhetoric outpaces the capacity of schools and teachers to deliver pedagogical change (Selwyn, 2010; Lewin & McNicol, 2014).

The two schools in this study—Xing Long Secondary and Yang Guang Primary—demonstrate how DE policies are translated into contextually contingent practices that often prioritise institutional performance over pedagogical innovation. Both schools showed internal coherence in coordinating digital initiatives, yet external factors—such as fragmented district mandates, lack of localised content, and weak technical support—limited deeper engagement with reform. These dynamics reflect China's decentralised but centrally directed governance model, resulting in reform that is performative and often superficial (Zhong et al., 2017; Han & Ye, 2017).

Teachers in this study described encountering overlapping mandates, vague directives, and shifting priorities, resulting in a fragmented enactment of reform. Rather than experiencing DE as an integrated initiative, teachers frequently reported that policies arrived as a series of compliance tasks, such as uploading lesson plans, completing online training, or participating in digital competitions. The symbolic use of technology, such as displaying digital equipment during inspections or staging open classes with PowerPoint-heavy content was widespread. For instance, Mr Zhao's ICT lesson and Yang Guang's digital displays reflected performative strategies used to meet district evaluation criteria. This mirrors Ball et al.'s (2012) theory of policy enactment, where reform becomes ritualised through visible activities rather than meaningful change.

This tendency aligns with Rahm's (2023) notion of a sociotechnical imaginary: a collective vision where digital tools symbolise institutional modernity and national

progress. Both schools invested in equipment (e.g., recording systems, smart boards) to align with this vision, but without corresponding pedagogical integration. Teachers' narratives suggest that DE reforms are perceived as mandates to be managed, not coconstructed—a trend observed globally in contexts where EdTech policies are centralised but classroom realities remain under-supported (Selwyn, 2011; Hinostroza et al., 2016). The fragmented enactment of DE also reflects broader global critiques of EdTech reform as overly rationalist and instrumental (Perrotta, 2013; Cuban et al., 2001). Despite policy emphasis on inquiry-based and student-centred learning, teachers predominantly used digital tools for lesson delivery rather than interactive learning. As teachers used PPT slides to reinforce textbook content and exam preparation, reinforcing didactic traditions rather than fostering constructivist pedagogy (Weston & Bain, 2010; Vivitsou, 2019).

The findings also illustrate how DE policy diffusion in China is mediated by economic and institutional hierarchies. Teachers reported relying heavily on centrally produced or urban-generated digital content, which was often disconnected from their students' local experiences. This top-down model reinforces dependency and constrains professional autonomy, echoing concerns in the international literature about the overstandardisation of DE and its negative impact on creative, student-centred pedagogy

(Hinostroza et al., 2016; Warschauer, 2000). Moreover, the dependence on externally produced DERs, particularly urban-sourced or state-curated content, was pronounced across both schools. As noted by Wu et al. (2022), such dependency limits teacher agency and reinforces cultural asymmetries in DE adoption. Teachers like Mr Feng acknowledged the convenience of ready-made resources, but this efficiency came at the

expense of creativity and contextual relevance. The ecological constraints discussed in Chapter 8, such as limited broadband, lack of training, and incompatible platforms, further contributed to a reliance on what Bacchi (2019) calls a problematisation of practice: where the problem (inequality) is constructed in technical terms, and the solution (technology) is assessed by visibility rather than pedagogical value.

A broader issue found in rural implementation, where policies often equate digital transformation with hardware provision or data upload frequency, neglecting the nuanced pedagogical labour required for meaningful integration. This mirrors the literature critique that lack of definitional clarity around “technology” risks reinforcing a reductive view of digital education as simply device-driven or software-based (Ribeiro, 2017). With such context, the findings reveal a persistent disjuncture between the centralised narratives of educational digitalisation and the lived experiences of rural teachers tasked with enacting them. Teachers such as Mr. Tang and Miss Wang voiced ambivalence—if not quiet resistance—towards digital reforms that emphasised compliance, surveillance, and performativity over pedagogical relevance. This finding echoes Selwyn’s (2016) assertion that the “goodness” of technology in education is neither inherent nor guaranteed, but must be constantly interrogated through the lens of social justice, inclusion, and practical relevance.

In this regard, the normalisation of digital teaching as an institutional requirement—rather than a pedagogical opportunity—reveals how policy discourse has shaped not only the structures of implementation but also the criteria by which success is evaluated. This reflects what might be called "old wine in a new bottle": while the tools may be digital, the reform is still assessed through familiar metrics of compliance. As noted by

researchers (e.g., Wang, 2009; Wu, 2016; Howlett, 2021), education reform in China have often been judged by visible outputs rather than substantive pedagogical change. In the digital context, this is evident in the emphasis on recorded lesson uploads, digital training certificates, and inspection readiness, rather than on improvements in student learning or teacher development.

These findings further highlight the relevance of distributed leadership and bounded autonomy in understanding how DE reforms are enacted in rural Chinese schools. As discussed in Section 3.6, while policy discourse encourages teacher empowerment and school-based innovation, leadership practices in many Chinese schools remain hierarchical, shaped by cultural norms such as power distance and collective harmony. The leadership behaviours observed in both Xing Long and Yang Guang schools reflect this hybrid model, where teachers are expected to perform digital competence within tightly monitored structures, but rarely invited to contribute meaningfully to strategic planning. This constrained form of distributed leadership aligns with what Liu and Rani (2025) describe as "bounded autonomy", where teacher input is welcomed only within limits predefined by institutional or political imperatives. Rather than fostering collaborative innovation, the leadership ecology in these schools often reinforced performative compliance, limiting the scope for pedagogical experimentation. Thus, the symbolic implementation of DE is not just a matter of infrastructure or training gaps, but deeply embedded in the cultural and organisational logics that frame teacher roles and leadership dynamics.

9.3.2 Performing progress: strategic compliance and surface-level implementation of DE

Building on the implementation gap discussed in 9.3.1, this section further responds to RQ2 by analysing how rural teachers strategically complied with DE mandates in ways that prioritised visibility over pedagogical depth. Drawing on teachers' narratives and classroom observations, the findings indicate that digital tools were often employed to meet external expectations, particularly during public evaluations. While their routine use in classrooms remained limited, reinforcing surface-level integration rather than genuine pedagogical innovation.

Across research sites, digital tools appeared primarily as a symbolic performance of modernity—an effort to visibly align with national reform narratives—rather than a vehicle for substantive pedagogical change. Teachers were expected to appear digitally progressive, even when actual integration of technology into daily teaching remained limited and superficial. As shown in Chapters 7 and 8, most teachers expressed a general agreement with the national push toward digitalisation and believed in its potential benefits. However, their understandings of how to implement digital tools in meaningful pedagogical ways were often vague, ambiguous, or rooted in institutional compliance. Activities such as uploading digital lesson plans, completing mandatory online training, or preparing for assessments involving digital tools were frequently cited—not as part of a reimagined instructional model, but as forms of administrative accountability. This echoes Huang et al's (2019) findings that technology use among Chinese teachers was shaped more by institutional pressures and social expectations than by teacher-led pedagogical innovation.

This performative approach to reform aligns with global literature highlighting how digital technologies in schools are often used to support administrative visibility rather than pedagogical innovation. For example, large-scale studies in Chile and Korea have shown that teachers increasingly rely on digital tools to prepare visually engaging lessons or meet institutional requirements, yet often do so without clear pedagogical purpose or critical evaluation (Ibieta et al., 2017; Shin, 2015).

This compliance-driven implementation was particularly evident in high-stakes, publicfacing instructional events, such as open classes, teaching competitions, and inspections. Teachers in this study described being required to upload content to centralised platforms or participate in public-facing initiatives such as “One Teacher, One Quality Lesson” as part of district targets. These symbolic practices, while presenting a digitally progressive image, the motivation was largely external. Teachers were acutely aware of being observed and evaluated, and thus invested significant time in crafting polished performances that showcased digital fluency. These staged uses of technology— designed to display teacher competence and student interaction—contrast sharply with more routine lessons, where technology was used sparingly, often reduced to

PowerPoint slides or basic multimedia courseware.

This selective and symbolic engagement with digital resources reflects broader patterns identified in Chinese educational reform literature, where visible compliance often takes precedence over meaningful pedagogical innovation. Kipnis (2011) and Wu (2016) describe this as strategic compliance—a practice where teachers adapt their visible behaviours to meet policy demands while maintaining continuity in classroom routines.

In this sense, DE functioned less as a tool for classroom innovation and more as a symbol of modernity and alignment with national reforms.

However, these efforts often lacked contextual relevance and local ownership—especially in rural schools with weak infrastructure and limited professional support. Teachers frequently cited unreliable equipment, poor projector visibility, and outdated software as key barriers. These problems echo findings by Yang and Yang (2019), who show how hardware failures and delayed maintenance hinder the effective use of technology in under-resourced schools. In this constrained environment, digital tools were used mainly to support test preparation or enhance presentations, rather than enable student-centred or creative learning. Unlike urban schools described in Yang and Yang's work—where teachers tried one-to-one technology or student-generated content—teachers in this study relied on teacher-led slides and multimedia. Across both Yang Guang Primary and Xing Long Secondary Schools, student interaction with digital tools was rare. Teachers often viewed digital infrastructure as a professional resource for their own productivity, rather than something to be shared with students. There were only two notable exceptions: Mr Feng occasionally invited students to play a maths game on screen to boost engagement, and Mr Zhao involved students in an IT lesson during a public open class.

As such, the findings suggest while digital technologies may redistribute instructional resources and offer increased visibility for rural learners, they do not challenge the deeper economic structures and cultural hierarchies that shape educational inequality. In this study, rural teachers frequently noted their limited authority in digital initiatives led by urban-based experts, echoing Luo et al's (2022) caution that ICTs can

unintentionally reinforce the cultural dominance of urban education. Rural teachers, in this framework, are positioned more as implementers than as pedagogical agents.

Even in cases where teachers showed stronger digital confidence or interest, structural pressures limited sustained pedagogical experimentation. As seen in Chapter 8, a few teachers (e.g., Mr Feng) demonstrated more active and reflective uses of digital tools, employing them to support student engagement in genuinely interactive ways. These practices hint at the potential of DE to go beyond compliance. Yet they remain exceptions, constrained by rigid curricula, exam pressures, and limited infrastructural support. The pressure to ensure academic performance—particularly in exam-focused subjects—often led even these more innovative teachers to revert to traditional methods. This reflects a dynamic also observed by Liu et al. (2017), where teachers regarded technology primarily as a tool to reinforce subject mastery rather than to transform pedagogy.

These findings also resonate with Li et al. (2019), who found that high levels of technology use do not automatically lead to student-centred learning. On the contrary, their analysis revealed that technology-enhanced instruction was often associated with increased use of display questions, restricted speech acts, and minimal student output. In this study, similar patterns were evident: students responded to prompts but rarely engaged in extended dialogue or authentic language production. Teachers' feedback was mostly confined to acceptance or repetition, with minimal corrective interaction. In this sense, technology reproduced, rather than disrupted, the existing classroom power dynamics.

Finally, despite national policy advocacy for deep digital integration, many teachers in this study perceived technology more as a tool to satisfy institutional mandates than to reimagine teaching and learning. This reflects a significant gap between policy intentions and classroom realities. As Luo et al. (2022) argue, policy must move beyond a narrow focus on access and infrastructure, and instead support the effective use of digital tools within schools. Similarly, Huang et al. (2019) emphasise the importance of facilitating conditions—including technical support, time, and ongoing professional development—as key factors in shaping technology acceptance and use.

Taken together, these findings suggest that the implementation of DE in rural China remains largely performative and compliance-oriented, shaped more by external pressures and policy discourses than by intrinsic pedagogical motivations. While digital tools are increasingly present in classrooms, they are often assimilated into existing instructional routines as a modern extension of traditional, teacher-centred practices. Although isolated examples of more meaningful engagement with technology exist, these remain constrained by structural inequalities, institutional demands, and the enduring dominance of examination-focused instruction. Thus, the transformative potential of DE remains largely unrealised. For digital initiatives to foster real pedagogical change, they must be grounded in context-sensitive policies, genuine teacher agency, and ongoing professional support that enables educators to move beyond symbolic compliance and engage with DE as a pedagogical and social tool.

9.4 RQ3: How Does Teacher Agency Manifest in the Integration of Digital Technology within rural schools, and What Factors Influence It?

This section addresses RQ3: How does teacher agency manifest in the integration of digital technology within rural schools, and what factors influence it? Key findings indicate that while all three dimensions were present, the practical-evaluative dimension was the most visibly and consistently enacted in teachers' daily practices. Teachers made real-time decisions about digital integration based on a cost–benefit analysis, often weighing institutional expectations (e.g. exam performance, inspections, promotion, and visibility) against infrastructural limitations, workload, and perceived pedagogical value. This form of agency frequently took the shape of bounded innovation or strategic compliance, reflecting the complex interplay between autonomy, accountability, and constraint.

It is important to clarify how teacher agency is conceptualised in this study. While agency is often portrayed in policy and research as inherently empowering or progressive, this is not always the case. As Priestley et al. (2012) have argued, agency can also serve to maintain the status quo, resist reform, or respond to structural pressures in ways that may not be seen as educationally beneficial. In some instances, teachers may act strategically to avoid risks, minimise workload, or comply with external demands, rather than actively transforming their practice. Accordingly, while some examples in this chapter may illustrate resistance, compliance, or even disengagement, these should not be interpreted as critiques of individual teachers.

Rather, this analysis seeks to reflect honestly on the situated judgments rural teachers make when navigating reform within constrained environments. The sections that follow critically examine each dimension, highlighting how teacher agency is enacted, enabled, and constrained within the realities of rural education reform.

9.4.1 Iterational dimension of teacher agency

The iterational dimension concerns teachers' personal and professional histories—comprising their long-established values, beliefs, knowledge, habits, and dispositions towards teaching and learning (Priestley et al., 2015). In the context of rural DE reform in China, this dimension plays a foundational role in how agency is enacted. It interacts with broader ecological influences and manifests in everyday classroom practices. Teachers' mediation of DE policy illustrates the central role of past experience and culturally embedded professional norms in shaping their engagement. This is particularly evident in responses to initiatives such as the *Education Informatisation 2.0 Action Plan* (MoE, 2018) and the *Information Technology Capabilities Assessment 2.0* (ITCA 2.0) (MoE, 2019), as discussed in chapter 7. These initiatives require teachers to demonstrate competencies such as designing authentic digital learning environments and constructing digital resources to support student-centred pedagogy, which align with international discourses around the agentic potential of technology in education discussed in Chapter 3. For instance, the ITCA 2.0 framework specifically expects teachers to use information technology to create real-life learning scenarios and guide student learning processes.

Notwithstanding these policy ambitions, many rural teachers responded to DE reform through the lens of their accumulated teaching experiences, professional identities, and institutionalised norms. As detailed in Sections 7.4 and Chapter 8, teachers often relied on prior pedagogical strategies that had yielded success in exam-focused environments.

For example, teachers such as Mr Deng, Mrs Zhang, and Mr Han continued to rely on textbook-based, didactic approaches, viewing digital tools as ancillary aids at best. Their pedagogical habits, reinforced over decades of practice and institutional reward systems that emphasised efficiency and measurable outcomes, became deeply sedimented. This pattern is consistent with findings in other educational contexts. For instance, Li et al. (2018) and Gong et al. (2021) note that in China, rural teachers often use technology in ways that maintain rather than disrupt traditional classroom routines. Similarly, Perrotta (2013) observed that UK teachers who have long operated within performance-driven systems tend to view digital tools through a pragmatic lens, favouring resources that streamline existing practices over those that demand a fundamental shift in pedagogy. In both cases, the use of technology is filtered through teachers' pre-existing understandings of what constitutes 'good teaching'.

Findings presented in Section 7.4.1.1 indicate that many experienced rural teachers drew confidence from long-standing pedagogical routines. This sense of sufficiency in their professional practice often discouraged the adoption of new digital tools. This aligns with Biesta and Tedder's (2007) assertion that agency is not merely about the capacity to act, but about acting in ways that are meaningful within one's life history. For example, Mr Deng, with 27 years of rural teaching experience across multiple subjects, expressed scepticism about DE, describing it as 'merely formalism'. His perception that DE adds little to teaching resonates with a performative model—where technology is seen as a superficial add-on rather than a meaningful pedagogical tool.
His habitual reliance on familiar resources like the Xiwo platform underscores this cautious stance. He stated: "The presentations in Xiwo are very good; I generally do not need to modify them and can display them directly." Mr Deng's approach highlights

the instrumental use of digital content to replicate textbook instruction rather than transform it—a practice grounded in his iterational reliance on established methods.

Moreover, teachers' confidence in their own content knowledge and instructional styles—often built over decades—made them cautious about digital innovations. Mr Han explained that "technology is just a substitute," reaffirming his preference for handwritten preparation. Similarly, Mrs Zhang argued that in mathematics "technology doesn't play a necessary role," privileging problem-solving efficiency over digital engagement. Mrs Chen, an art teacher, echoed this sentiment by linking subject hierarchy to digital integration, stating that digital methods "don't always feel worth it" in low-status subjects. These findings suggest that some teachers enact a form of static agency—maintaining control over their pedagogy through trusted routines, thereby resisting perceived disruptions from DE. While this agency may appear resistant, it is in fact a rational, contextually grounded response to structural realities and longstanding pedagogical values (Schulte, 2019; Tondeur et al., 2017).

Nonetheless, such confidence in traditional methods intersects with digital competence and self-efficacy in nuanced ways. Teachers like Mr Deng and Mrs Zhang possess basic technical skills but lack the confidence to integrate technology pedagogically. This echoes findings in the literature on technostress and resistance (Panisoara et al., 2020; Bingimlas, 2009), suggesting that familiarity with digital tools does not equate to transformative use.

At the same time, the findings suggest that the iterational dimension of teacher agency does not operate in a vacuum. Rather, it is shaped and reinforced by institutional norms

and rural cultural values that continue to define teaching as both a moral duty and a practical path to academic success and social mobility (Mu et al., 2019). This perspective was reflected in teachers' views on education, where personal biographies—particularly their formative experiences as rural students—served as key reference points. Many participants shared similar narratives: they themselves were once rural students whose academic achievements had enabled them to access higher education opportunities in cities. While they ultimately returned to rural areas for work—often under policies like the Free Teacher Education Programme (FTEP)—they internalised a belief in education as a transformative force for social mobility. Their experiences and beliefs continue to inform their pedagogical orientations and views on the purpose of schooling—framed largely as academic achievement—and align with broader socio-cultural values underpinning Chinese education, as discussed in Section 3.4. Such 'success' is often measured through high-stakes examinations (Li, 2005; Gu, 2010), and this framing continues to shape how teachers perceive and enact DE.

As seen in interviews with teachers like Mrs Li and Mr Han, digital tools are commonly viewed as supplementary instruments—helpful for improving exam outcomes or covering content more efficiently, but not essential for rethinking pedagogy or fostering creativity and critical thinking. The use of digital resources downloaded from platforms like Xiwo, as highlighted in both interview and classroom observations, further reinforces this point: while digital tools were present, their role was limited to supporting rather than transforming the transmission-based logic of instruction. This performative and utilitarian view of DE reflects not only teachers' professional histories but also their discomfort and limited confidence in integrating unfamiliar technologies

into their teaching. Similar findings have been observed in other studies of Chinese rural educators (Bai et al., 2016; Wang, 2020).

However, the iterational dimension also showed variability across generational and experiential lines. For example, early-career teachers like Mr Feng and Miss He—both of whom had relatively recent exposure to technology during their university training—demonstrated more confidence and creativity in incorporating DE into their lessons (see 8.2.3 and 8.2.4). Mr Feng's interactive use of the digital blackboard, gamified classroom strategies, and willingness to support peers in navigating new digital tools signal a different trajectory. Yet, as discussed in Chapter 8.2.3, despite their training and confidence in using digital tools, interactive elements were often confined to the early part of lessons or used primarily for classroom management—before reverting to more traditional, presentation-based approaches. This aligns with Lewin and McNicol's (2014) observation that, although ICT training enhances technical competence, it does not necessarily lead to meaningful classroom integration. For many participants, digital competence was useful only to the extent that it could serve their existing teaching goals—typically framed by content coverage, classroom order, and exam preparation.

These contrasts underscore a key insight from Priestley et al. (2015): while iterational agency draws on past experience, it is never fixed. It may reinforce habitual practices, but it can also support incremental shifts when new tools or roles align with teachers' professional self-understanding. Teachers are not simply passive recipients of training; they evaluate and act upon what they have learned through the lens of their teaching identity, school culture, and available resources (Priestley et al., 2015). These findings provide a critical explanation as to why competence alone is insufficient when the

broader ecology of schooling constrains risk-taking, experimentation, and professional autonomy. As the integrated framework shows (in Chapter 7), digital agency must be understood not just in terms of skill, but also in relation to enabling conditions for that skill to translate into pedagogical transformation.

The iterational dimension of agency in this study illuminates the enduring power of habit, belief, and past experience in shaping how digital tools are interpreted and used. Teachers' digital agency—particularly the two key components of digital competence and confidence—while evident in many cases, acted more as a mediator in technology integration than as a direct driver of deep DE implementation in classroom practice. Instead, it was filtered through professional values, historical expectations, and practical concerns, as discussed in the Chapter 3. These dispositions, rooted in professional memory, often shaped whether teachers adapted existing practices to incorporate DE or chose to rely on familiar routines. However, as the findings in Chapters 7 and 8 demonstrate, these choices were rarely about outright resistance or full compliance. Instead, they reflect a spectrum of agency, where teachers weigh policy expectations against the immediate realities of rural schooling, including workload pressures, infrastructural limitations, and performance-driven accountability systems. This evaluative balancing act implicates the practical-evaluative dimension of agency, explored in the next section (9.4.2), and is further shaped by the projective dimension, which is discussed in Section 9.4.3.

9.4.2 Practical-evaluative dimension of teacher agency

The practical-evaluative dimension of agency refers to how teachers make informed decisions in response to present conditions, taking into account the demands of their

immediate environment and their available resources (Priestley et al., 2015). This dimension highlights the daily negotiation between top-down policy expectations, school cultures, digital demands, and the lived complexities of rural teaching. Of the three dimensions of teacher agency examined in this study, the practical-evaluative dimension was the most visibly enacted and had the greatest influence on the implementation of DE reforms in rural China. The findings suggest that rural teachers' digital decision-making was profoundly shaped by a practical-evaluative logic. Digital integration was not adopted as a pedagogical innovation in itself, but rather assessed through a cost–benefit lens—mediated by policy expectations, institutional culture, and individual capacity.

9.4.2.1 Navigating the policy–practice divide: compliance, adaptation, and pragmatism

As outlined in Section 9.2.1, national policies tend to construct the 'problem' of rural education primarily in terms of technological underdevelopment, while paying limited attention to the broader social, cultural, and professional conditions that enable effective teaching. Although China's governance model has led to substantial investments in digital infrastructure, particularly in rural areas, it has also imposed structural constraints that limit the exercise of teacher agency. A recurring pattern across both case study schools was the tension between the aspirational narratives of policies like the Education Informatisation 2.0 Action Plan and the grounded reality of underresourced teaching contexts. While such policies promote "smart education" and digital pedagogical transformation, they often assume the presence of reliable infrastructure, well-aligned teacher training, and professional autonomy—conditions rarely encountered in rural practice (Zhao & Frank, 2003; Wang & Sun, 2021). This was

reflected in my fieldwork, which further supports the argument that the installation of technology alone does not lead to meaningful classroom integration.

Moreover, with a policy paradox discussed in Section 9.2, teachers are framed as empowered change agents, while they have little say in the design, localisation, or practical relevance of the reform programmes. My findings revealed that most rural schools sourced digital tools and content from a single government-endorsed supplier, leaving teachers with little choice in adapting materials to fit their classrooms. For example, the XiWo interactive whiteboard, widely distributed to rural classrooms as a flagship digital device under EI 2.0, appeared more as a symbol of digital modernity than a pedagogical tool. Without adequate funding for compatible software or locally relevant content, it was most commonly used as a screen for PowerPoint presentations rather than a platform for interactive learning. Moreover, due to a lack of reliable technical support, both school leaders and teachers expressed concern that any malfunction could further strain their already stretched budgets and workloads—turning digital tools from assets into liabilities. In response, schools and teachers often adopted a careful and pragmatic stance towards using state-supplied technologies. Their decisions were necessarily context-bound and cautious, shaped by the imperative to maintain instructional continuity with limited support. This gap between intention and enactment highlights the limitations of the framing when it meets on-the-ground conditions in rural education.

Furthermore, the literature underscores that effective DE integration depends not only on infrastructure but also on teacher agency, particularly their digital competence, confidence, and decision-making autonomy (Voogt & Roblin, 2012; Passey et al.,

2018). However, as shown in this study, rural teachers often face technostress, limited training, and misaligned professional development, all of which restrict their ability to adopt technology in transformative ways. These findings align with studies from both Global North and South contexts, which caution against interpreting barriers solely as technical or individual, instead highlighting the structural and cultural ecosystems in which DE reforms are enacted (Schoepp, 2005; Comi et al., 2017; Facer, 2009). This disconnect between policy intent and classroom reality mirrors earlier reforms like the "quality education" (素质教育/Suzhi) initiative. Although it aimed to foster holistic development and innovation, it often devolved into superficial compliance due to entrenched exam-oriented cultures (Howlett, 2021; Wu, 2016; see Chapter 3.6.2). In both cases, reform rhetoric calls for creativity and agency, but policy design and implementation mechanisms often undermine these very goals by reinforcing highstakes accountability and hierarchical oversight.

Also, the policy analysis presented in Section 7.2 reveals that recent reforms present a more ambitious vision of 'good education' in the digital age. For instance, the EI 2.0 advocates for "innovation-driven development" rather than merely "technology-driven development" (MoE, 2018), signalling a shift towards more pedagogically grounded uses of technology. In practice, as illustrated in Chapters 7 and 8, professional development typically takes the form of brief training sessions that prioritise tool functionality over pedagogical application. Although interactive whiteboards, educational apps, and digital platforms are now available in many classrooms, their usage was constrained by limited time, minimal ongoing support, and the overriding pressure to meet exam targets. As Li and Christoph (2024) similarly note, core aspects of DE governance in China—ranging from curriculum standards to software

selection—are centrally controlled by state agencies or expert panels. In this context, rural teachers are positioned as implementers, not contributors, to the digital reform process.

Moreover, accountability structures embedded within this governance model restricted professional discretion. This contradiction mirrors earlier educational reforms in China, such as the "quality education" (素质教育/Suzhi) initiative (Howlett, 2021; Wu, 2016; see also Chapter 3.6.2), which similarly promoted creativity and holistic development while imposing high-stakes accountability systems that undermined its intent. Local education bureaus and school leaders, wary of political risks, tend to interpret national DE targets in rigid ways, reinforcing a top-down compliance culture. In my fieldwork, this was evident as schools implemented DE through surface-level practices—such as meeting the ICTA criteria for open classes—rather than pursuing meaningful innovations. Besides, teachers' digital integration was increasingly tied to job appraisals and promotion opportunities (MoE, 2005). Their engagement with national platforms was also monitored through backend data systems. For many, this translated into a logic of performativity and surveillance, where the visibility of digital engagement became more important than its pedagogical value. Several participants admitted to uploading lesson materials to platforms merely to satisfy checklist inspections—a finding that resonates with Ball et al.'s (2012) theory of policy enactment, in which educators perform reform to meet external demands without altering core practice.

These patterns of adaptation and constrained decision-making are best understood through the lens of bounded autonomy, which reflects how teachers exercise agency within pre-structured, top-down reform environments. As discussed in Section 3.6.3,

although leadership discourses in Chinese education increasingly promote teacher-led innovation and distributed responsibilities, the reality in many schools remains more centralised. The case schools in this study exemplify this contradiction: teachers were formally expected to innovate, yet their professional discretion was circumscribed by rigid accountability systems and target-driven governance. This echoes Tan's (2024) findings on strategic pragmatism and meta-strategic leadership in East Asian contexts, where surface-level autonomy is granted but deeper decision-making authority remains concentrated. Consequently, rural teachers enacted practical-evaluative agency not through genuine pedagogical experimentation, but through a logic of strategic compliance, often using digital tools to signal alignment with reform goals while preserving familiar instructional routines. This highlights the interplay between structural constraint and micro-level judgement in shaping agency under distributedbut-centralised leadership models.

Building on this trajectory, my findings, along with scholars such as Selwyn (2011) and Zhao (2018), suggest that assuming technology integration will automatically transform pedagogy reflects a form of technological determinism. Without addressing structural constraints, digital resources risk becoming another bureaucratic requirement rather than a catalyst for educational change.

9.4.2.2 Target-driven digital engagement and constrained pedagogical autonomy

The institutional environment further compounded the challenges faced by rural teachers navigating DE reform. As discussed in Section 9.2.1, China's hybrid governance model—characterised by strong centralised control alongside

marketoriented accountability mechanisms (Li & Christoph, 2024)—has fostered a compliance-driven culture within schools. In this context, teachers are simultaneously framed as agents of digital innovation and as objects of regulation. While policy rhetoric encourages them to "actively adapt" to AI and informatisation (CPC & State Council, 2018), the design and direction of DE initiatives remain overwhelmingly topdown. Teachers are expected to implement policy goals, not co-construct them.

Interview data revealed that teachers' input was rarely solicited during school-level DE planning. Their professional autonomy was constrained by rigid target-setting and a lack of guidance tailored to pedagogical or subject-specific contexts. Training, when available, was typically generic and focused on platform functionality rather than instructional design. These findings echo critiques by Zhao and Frank (2003) and Wang and Sun (2021), who argue that DE policy in China has struggled to accommodate the realities of diverse and under-resourced school settings.

This dynamic was particularly visible in SA Middle School, where a high-stakes exam culture heavily influenced how digital tools were evaluated and adopted. For example, Mr Wang selectively integrated digital resources only when they directly supported test preparation. His decisions were guided less by a commitment to pedagogical innovation and more by a pragmatic evaluation of what would efficiently reinforce exam outcomes. This strategy reflects Selwyn's (2010) critique that technology often serves the logic of audit and accountability rather than authentic instructional improvement.

Similarly, across both case schools, teachers described a managerial culture in which national targets were interpreted rigidly by school leaders seeking to avoid political

risk. These targets were translated into quantifiable mandates: mandatory platform usage, digital lesson competitions, or public lesson observations. Under such pressures, teachers felt compelled to demonstrate visible engagement with DE tools, regardless of whether these practices meaningfully enhanced student learning.

At PP Primary School, the constraints of weak infrastructure were more pronounced. Teachers such as Mrs Gao reported that while she valued interactive methods, she often reverted to didactic teaching when faced with failing technology or tight lesson schedules. Her decisions reflected a practical-evaluative rationality focused on minimising disruption, managing time, and preserving instructional flow. This form of cautious adaptation—shaped by institutional constraints and resource scarcity—closely aligns with Lewin and McNicol's (2014) notion of 'bounded innovation', whereby teachers operate within safe, institutionally sanctioned limits.

Participation in government-led teaching competitions and digital "model school" designations offered another channel for institutional validation, as discussed in Section 2.4. Yet rather than promoting sustained pedagogical change, these mechanisms often encouraged surface-level engagement. Teachers prioritised presentation and performance over long-term integration, focusing on digital visibility to satisfy external evaluation. As Fu and Clarke (2019) warn, reforms that exclude teacher voice from the design process risk resulting in superficial or symbolic implementation—particularly when institutional rewards are based on appearances rather than pedagogical substance.

9.4.2.3 Personal capacities and the const-benefit analysis in everyday decision-making

A common thread across many interviews was teachers' ability to strategically comply with policy while still preserving elements of their professional judgment. For instance, several participants adopted what could be termed surface-level engagement with DE platforms to satisfy performance checks, while continuing to rely on traditional methods in practice. This form of agency is pragmatic and reflective. Rather than openly resisting or fully embracing digital reform, teachers evaluate how much engagement is necessary to meet institutional expectations without compromising their own pedagogical goals or overburdening their workload. This aligns with Biesta and Tedder's (2007) notion that agency is not simply about freedom to act, but about the capacity to navigate options within structural boundaries. My findings reinforce the view that rural Chinese teachers are not passive recipients of policy but active agents who continually assess what is workable, meaningful, and manageable. This agency, however, is not equally distributed; it is shaped by teachers' digital literacy, institutional trust, peer networks, and perceived autonomy.

The concept of digital agency is critical here. Observation and interview data from both schools indicated that teachers with higher digital confidence and competence were more likely to initiate purposeful digital integration, even when faced with infrastructural challenges. For instance, Mr Feng demonstrated a high level of digital fluency, shaped by his previous exposure to technology outside the school system. His use of digital tools was not confined to standard platform tasks; rather, he customised materials, created interactive activities, and offered informal digital support to his colleagues. His case illustrated how a well-developed sense of digital agency could

expand the scope of practical-evaluative decision-making. He described feeling a sense of responsibility to ensure that his digital practices aligned with student-centred pedagogy rather than merely fulfilling inspection targets. This pedagogically oriented accountability distinguished his agency from more performative forms of compliance.

However, Mr Feng's example was atypical. Most teachers operated within much narrower boundaries, constrained not only by external conditions but also by selfperceived limitations in digital competence. Teachers with lower confidence reported feeling apprehensive about using tools beyond what was introduced in formal training. Mrs Gao, for instance, expressed discomfort with troubleshooting technical issues during lessons and preferred not to take risks with unfamiliar tools. Her classroom practice reflected cautious engagement, relying on pre-prepared videos or simple slide presentations that required minimal adaptation. While she occasionally experimented with interactive resources, she quickly reverted to familiar methods when technical glitches occurred. Her case reflected a form of practical-evaluative agency shaped by risk avoidance, in which digital decisions were guided by a desire for self-protection and concerns over perceived technical inadequacy.

Several teachers explained that their engagement with digital tools was restricted to what had been explicitly modelled or mandated by leadership. In such cases, digital agency became an extension of institutional expectations rather than a driver of autonomous innovation. This echoes findings from Tondeur et al. (2017), who argue that teachers' internal beliefs about digital competence and their professional context jointly influence their willingness to explore new technologies. In contexts where training was generic and support systems were weak—as was common in the schools

studied—digital agency remained underdeveloped, limiting the capacity for critical evaluation and creative adaptation.

Moreover, teachers' digital accountability—the sense of responsibility for the pedagogical value of digital tools—varied considerably across cases. While Mr Feng articulated a strong alignment between digital decisions and student learning outcomes, others framed digital engagement primarily in relation to administrative expectations. Mr Wang, for example, reported using online platforms only when required by school policy or during evaluation cycles. He noted that while certain tools were convenient for exam revision, he did not consider them essential to his pedagogy. His accountability was thus externally driven and performative, focused on meeting institutional indicators rather than intrinsic pedagogical goals. This differentiation in digital accountability adds a critical layer to Passey et al.'s (2018) model, suggesting that accountability can be pedagogically empowering or compliance-oriented depending upon the broader governance context.

Teachers' broader evaluative judgments were also mediated by technostress—a concept that has been increasingly used to explain why educators may resist or withdraw from digital reform (Li & Wang, 2021). Some teachers, including Mr Xu, conveyed anxiety about equipment failure and insufficient troubleshooting skills. His preference for paper-based tasks, despite acknowledging the potential value of multimedia, was not rooted in ideological opposition to DE but reflected a rational appraisal of risk and available support. This aligns with Wu et al.'s (2022) findings that technostress, compounded by low information literacy, can significantly reduce teachers' willingness to explore digital pedagogies.

Importantly, digital agency did not operate in isolation. It interacted dynamically with institutional trust, leadership encouragement, and peer support. Teachers who reported stronger support networks—whether through informal mentoring, trusted school leaders, or collaborative teaching groups—were more willing to experiment and revise their practices. In contrast, teachers who felt isolated or evaluated in high-stakes, nonsupportive environments described restricting their choices to minimum compliance. This supports the argument by Ertmer and Ottenbreit-Leftwich (2010) that secondorder barriers—such as beliefs, confidence, and support—are often more significant than technical ones in shaping digital integration.

These dynamics illustrate the value of using an ecological lens (Priestley et al., 2015) combined with the concept of digital agency (Passey et al., 2018) to understand teacher action. Teachers' evaluative decisions were shaped not only by their own beliefs or technical skills, but also by policy messages, leadership interpretation, infrastructure reliability, and the performative culture of school accountability. Within this constrained ecosystem, agency was not about full autonomy, but about making workable decisions under pressure—a subtle but powerful practice that shaped the daily realities of DE reform in rural China. This process reflected what Laurillard (2007) conceptualises as the cost–benefit dynamics of technology-enhanced learning—a structured approach to evaluating the expected learning gains (benefits) in relation to the investment of time, resources, and teaching effort (costs).

Yet, in this study, digital choices were most often dictated by what was performatively valuable—what could be measured, observed, or rewarded—rather than by critical

assessments of learning impact. In both case schools, teachers consistently evaluated the use of digital tools against a backdrop of institutional incentives and constraints. For some, digital engagement was instrumental to professional advancement, gaining recognition or honour, or meeting institutional expectations tied to exam performance metrics. The perceived value of digital tools was thus often measured in terms of their contribution to exam outcomes or visibility during inspections. Teachers like Mr Wang calculated that using certain tools was worthwhile only if they supported test preparation or conformed to leadership expectations. In such contexts, digital integration was governed less by pedagogical transformation and more by institutional logic and measurable returns.

Ultimately, the findings in this dimension underscore that practical-evaluative agency is deeply shaped by cost–benefit dynamics, not only in the economic or time-use sense, but in how teachers balance professional accountability, pedagogical responsibility, and institutional expectations. Digital agency, in this context, did not function in isolation but interacted with broader accountability regimes, structural constraints, and teacher identities. Teachers' decisions to integrate—or not integrate—digital tools were thus not random or passive, but the product of situated judgment informed by a delicate calculus of risk, reward, effort, and ethics.

9.4.3 Projective dimension of teacher agency: envisioning futures, aspirations, and possibilities for change

The projective dimension of teacher agency, as outlined by Priestley et al. (2015), concerns teachers' capacity to imagine alternative futures, to set long-term goals for their students, and to reconfigure their own practices accordingly. In theory, DE reform

provides fertile ground for such forward-looking engagement: national policies project visions of smart classrooms, learner-centred pedagogies, and educational equity powered by technology (as discussed in Section 7.2). However, in the rural schools studied, this imaginative orientation was constrained—not by outright resistance, but by a convergence of cultural logics, instrumental beliefs, and systemic ambiguity.

Many teachers articulated aspirations to innovate or develop more interactive and engaging practices through digital tools. For example, Ms. Lin, despite expressing frustrations with the lack of reliable internet access and limited training, spoke about her hope to one day create "a more student-led classroom using online resources" to spark curiosity and collaboration. Although her current teaching remained largely teacher-centred due to exam pressures, her narrative pointed to a future-oriented vision grounded in a belief that "technology can make learning more vivid". Similarly, Mr Zhao shared his intention to redesign his history lessons to include digital archives and multimedia storytelling, even though he admitted to lacking the time and technical support to do so at present. These examples suggest that even within restrictive conditions, teachers carry forward projective intentions that inform how they evaluate their current practices and plan for potential shifts.

Such future-oriented thinking demonstrates a form of what Biesta et al. (2015) refer to as professional imagination—the capacity to envision alternative educational realities and to see oneself as an active agent in shaping them. While many teachers acknowledged the obstacles in turning these aspirations into action, the act of imagining and articulating these futures already reflects a level of agency and resistance to purely instrumental compliance.

The findings, however, also revealed tensions between aspiration and reality. For some teachers, projective agency remained latent—expressed in language but not yet enacted. For instance, Mrs He discussed her desire to incorporate digital formative assessment tools but felt this was “too far from the current classroom reality” given the school’s reliance on standardised paper tests. This disconnect between projected possibility and institutional priorities echoes what Perrotta (2017) observed as the “imaginative constraint” of performative cultures, where teachers' ideas for innovation are often stifled by the rigidity of curricular and policy expectations.

A recurring theme across the cases was the importance of professional development and peer collaboration in supporting teachers’ future-oriented agency. Teachers who had experienced targeted digital training or participated in collaborative learning communities reported higher confidence in experimenting with digital tools and expressed clearer future intentions. For example, Ms. Deng, after attending a regional workshop, reimagined her role as “not just a deliverer of content, but a guide to digital learning.” Although her current implementation remained modest, her narrative showed a clear shift in self-conception and a projective vision grounded in new understandings of her professional identity.

These findings are consistent with research highlighting the role of professional learning and institutional culture in enabling projective agency (Knussen & Agnew, 2022; Kristiawan et al., 2022). In schools that provided time, support, and encouragement to plan, reflect, and innovate, teachers were more likely to articulate

clear digital goals and view themselves as active agents in shaping future teaching and learning.

National policy discourses around digital transformation also shaped how teachers framed their professional futures. Some teachers internalised state narratives of digital modernisation, positioning themselves as contributors to national progress. For instance, Mr Hu stated that he felt "a responsibility to help students become digitally literate citizens" in alignment with government goals. This alignment between policy vision and teacher aspiration can be empowering, but it may also mask critical reflection if teachers feel compelled to perform compliance rather than critically engage with policy goals. Conversely, others expressed a more cautious stance, projecting futures marked by selective engagement. Mrs Gao, for example, described her future use of DE as "only where it fits," suggesting a careful weighing of pedagogical value rather than uncritical adoption. These nuanced orientations reflect the ways in which projective agency is shaped not only by individual values, but also by the negotiation of external discourses and internal professional priorities.

The projective dimension concerns how teachers imagine and orient themselves toward possible futures in their professional practice. According to Priestley et al. (2015), this dimension involves envisioning change, setting goals, and making aspirational choices. In the context of rural China's DE reform, the projective dimension of teacher agency is shaped not only by teachers' future aspirations but also by their understandings of technology's transformative potential—constrained by policy narratives, digital accountability pressures, and the material realities of their working environments.

Within the policy narratives discussed in Section 9.2.2, the ideal teacher is portrayed as digitally competent, pedagogically innovative, and capable of nurturing active, selfdirected learners—aligned with the state's broader vision of a modernised education system.

Across interviews and classroom observations, future-oriented reasoning was evident but often fragmented and ambivalent. Some teachers expressed belief in the transformative potential of DE—emphasising that "technology can bring changes to education" and "help students grow"—yet their projected futures were rarely concrete or pedagogically expansive. This echoes broader literature on digital agency, where optimism about technology's role in education often exists alongside uncertainty or low confidence in its actual use (Passey et al., 2018; Andyani et al., 2020). Teachers' aspirations were frequently instrumental, with DE framed as a means to improve exam outcomes or efficiency, rather than foster creativity or innovation—an issue echoed in Lewin and McNicol (2014), who found that digital competence is often reduced to tooluse rather than pedagogical transformation.

This projective orientation was also closely tied to teachers' perceived digital competence. For instance, several teachers admitted they "don't know what kind of changes" DE can bring or how to realise the vision stated in policy. This aligns with findings from Bingimlas (2009), who argued that the lack of pedagogical application skills limits meaningful ICT integration. Teachers with low digital competence were more likely to see technology as a burden or as "something extra" to their teaching, which led to cautious or passive future-oriented planning. Conversely, those with higher digital competence and confidence—like SA07, who regularly engaged in peer support

and local training—showed more proactive orientations, experimenting with digital platforms to extend student learning. This supports research by Beetham (2009) and Passey et al. (2018), who highlight that confidence and competence are foundational to agentic, future-oriented digital practices.

Moreover, digital accountability also shaped the projective dimension. Some teachers expressed concern about the reputational risks of using unreliable online content or being judged during inspections. This led to cautious digital behaviour, reinforcing performative rather than pedagogically transformative uses. This concern reflects broader concerns discussed by CILIP (2018) and Panisoara et al. (2020), where technostress and policy-driven expectations can inhibit creative or future-facing experimentation. Instead of exploring innovative DE practices, many rural teachers focused on 'safe' uses of digital tools for public lessons, assessment preparation, or compliance.

In this way, the projective dimension of agency is constrained not just by individual uncertainty but by the layered interaction of policy demands, cultural expectations, and accountability pressures. Teachers' long-term visions for DE were often vague or limited by perceived risks, workload, or inadequate support. Following Schulte's (2019) interpretation, some resistance to innovation may be understood not simply as opposition, but as a form of 'agentic negotiation' with misaligned or unrealistic reform narratives.

Nevertheless, the projective dimension was still evident. Among certain teachers—particularly those with stronger digital confidence or informal peer networks—there

were signs of future-facing initiatives. For example, a few described aspirations to design their own digital resources or to create hybrid models of teaching that blend textbook content with online tools. These aspirations, however tentative, suggest potential for innovation when digital agency is supported through training, peer exchange, and flexible policy interpretation.

The projective dimension of agency in this study reveals rural teachers' aspirations, goals, and visions for change within DE reform. While some teachers struggled to enact their visions due to structural limitations, many carried forward future-oriented intentions that influenced how they interpreted policy, reflected on their roles, and imagined alternative practices. Whether these aspirations led to innovation, selective adaptation, or cautious disengagement, they demonstrate the enduring capacity of teachers to envision more meaningful, contextually relevant futures. Recognising and supporting this dimension of agency is essential if DE reform is to move beyond compliance and towards a model that values teacher creativity, professional judgment, and context-sensitive growth.

9.5 Conclusion

Building on the preceding discussions, this section synthesises the key conceptual and empirical contributions of the study, highlighting how the integration of teacher agency and digital agency provides a valuable lens for understanding reform dynamics in under-resourced contexts. It reflects not only on the discussions presented in this chapter but also on the research project as a whole. It also outlines implications for future research, particularly in relation to teacher development, policy design, and the need for more context-sensitive approaches to educational technology implementation.

9.5.1 Main contributions

This study contributes both theoretically and empirically to the understanding of teacher agency in the context of DE reform, particularly within under-resourced, policy-saturated environments such as rural China. Firstly, it makes an important contribution to the limited but growing body of research on rural teachers' lived experiences of digital reform. While much of the existing literature has focused on infrastructure deficits or policy compliance (e.g., Gao & Cui, 2022; Larke, 2019; Wang et al., 2019, see Chapter 3), this study sheds light on the everyday realities of classroom practice in rural China—revealing how teachers interpret, negotiate, and sometimes subvert national DE mandates in contextually grounded ways.

It reveals a clear disconnect between national policy rhetoric and local school-level practice, documenting how teachers respond to reform pressures through pragmatic adaptation, surface-level compliance, and occasionally modest innovation. Such practices challenge the technocratic optimism embedded in Chinese DE policies (MoE, 2016; 2018), which often equate technological access with pedagogical transformation. They also critique the instrumentalist assumptions prevalent in global EdTech discourse (Selwyn, 2010; Jasanoff & Kim, 2009), which tend to understate the complexities of teachers' professional judgment and local realities.

Building on this empirical contribution, the study also makes a significant theoretical advancement through the development and application of an integrated conceptual framework, which brings together Priestley et al.'s (2015) ecological model of teacher agency and Passey et al.'s (2018) notion of digital agency. As outlined in Section 6.3, this framework addresses a critical conceptual gap. While research on teacher agency

offers valuable insights into how teachers mediate policy and curriculum change (e.g., Biesta et al., 2015; Tao & Gao, 2017), it remains largely focused on traditional educational settings and is underdeveloped in the context of digital transformation—particularly in non-Western, resource-constrained environments. Conversely, studies on digital reform have primarily focused on technological infrastructure, adoption, and implementation (e.g., Siddiq et al., 2023; Selwyn, 2010), often neglecting the lived agency of teachers in shaping the trajectory and meaning of reform.

It bridges these two domains by empirically showing how rural teachers' decisions about digital integration are not reducible to issues of access or training, nor are they purely acts of policy resistance or compliance. Rather, these decisions represent contextualised, digitally mediated expressions of agency, where teachers continuously evaluate digital expectations against institutional demands, personal capacity, and pedagogical goals. For example, as evidenced in Chapters 7 and 8, teachers frequently engaged in bounded innovation, such as repurposing XiWo whiteboards for simple slide projection rather than interactive teaching. This demonstrated that agency was shaped not only by physical constraints but also by teachers' digital confidence and perceptions of accountability. Importantly, these judgements were often framed through an implicit cost–benefit analysis (Laurillard, 2007; See et al., 2021), wherein teachers weighed the time and effort required to learn and adapt digital tools against perceived instructional value and institutional demands. In contexts where technical failure was likely or support was minimal, teachers often prioritised reliability and continuity over experimentation—decisions that demonstrate not resistance, but reflective pragmatism. This underscores the centrality of practical-evaluative agency in shaping how teachers engage with technology in the context of DE reform.

Further, as shown in Section 9.4.2, teachers with higher digital competence and confidence—such as Mr Feng—were more likely to exercise projective agency, using digital tools creatively and offering informal peer training. His actions were driven by an internalised sense of digital accountability, a concept drawn from Passey et al. (2018), in contrast to others like Mr Wang, whose engagement was externally motivated by evaluation cycles and school-level mandates. This difference illustrates how digital agency enables or constrains the enactment of teacher agency in a DE reform context.

Moreover, this framework captures a key insight from my fieldwork: that resistance to digital mandates is often a form of informed professional judgement, not technological deficiency. Teachers like Mrs Gao and Mr Xu, for instance, chose not to use interactive features or online platforms beyond the minimum requirement—not out of negativity, but because of prior negative experiences with technical failure, lack of support, and performance pressure. These actions represent situated agency, grounded in local realities and institutional logic, consistent with Priestley et al.'s (2015) model.

Furthermore, the integration of digital agency highlights that competence, confidence, and accountability (Passey et al., 2018) are not peripheral, but central to how teachers make decisions regarding digital engagement. Teachers with stronger digital skills and higher confidence were more likely to experiment, collaborate, and critically engage with DE, while those with weaker digital foundations tended to limit their engagement to externally imposed requirements. Partially, digital accountability—teachers' sense of ethical responsibility in using technology—as a critical but uneven component served as an important filter in shaping how and why certain tools were adopted or rejected.

Where accountability was internalised as a pedagogical commitment to student learning, teachers were more likely to experiment or adapt resources creatively. However, in many cases, accountability was externally imposed—linked to compliance with inspection or digital platform usage metrics—leading to surface-level engagement rather than meaningful transformation. Teachers' practical-evaluative agency thus became the site where tensions between policy visibility and educational value were most acutely negotiated.

Finally, the integrated framework offers a holistic and dynamic model for our understanding of teacher engagement by accounting for how personal agency and digital skill intersect. It moves beyond binary narratives of adoption versus resistance, success versus failure, and instead positions teachers as digitally mediated agents navigating overlapping layers of reform discourse. The teacher is thus not simply a conduit for reform, but the linchpin whose interpretation, adaptation, and strategic judgement determine whether DE becomes transformative or merely symbolic.

9.5.2 Policy and practical implications

This study challenges the assumption that DE reform can be effectively implemented through top-down directives, technological provision, and standardised platforms alone. Instead, it demonstrates that meaningful digital transformation in rural schools depends significantly on enabling and sustaining teacher agency. Based on the findings discussed across Chapters 7 to 9, several implications emerge for policymakers, school leaders, and practitioners aiming to enhance the quality and sustainability of DE in the rural context.

First, the findings call for a fundamental rethinking of professional development. Current models—characterised by brief, tool-focused workshops—fail to engage with the situated pedagogical realities faced by rural teachers. Many teachers, as shown in Section 9.4.2, made ongoing, real-time decisions about whether and how to integrate digital tools, shaped by their confidence, past experience, and institutional expectations. In this context, practical-evaluative agency emerged as the central mechanism through which teachers negotiated digital reform. Professional development must therefore be reoriented away from compliance and toward pedagogically relevant, context-sensitive learning, supporting teachers in developing both digital fluency and reflective judgement. This aligns with research by Wu et al. (2022) and Tondeur et al. (2017), which shows that digital innovation requires both technical capacity and institutional space for experimentation.

Second, institutional culture plays a decisive role in mediating whether teacher agency translates into meaningful digital practice. As demonstrated in SA Middle School and PP Primary School, leadership styles that prioritised inspection readiness and platform visibility encouraged strategic compliance rather than pedagogical transformation. Teachers often engaged in performative practices—such as using digital tools for presentation or lesson observation—without deeper integration into learning processes. School leaders therefore must move beyond narrow interpretations of national targets and create cultures of trust and collegiality, where teachers feel supported to adapt digital tools in ways that align with student needs and pedagogical intent (Ertmer & Ottenbreit-Leftwich, 2010; Agyei & Voogt, 2012).

Third, the study highlights the limits of current policy design, particularly within China's hybrid governance model. As discussed in Sections 9.2.1 and 9.2.2, DE policy is underpinned by a technocratic logic that equates access with progress and standardisation with equity. Yet this framing often neglects the practice gap—the reality that digital access alone does not translate into meaningful pedagogical change. While the state's vision of the digitally competent, innovative teacher remains aspirational, rural teachers often face infrastructural instability, irrelevant training, and high-stakes accountability pressures. Policy design must therefore move beyond prescriptive metrics and allow for pedagogical flexibility and localised adaptation, recognising that teachers—especially in rural settings—require both autonomy and contextual support to implement reform meaningfully.

Moreover, teacher accountability must be reconceptualised. While digital accountability—understood as the ethical and pedagogical responsibility to use technology meaningfully (Passey et al., 2018)—can be a driver of innovation, it is often reduced to externally imposed indicators in rural schools. As the data in Chapter 8 shown, where accountability was internalised as a commitment to student learning, teachers were more likely to adapt digital tools creatively. Where it was externally driven—tied to inspection targets or promotion metrics—teachers tended to perform minimum compliance. Therefore, systems of evaluation and recognition must shift from measuring digital visibility to valuing pedagogical substance and student engagement.

Finally, while projective agency--teachers' capacity to imagine and pursue longer-term change--was visible in the study, it remained fragmented and constrained. Aspirations

for innovation were shaped and often stifled by digital confidence, workload, and a lack of institutional space for experimentation. Teachers such as Mr Feng, who demonstrated proactive engagement, were the exception rather than the norm. For DE reform to become sustainable, it must invest in the conditions that make projective agency possible—including long-term mentoring, leadership support, and opportunities for teacher-led initiatives.

In essence, this study reaffirms that teacher agency is not an obstacle to digital reform—it is its engine. Policies must not only mandate technological adoption but actively cultivate the conditions that enable teachers to engage critically, creatively, and contextually. Reform, to be effective, must shift from scripting teacher action to supporting teacher judgement—recognising that educational transformation occurs not through devices, but through the everyday decisions made by professionals in classrooms.

9.5.3 Limitations and directions for future research

While this study offers important insights into teacher agency in the context of DE reform in rural China, several limitations—conceptual, contextual, and methodological—should be acknowledged. Rather than viewing these purely as constraints, they highlight critical directions for future research in similar environments.

Although participants were drawn from a range of rural schools, the research was conducted within a single provincial setting due to logistical and accessibility constraints. This limits the geographical breadth of the study and may not fully capture the diversity of rural educational contexts across China's vast and varied regions. These

limitations were shaped largely by time and financial constraints, as I conducted this research as an individual and self-funded doctoral student. Fieldwork was therefore limited to a four-month period. Importantly, this study captured a specific stage of China's ongoing DE reform—the implementation phase of the Education Informatisation 2.0 (EI 2.0) initiatives. While this offered a rich snapshot of teachers' responses amid transition, it also means that longer-term adaptations, policy shifts, or evolving digital practices lie beyond the temporal scope of this study. Future longitudinal research could trace how teacher agency develops over time, particularly as technologies, policies, and school cultures evolve.

Contextual constraints within rural China also pose limitations. As outlined in Chapters 2 and 3, China's hierarchical governance and high-stakes accountability culture do not always create favourable conditions for open teacher agency. In such settings, agency often manifests in subtle, covert, or adaptive forms, rather than explicit resistance or innovation. While the ecological framework is well suited to capturing such nuance, there is a danger that agency may be over-attributed where structural constraints leave little room for manoeuvre. This calls for methodological sensitivity and for future research to consider how agency may be refracted or silenced in highly centralised education systems. Moreover, the study centres on teachers' voices, decision-making, and practices. While this was essential for understanding professional agency, the research did not include the perspectives of students, parents, school leaders, or local education authorities—actors who shape, constrain, or support teacher agency within the broader ecology of reform. Subsequent studies could adopt multi-actor or mesolevel perspectives, examining how agency is distributed, co-constructed, or contested across the wider institutional network.

Additionally, while the integrated framework developed in this study proved analytically useful, it presents certain conceptual and operational challenges. The potential overlap between teacher agency and digital agency raises important theoretical questions. Although digital agency (Passey et al., 2018) was incorporated to illuminate the distinct digital competencies, confidence, and accountabilities involved in DE reform, critics may question whether it is necessary to treat digital agency as a standalone construct. Careful operationalisation was required to distinguish between general agentic practices—such as curriculum adaptation—and those specifically mediated by digital tools, such as platform navigation or content modification. Future research should continue refining this conceptual boundary, exploring whether and how digital agency might be nested within broader models of professional agency. Moreover, the framework integrates models with differing emphases: teacher agency focuses on social structures and human intentionality, while digital agency introduces debates around technological mediation and distributed agency. Questions about the role of non-human actors (such as algorithms or digital platforms) remain under-explored. Future research could engage more deeply with socio-material and post-humanist theories, to better capture how agency is shaped within human–technology entanglements.

Emerging technologies, particularly artificial intelligence (AI), are likely to reshape the contours of teacher agency and digital reform in the years ahead. While not a primary focus of this study, the increasing incorporation of AI discourse into Chinese education policy, such as the Smart Education agenda (MEPRC, 2018) and the New Generation Artificial Intelligence Development Plan (State Council, 2017), signals a significant

shift toward data-driven governance, intelligent platforms, and personalised learning tools. These developments echo global narratives led by actors such as UNESCO and the OECD, which position AI as both a challenge and opportunity for future education systems. Yet, in China, national AI ambitions are largely articulated through directive policies that emphasise outcomes without adequately addressing the implementation gaps faced by rural schools and teachers. For instance, while AI-enhanced education is framed as enhancing efficiency and customisation, the specific affordances and limitations of such systems in under-resourced environments remain under-explored.

Future studies could build on this study's focus on teacher agency by exploring the concept of AI agency, both in terms of teachers' capacity to engage with AI systems critically and ethically, and in relation to students' positioning within algorithmically mediated learning environments. Such research would extend the ecological and digital agency frameworks used in this thesis to account for the growing influence of intelligent systems in pedagogy, assessment, and governance. It may also require interdisciplinary approaches that bring together critical data studies, educational technology, and ethics.

Finally, there are methodological limitations inherent in implementing this framework. While qualitative interviews and observations captured the nuances of teacher decisionmaking, the framework's multi-level nature—spanning individual, institutional, and systemic factors—poses challenges for empirical research. Mixed-method approaches may be needed to fully operationalise both digital and professional dimensions of agency. Moreover, the framework's emphasis on context-specific judgement and lived experience offers deep explanatory power, but may not translate

easily into policyoriented indicators or scalable metrics. This creates a trade-off between analytical richness and practical applicability.

In short, while these limitations present challenges, they also point to critical directions for future inquiry. The nuanced interplay between agency, technology, and reform in rural contexts remains under-theorised and under-studied. By addressing these limitations, future research can work toward a more grounded, equitable, and teachercentred understanding of digital reform—one that recognises not only structural barriers but also the professional judgement and situated creativity of teachers navigating complex and evolving educational environments.

9.5.4 Final reflection

This study set out to explore how rural teachers in China experience, interpret, and enact DE reform, and how their agency manifests within this process. By focusing on teachers' lived realities, this research contributes to a more grounded understanding of policy implementation—one that recognises teachers not as mere recipients of reform, but as active participants navigating a web of institutional expectations, resource constraints, and pedagogical values.

In tracing how teacher agency unfolded across the iterational, projective, and practicalevaluative dimensions, it became evident that agency is not a static attribute, but an ongoing negotiation shaped by context, capability, and constraint. The findings, particularly those in Chapter 8, underscored the dominance of practical-evaluative agency, where teachers made day-to-day decisions under pressure—balancing reform

demands against what was workable and meaningful in their classrooms. These microlevel judgments, though often subtle, proved pivotal in shaping how DE reform was enacted on the ground.

It also reaffirmed the limitations of top-down, standardised approaches to reform—especially when they overlook the structural inequalities and pedagogical cultures of rural education. Digital policy may articulate a vision of innovation and equity, but without addressing teachers' professional realities—such as insufficient training, performance pressures, or lack of technical support—reform risks remaining superficial. Within these constrained ecologies, teacher agency—when enabled—emerges as a vital force for educational sustainability and meaningful transformation.

More broadly, this research has deepened my own understanding of the complexities of educational reform in rapidly changing policy environments. As a researcher with personal and professional ties to rural education, I came to this study with both critical distance and empathetic proximity. The teachers I encountered were neither passive actors nor heroic innovators; rather, they were professionals working within tension—between old and new, tradition and modernity, compliance and creativity. Their stories illuminated not only the challenges of DE reform, but the quiet, often invisible labour required to make reform livable and pedagogically sound.

Ultimately, this thesis affirms that sustainable digital transformation cannot be achieved without recognising—and investing in—teachers as agents of change. Reform must begin not with devices or data, but with the people who teach. Only by centring teachers' voices, supporting their professional autonomy, and fostering conditions for contextual

innovation can policy move beyond rhetoric and realise its transformative potential—especially in rural schools that have too often been treated as peripheral to educational progress. This is both a theoretical insight and a practical imperative, for scholars, policymakers, and practitioners alike.

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Appendices

Appendix A. Template for Data Analysing (Systematic Review)

Paper: Arantes, J., Buchanan, R., (2022). Educational data advocates: emerging forms of teacher agency in postdigital classrooms. *Learning, Media and Technology*,1–21. doi:10.1080/17439884.2022.2087084

Broad aims (of the study/research): This research aimed to explore the implications of the increasing use of machine learning and algorithmically informed educational apps in K-12 classrooms. It sought to understand the role of teacher influencers (teachers who are typically early adopters of technology, who in disseminating their practice on social media have amassed large followers, and therefore have substantial but informal influence within the education sector (Shelton & Archambault)) in advocating for pedagogically and ethically sound technological supports and reconceptualize them as educational data advocates. Postdigital theory was used to analyze the changed relationship with technology in classrooms and propose a framework for advocacy.
Where the study was done? *Australia*
Subjects of the study (gender, age, background; degree to which the group(s)/case(s) are representative of wider trends) or **objects** (e.g. documents): 23 Australia K-12 teachers who identified as Teacher Influencers (have used or are using commercial apps and platforms) within 12 months of the interview were participated in the first round of interview and 16 teachers in second round.

Previous studies or **Concept(s)** that have influenced/informed the study (analytically and critically): research tradition (or policy or theory) that underpins the work:

The study is informed by previous research that recognizes the concept of teacher agency (Biesta, Priestley, and Robinson 2015) and consider them as teacher influencers (Saldana et al., 2019). Möller and Halinen (2000) discuss relationship marketing, a strategy designed to nurture customer loyalty, build interaction with the brand, and nourish long-term engagement. Brown and Hayes (2008) describe influencer marketing as a form of network-based relationship marketing, where the focus is on the individual, rather than a target market. Woods (2016) highlights that the influencer sits at the center of the marketing discourse, and influencer marketing can be generalized as a virtual form of word of mouth advertising, based on the relationship the teacher influencer has with their followers. The study takes a critical approach to understanding how these commercial strategies influence the agency of teachers and the ways in which commercial apps or platforms are used as part of their educational practice.

The research question(s)/hypothesis(es):

- *How do teachers understand the relationship between commercial use of algorithmic systems and personazlized learning tools?*
- *What practices or assumptions are teachers making that disrupt or resist the commercialisation of education?*
- *How are teachers aware of associated implications of 'bringing in' these systems in their classroom?*

Features of research design (e.g. piloting; longitudinal/cross-sectional study; pre-test to post-test; variables; document analysis): *part of a large study*

The type of study (e.g. survey/description/evaluation/trial/case study; analysis of classroom language; analysis of curriculum documents): *narrative*

Methods of data collection (including if available reference to their reliability/validity and how these were established): S*emi-structured interview*

Methods of data analysis (including if available reference to their reliability/validity and how these were established): *Thematic and Epistemic network*

Results/Findings

The study analyzed the behaviors of several teachers who identified as Teacher Influencers. It highlighted the ways in which teachers are actively using digital platforms and technologies to shape their teaching practice and professional development in order to achieve better teaching and learning outcomes. Three main ways were identified -Sharing, Enabling, and Freelancing- demonstrated the agency of teachers in their use of digital platforms and technologies.

Sharing behaviors involved teachers using their relationships to build communities, train, communicate, engage, and share knowledge within their school and beyond. Enabling behaviors referred to teachers who engaged with ambassadorial programs to allow others access to premium features that they would otherwise not be able to access. Freelancing behaviors occurred when teacher influencers were reimbursed through products or services for economic gain. Participants' behaviors traversed all categories, indicating the complexity of the changing role of the teacher in postdigital classrooms.

In the interviews, teachers' descriptions of their own or others' behaviour revealed that these teacher influencers understood that they had a better understanding of EdTech products than most of their peers. Their sharing and enabling behaviors were motivated by a desire to upskill their colleagues and connections, while freelancing behaviors were often motivated by financial or professional gain.

Conclusions (and the relevance of teacher agency and digital technology?)

The study focused on teacher agency in postdigital classrooms. The categories represent a rudimentary typology of Teacher Influencer behavior and provide insight into the changing role of the teacher in postdigital classrooms. They are active agents who can shape the direction and

use of these technologies in the classroom. Their agentic behaviors demonstrate the agency of teacher influencers, that is teachers have the capacity to use, share and negotiate technology and digital for better teaching and learning outcomes.

But this capacity has not yet been utilised. This is because there is still a strong bias in educational research that digital is for the development of standardised tests and achievement. This bias arguably perpetuates the commercialisation of teachers and educational environments. As a result, teachers do not use paid technology for this purpose. Furthermore, Teacher belief is understood as a central element of their agency (Biesta, Priestley, and Robinson 2015). Teachers who incorporate free apps of their choosing into their teaching were found to hold the belief that they are disseminating or enabling greater educational out-comes (Selwyn et al. 2017).

The study also highlights how teacher agency can be leveraged to promote their own brand and generate income. While freelancing behaviors may be viewed as unethical, they still demonstrate a level of agency on the part of the teacher influencer.

Overall, the study emphasized the importance of recognizing and supporting teacher agency in the use of digital technologies.

Appendix B. Debriefing Sheet

Project title: Exploring Teachers' Digital Teaching Practices in China, Utilise Digital Agency Framework and Bourdieu's Theory

Durham University

I am currently undertaking a doctorate in education and am
at the thesis stage and would like to invite you to take part in this research. This study aims to understand how Chinese teachers in country and/or below level schools implementing digital education in the context of "Educational Informatisation 2.0", and wish to facilitate their work and support the innovational teaching practice from a digital approach. Particularly, it is interested in exploring not only the technological and pedagogical challenges teachers face in light of the transformation required by "Educational Informatisation 2.0", but also the dispositions of teachers in the social and cultural context in which they work during the digital transformation process.

If you would like further information about the study or would like to know about what these findings are when all the data have been collected and analysed, please contact me at qiandong.zhou@durham.ac.uk . If you are a participant in the study and have provided me with a contact, I will make sure to email you the results of the study once the research has been written up.

Appendix C1. Participant Information Sheet for Interview

Project title: **Exploring Teachers' Digital Teaching Practices in China, Utilise Digital Agency Framework and Bourdieu's Theory**

Researcher: PhD candidate Qiandong Zhou (Durham University, UK)
Department: School of Education
Contact details: qiandong.zhou@durham.ac.uk

You are invited to take part in the project which aims to explore your teaching experiences in the digital transformation process in line with "Educational Informatisation 2.0".

This study has received ethical approval from the School of Education ethics committee of Durham University.

Before you decide whether to agree to take part, it is important for you to understand the purpose of the research and what is involved as a participant. Please read the following information carefully. Please get in contact if there is anything that is not clear or if you would like more information.

Who conducts this study?

This study is being conducted by Qiandong Zhou (周乾东) as part of the Doctoral Programme in Durham University in the UK.

What is the purpose of the study?

The aim of this study is to understand how Chinese teachers in country and/or below level schools implementing digital education in the context of "Educational Informatisation 2.0", and wish to facilitate their work and support the innovational teaching practice from a digital approach. It is not only exploring the technological and pedagogical challenges teachers face in light of the transformation required by "Educational Informatisation 2.0", but also to understand the dispositions of teachers in the social and cultural context in which they work during the digital transformation process.

Why have I been invited to take part?

You have been invited to take part in this study because you are a K12 schoolteacher who working in the county and/or below level school in China, and are experiencing digital engagement in your work. So, understanding your experiences of digital teaching practices will allow this study to better explore how to support teachers like you for digital education.

Do I have to take part?

Participation in this study is voluntary and it is up to you to decide if you want to take part. If you do agree to take part, you can withdraw at any time, without giving a reason. Consent or refusal to participate in this research project will have ***no repercussions*** on your working. You can request to be withdrawn from the study up to the commencement of data analysis by the researchers by emailing Qiandong at qiandong.zhou@durham.ac.uk

What will happen to me if I take part?

If you agree to take part in the study, you will be taking part in the one-to-one interview (once or twice) with the researcher.

Interviews will be conducted to help make sense of the experiences of teachers' teaching practices during the "Educational Informatisation 2.0". The interview can take place online via an online platform or take place in person agreed by both parties. Interviews will last 40-60 minutes, and audio recorded for analysis purposes only. You will be asked questions that you will be welcome to answer or decline to answer at any point of the interview.

After the reading and discussion of this participant Information Sheet, a consent will be given prior to the interviews. You, the participant, can withdraw at any time during the interview by letting the researcher know you no longer wish to continue the interview. You can also ask to be withdrawn from the study up to the start of the analysis of the data by contacting the researchers at qiandong.zhou@durham.ac.uk Data will be stored OneDrive Business and treated in the way that any identifying information will be anonymised.

Will I be compensated for taking part in this research project?
Yes, if you decide to participate in the project you will be given a small gift (value up to £10) as recognition for your participation in the project. The research acknowledges that taking part in this project requires time and that participants should be duly recognised for their participation in the project.

Are there any potential risks involved?
There are no known risks associated with this research. The researcher is however aware that the topics we aim to explore with you may cause some discomfort. The researcher will try to ameliorate this by creating a friendly and confidential environment where you can feel free to stop any discussion at any point without any fear of judgement or prejudice. The research space created by the project and the researcher aims to be friendly and safe.

Will my data be kept confidential?
The information you provide will be considered confidential, and coded for that purpose. Full anonymity will be guaranteed. Data will be and kept in a passwordprotected computer and stored until 12 months after the completion of the project. In any publications resulting from this research, findings will be presented in such a way that no individual can be identified unless s/he expressly demands otherwise.

What will happen to the results of the project?
This study is mainly for the researcher's doctoral dissertation, and the results may also be published in an academic journal. The researcher aims to make sure that research participants will have access to all the outputs of the project and will email you a copy once these have been complicated.

All research data and records needed to validate the research findings will be stored for 5 years after. All data will be treated and coded so that no identifying information is made available to the public.

Who do I contact if I have any questions or concerns about this study?

If you have any further questions or concerns about this study, please speak to the researcher or the supervisor. If you remain unhappy or wish to make a formal complaint, please submit a complaint via the University's Complaints Process.

Thank you for reading this information and considering taking part in this study.

Appendix C2. Participant Information Sheet for observation

Project title: **Exploring Teachers' Digital Teaching Practices in China, Utilise Digital Agency Framework and Bourdieu's Theory**

Researcher: PhD candidate Qiandong Zhou (Durham University, UK)
Department: School of Education
Contact details: qiandong.zhou@durham.ac.uk

You are invited to take part in the project which aims to explore your teaching experiences in the digital transformation process in line with "Educational Informatisation 2.0".

This study has received ethical approval from the School of Education ethics committee of Durham University.

Before you decide whether to agree to take part, it is important for you to understand the purpose of the research and what is involved as a participant. Please read the following information carefully. Please get in contact if there is anything that is not clear or if you would like more information.

Who conducts this study?

This study is being conducted by Qiandong Zhou (周乾东) as part of the Doctoral Programme in Durham University in the UK.

What is the purpose of the study?

The aim of this study is to understand how Chinese teachers in country and/or below level schools implementing digital education in the context of "Educational Informatisation 2.0", and wish to facilitate their work and support the innovational teaching practice from a digital approach. It is not only exploring the technological and pedagogical challenges teachers face in light of the transformation required by "Educational Informatisation 2.0", but also to understand the dispositions of teachers in the social and cultural context in which they work during the digital transformation process.

Why have I been invited to take part?

You have been invited to take part in this study because you are a K12 schoolteacher who working in the township school in China, and are experiencing digital engagement in your work. So, understanding your experiences of digital teaching practices will allow this study to better explore how to support teachers like you for digital education.

Do I have to take part?

Participation in this study is voluntary and it is up to you to decide if you want to take part. If you do agree to take part, you can withdraw at any time, without giving a reason. Consent or refusal to participate in this research project will have ***no repercussions*** on your working. You can request to be withdrawn from the study up to the commencement of data analysis by the researchers by emailing Qiandong at qiandong.zhou@durham.ac.uk

What will happen to me if I take part?

If you agree to take part in the study, the researcher will come to your workplace to watch how teaching is taking place in the classroom and how technologies are used.

The purpose of the research is not to assess or audit teacher performance. No information about individuals will be reported back to managers at your institution. The researcher will gain the permission from your school principal before visiting your workplace and when the observation is taking place and if the researcher is observing an area where you work, she will ask you for verbal consent before she begin observing. The researcher will sit or stand somewhere out of the way, so she will not interfere with your work and she will watch and take notes. If you have any questions or concerns before or during the observation period, you can ask the researcher.

After the reading and discussion of this participant Information Sheet, a consent will be given prior to the observation. You, the participant, can withdraw at any time before the observation happened, by letting the researcher know you no longer wish to continue the observation. You can also ask to be withdrawn from the study up to the start of the analysis of the data by contacting the researchers at qiandong.zhou@durham.ac.uk Data will be stored OneDrive Business and treated in the way that any identifying information will be anonymised.

Will I be compensated for taking part in this research project?
Yes, if you decide to participate in the project you will be given a small gift (value up to £10) as recognition for your participation in the project. The research acknowledges that taking part in this project requires time and that participants should be duly recognised for their participation in the project.

Are there any potential risks involved?
There are no known risks associated with this research. All of the data it collected will be kept strictly confidential. The observation notes will only be accessed by the researcher. All personal details and information that can identify individuals will be removed from the data when it is being analysed and reported. The study will be carried out in full compliance with all relevant guidance from the Durham University ethics committee and Data protection legislation.

Will my data be kept confidential?
The information you provide will be considered confidential, and coded for that purpose. Full anonymity will be guaranteed. Data will be and kept in a passwordprotected computer and stored until 12 months after the completion of the project. In any publications resulting from this research, findings will be presented in such a way that no individual can be identified unless s/he expressly demands otherwise.

What will happen to the results of the project?
This study is mainly for the researcher's doctoral dissertation, and the results may also be published in an academic journal. The researcher aims to make sure that research participants will have access to all the outputs of the project and will email you a copy once these have been complicated.
All research data and records needed to validate the research findings will be stored for 12 months. All data will be treated and coded so that no identifying information is made available to the public.

Who do I contact if I have any questions or concerns about this study?
If you have any further questions or concerns about this study, please speak to the researcher or the supervisor. If you remain unhappy or wish to make a formal complaint, please submit a complaint via the University's Complaints Process.

Thank you for reading this information and considering taking part in this study.

Appendix D. Participant Consent Form

Participant Identification Code:

Title of Project: Exploring Teachers' Digital Teaching Practices in China, Utilise Digital Agency Framework and Bourdieu's Theory

Name of Researcher: Qiandong Zhou

Name of Researcher's Supervisor: Cora. Lingling Xu

Please read and sign:

I confirm at I have read and understand the information sheet about the above-named project and have had the opportunity to ask questions. I understand that participation is voluntary and that I am free to withdraw at any time prior to the research project being written up, without giving a reason. I agree to the interview being audio recorded and agree to take part in this project.

Name of participant: Name of researcher:

Date: Date:

Signature: Signature:

Appendix E. Schedule of Interview (progressively refined during the fieldwork)

Background for teachers

1. Could you please tell us a little about yourself? (Academic background, years of teaching experience, which subject do you teach?)

Teaching methods (culture: traditions, beliefs, values)

2. What do you think is the focus of rural education? (Bottom line, few outstanding students, limited access to high school and university, most students still focus on basic knowledge and moral development)

3. what is your personal vision for education and what do you value most in your work?

Teacher's experience - past

Life history

4. Can you please share how you use digital technology in your daily life? (What are the key factors you usually consider when choosing numbers and using digital products?)
5. Are there any challenges or rewards in the daily use of digital technology?

Career history

6. How would you define digital education (education informatics)? (Is there any professional training for digital education? May discuss with teachers about some of the relevant elements presented in the video analysis ...)
7. Could you describe how technology is usually integrated into your teaching practice? (In what situations do you use technology and change the way you normally teach? Do you feel you have the freedom to decide which tools to use and how to use them in the classroom?

Sense of agency (identity and role, self-efficacy)

8. Based on your experience, what factors do you think affect your ability to use your initiative to integrate technology effectively in your lessons? (Are current digital technologies sufficient to support you to teach effectively? What are the opportunities and challenges?) (Perceived ease of use)

9. how do you exercise your autonomy to innovate or adapt your teaching when there is a conflict between the school's teaching norms and your teaching philosophy? (How do you see yourself and the autonomy you have playing a role in the integration of technology in the classroom?)

Teachers' attitudes towards digital teaching and learning practices - current

10. How do you see the role of digital technology in achieving your educational vision and professional performance? (Perceived usefulness)

Teachers' projections - the future

11. Do you have your own views on the use of digital technology to transform education and rural teachers in your next work?

Appendix F. Guidance for Classroom Observation

<table>
<tr><td colspan="2">TEACHER:</td><td colspan="2">DATE:</td><td colspan="2">Location:</td></tr>
<tr><td>LESSON/ACTIVITY FOCUS</td><td>Class/Group</td><td>Time of day</td><td>No. OF PUPILS</td><td colspan="2">IN CLASS SUPPORT:</td></tr>
<tr><td colspan="2">Objectives of the Observation</td><td colspan="2">Observation Categories</td><td colspan="2">Notes</td></tr>
<tr><td colspan="2">Observe how the rural context influences teacher agency and the use of technology tools.</td><td colspan="2">Conditions, Availability, Ease of Use:
▪ Availability of technology resources in the classroom.
▪ Teacher awareness of technology resources and supports available.
▪ Ease of use of technology tools available in the classroom.
▪ Teacher adaptations to limitations in technology infrastructure and availability.</td><td colspan="2"></td></tr>
<tr><td colspan="2">Observe the teaching practices around the use of digital technologies in the classroom and the relevant elements of digital agency.</td><td colspan="2">Actual Usage, Digital Capability and Digital Confidence:
▪ Assess the range and appropriateness of technology tools used in the lesson.
▪ Whether or not the technologies deployed (effectively) to promote the lesson and kept moving forward? (organisation, introduction, transitions,…)
▪ How does the teacher use the technology efficiently and comfortably? (voice, body language,…)
▪ How technologies are used effectively to facilitate student engagement/enhance learning?
▪ How the teacher encourages and supports students engage with technologies?
▪ How the teacher communicates with students about technology-related expectations?
▪ How the teacher collaborates with students (or other teachers/administrators) around technology use?</td><td colspan="2"></td></tr>
<tr><td colspan="2">Observe how the teacher exercises their agency to make decisions about technology use.</td><td colspan="2">Teacher autonomy around technology use:
▪ How the teacher decides which technology tools to use?
▪ How is the teacher using technology to balance direct teaching and pupils' learning?
▪ How does technology link to and support teaching?
▪ How is the teacher using technology to create opportunities for appropriate intervention/support?
▪ How the teacher responds to challenges or limitations in the technology available and adoption? (including how the teacher adapts to unexpected issues/problems related to technology use)
▪ Does the teacher use technology to create meaningful teaching and learning activities that break out of the constraints of the current work environment?</td><td colspan="2"></td></tr>
<tr><td colspan="2">Observe how and to what extent digital education is implemented by the teacher in the classroom.</td><td colspan="2">Elements of Digital Education Transformation
▪ Use of a range of digital teaching methods/styles and intervention strategies
▪ How the teacher engages pupils to apply and consolidate existing skills and acquire new learning through technology
▪ Does the teacher enable the use of technology to facilitate pupils to work independently and collaboratively?
▪ How does the teacher use technology to explore and extend understanding, and to identify and correct misconceptions?</td><td colspan="2"></td></tr>
</table>

	▪ How are demonstration & exemplars used to clarify and illustrate successful work? And how are relevant links made to technologies?	