# DARE-RC Conceptual Framework and Research Agenda

# August 2024

# Executive summary

## Introduction

The Data and Research in Education – Research Consortium (DARE-RC) is a 30-month programme funded by the UK Foreign, Commonwealth and Development Office (FCDO) in Pakistan. It aims to bring world-class academic research to education decision makers in a timely and accessible manner. DARE-RC provides an exciting window of opportunity to make a major contribution to answering the following question:

> **What works to deliver educational access, quality, continuity, and coherence to improve learning outcomes, at scale, for all children in Pakistan, especially those most marginalised (e.g. by gender, disability, location, ethnicity, religion, and socio-economic status)?**

The DARE-RC team has been engaging education policymakers, civil society organisations, academics, and the wider research community to co-create a demand-led research agenda that addresses the priorities of the education system in Pakistan.

This document first presents the conceptual framework for DARE-RC, which serves as the organisational foundation for the overall research agenda. We then describe the research agenda, which is based on the conceptual framework and informed by extensive literature reviews and evidence gaps map. The DARE-RC research agenda was co-constructed through iterative consultations, a co-creation workshop, and collective reviews with the key policy and practice stakeholders, the DARE-RC research team, and FCDO. The resulting research agenda is presented here, organised around two cross-cutting themes and four priority areas – each supported by evidence-based justification and policy relevance. For each priority area, key sub-themes that the DARE-RC research will focus on are specified, along with indicative questions.

## Conceptual framework

The **DARE-RC conceptual framework** lays the foundation for the research agenda and serves as the organising structure for all evidence-generating activities undertaken through the programme. It was adapted from the conceptual framework used by FCDO's Education Research in Conflict and Protracted Crisis (ERICC) programme (Kim *et al.*, 2022). The DARE-RC conceptual framework responds to the need for a rigorous body of timely and accessible evidence on key education policy issues and promising, innovative interventions, with a central focus on understanding 'what works' (or does not), 'how', and 'for whom', as well as 'under what conditions it can be scaled', to strengthen education in Pakistan, particularly for disadvantaged groups (e.g. girls, children with disabilities, and those from minority backgrounds).

The framework situates student learning within the interactions of complex systems at multiple levels around key **drivers of learning: educational access; quality; continuity; and coherence**. These drivers are especially critical within Pakistan's context of climate vulnerability, high numbers of marginalised children, and political instability.

Centred around these four drivers of learning, the framework situates the specific pathways at the policy systems and the local systems levels – specifying the actors, the incentives/disincentives, and the processes that can improve education system functioning and build crisis resilience in the society as a whole.

## Research agenda

The DARE-RC research agenda has been developed through a systematic and collaborative process with a wide range of key policy and practice stakeholders and drawing upon the conceptual framework and recommendations from extensive policy and evidence review. The overarching questions in this research agenda fulfil three key criteria:

- They address existing evidence gaps in education in Pakistan and globally.
- They align with federal and provincial governments' policy priorities.
- They align with FCDO's strategic areas of support for education in Pakistan.

The resulting research agenda addresses four priority areas that are critical to transforming the education systems in Pakistan, along with two cross-cutting themes that explore common and systematic solutions needed to improve these four priority areas. These priority areas and cross-cutting themes are summarised in the box below:

**DARE-RC research priority areas and cross-cutting themes**

**Priority Area 1. Improving drivers of learning for marginalised children:**

**What works to improve educational access, quality, continuity, and coherence for marginalised children in Pakistan?**

This priority area focuses on reaching a better understanding of, and supporting, marginalised children's educational experience. By focusing on the four key drivers of learning specified in the framework – access, quality, continuity, and coherence – the research on this priority area will aim to identify the challenges and opportunities that shape the educational experiences of marginalised children in Pakistan, and to identify, design, evaluate, and iteratively improve what works (at scale if possible) to support education for all children Pakistan, how, and for whom, with special consideration of marginalisation based on gender, disability, location, ethnicity, religion, and socio-economic status.

**Priority Area 2. Strengthening the quality of front-line education provision:**

**What works to strengthen the quality of front-line education provision through building teacher and school system capacities?**

The research in this priority area focuses on strengthening the quality of front-line education provision, both at the local and the policy systems levels, through improving teaching effectiveness, teacher management systems, and school leadership. It focuses on research aimed at identifying what works to improve teacher effectiveness for all children in Pakistan, especially in multi-grade and multilingual settings, whether and how strategies to support teacher well-being

can improve teaching effectiveness and student outcomes, and how adaptive school leadership can respond to disruptive events.

## Priority Area 3. Resilient education service delivery:

### What works to develop continuity of resilient education service delivery through improving systems coherence?

Research under this theme focuses on identifying 'what works' to ensure teaching and learning continuity, especially for the most marginalised, when faced with disruptive events. In doing so, research in this area examines reforms/strategies that support educators, identify trajectories of educational outcomes (access, quality etc.) of learners before and after disruptive events, and focus on which systemic barriers due to marginalisation, predict and/or mitigate these. Research under this theme also examines successful practices for system resilience, and factors that shape the (in)coherence of the policy landscape to ensure access, quality, and continuity. It also examines local perspectives and the role of parents and communities, as well as the key challenges to and enablers for effective coordination and the implementation of crisis mitigation and response strategies at various levels.

## Priority Area 4. Accountable education systems:

### What works to enhance accountability to improve education system cohesion in Pakistan?

A child's access to education, and the quality of and continued participation in their learning, is shaped within a system that works at both local and policy levels. The system at the local level works through schools, communities, and households, and at the policy level it works through education policy and stakeholders. The system and stakeholders involved in education set the goals, procedures, resource arrangements, and incentives in regard to achieving access, quality, and continuity of learning. When not aligned, these systemic factors can obstruct meaningful accountability, adaptability, and resource allocation in education system operations. The focus of research in this theme is on examining decentralisation and governance, school monitoring and accountability systems, as well as examining the factors that enable and hinder pilot programmes' effective scale-up in the context of Pakistan.

## Cross-cutting themes: 'Effective data use' and 'scalable solutions'

The DARE-RC research agenda involves two cross-cutting themes that aim to ensure rigour and impact of the research across all four priority areas. First, we prioritise *effective data use across the priority research area.* We emphasise the importance of the collection, management, and effective use of high-quality data to improve education system to ensure educational access, quality, continuity, and coherence of education for all children, with a special focus on a) improving the data systems landscape in regard to marginalised children and communities; b) the management and use of assessment data for improving policy and planning for equitable achievement of learning outcomes; c) supporting data- and evidence-driven decision-making; and d) using data to support the development of adaptation and mitigation strategies when faced with environmental and climate crises.

Second, we prioritise research to generate ***scalable solutions*** that can transform Pakistan's education system landscape at large, through educational policies, programmes, and strategies that have the potential to improve access, quality, continuity, and coherence for all children, with a specific focus on those who are marginalised. Systematic research for identifying and evaluating promising innovations, assessing and refining them for scalability, and managing system-wide changes across the diverse education systems and conditions in Pakistan to ensure sustainability are critical in order to ensure innovative and successful solutions that can transform education for all in Pakistan.

Building on these overarching priority areas, the research agenda outlines the specific sub-themes and indicative research questions within each area, with the aim of refining the research focus. The resulting research agenda offers an expansive menu of research topics and questions to be explored to support education systems in Pakistan. This approach aims to generate high-quality, critical evidence under the DARE-RC, and to guide future policy-relevant research in Pakistan and similar contexts.

# Contents

# 1  DARE-RC conceptual framework

The conceptual framework for the DARE-RC research agenda has been developed to:

- establish the **interconnectedness of various priority areas and themes** identified for investigation and exploration in the research agenda for DARE-RC;
- provide a basis for **synthesising a coherent body of knowledge** and for the **generation of high-quality evidence on 'what works'** to drive meaningful change in learning outcomes for diverse groups of learners, and especially the most marginalised (defined to include girls, children with disabilities, those from economically disadvantaged backgrounds, and/or those belonging to minorities) in Pakistan; and
- outline a **theory of change for policy and programming** for education system improvement in Pakistan.

In the following section, the conceptual framework is presented, with details on its:

1. theoretical foundations, as drawn from the existing literature and frameworks;
2. contextual foundations that are relevant for education system and policy in Pakistan; and
3. pathways of connectedness among factors at individual, household, school, and system levels that affect children's learning experience.

## 1.1  Theoretical foundation

The DARE-RC conceptual framework situates student learning through interactions of complex systems at multiple levels. It adapts and draws on the conceptual framework used by FCDO's ERICC programme (ERICC Framework: Kim *et al.*, 2022; under review). This framework is structured around key drivers of learning (access, quality, continuity, and coherence) which are instrumental within Pakistan's context of climate vulnerability, high numbers of marginalised children, and political instability. Centred around these four drivers of learning, the conceptual framework situates the specific pathways at the policy system level and the local systems level: specifically, the pathways, actors, incentives/disincentives, and processes that can improve education system functioning and crisis resilience in the society as a whole.

The DARE-RC adapts the conceptual framework for the ERICC programme, which is designed to identify and inform promising strategies, practices, and policies to support children's learning and well-being.[1] Reflecting the underlying common tenets of the metatheories underpinning it, the ERICC framework emphasises understanding human learning and development through the interactions of complex systems at multiple levels. It adopts a process-oriented, social-ecological perspective to explore how and why conflict-affected countries affect education systems, identifying for whom and in what conditions education works to support children's learning, development, and well-being, and

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[1] The ERICC framework was developed through extensive stakeholder consultations and built on theories and evidence from developmental science (Bronfenbrenner and Morris, 2007; Cicchetti and Aber, 1998; Lerner, 1998; Tseng and Seidman, 2007), peace education (Novellie et al., 2017, 2019; Pherali, 2016, 2019), sociology (Dryden-Peterson, 2016), and political science and economics (Burde et al., 2017; Pritchett, 2015).

what (intervention) works to improve education in conflict-affected country contexts (Aber *et al.*, 2021; Cummings *et al.*, 2017).

The ERICC conceptual framework was deemed a useful starting point for the development of the DARE-RC conceptual framework. Specifically, the DARE-RC conceptual framework has been developed through a rapid review and mapping of key thematic areas for DARE-RC, and through an extensive process of consultations and peer review.

The DARE-RC conceptual framework situates children's learning within a multi-level system, encompassing **local systems levels**, where learners interact with their learning environment (e.g., households, schools, communities), and **policy systems** across local, state, and national levels, where educational policy, budgeting, financing, and accountability systems decisions are made and managed. This framework organises the education research landscape around four drivers of learning: **access** to, **quality** of, **continuity** in, and **coherence** of learners' educational experiences. In addition, the framework specifies local context- and child-specific risk and protective factors, and identifies different education systems across local and policy levels (schools, communities, households, education policy systems) through which children interact with educational processes. These specifications allow for a narrower focus on specific issues relating to access to schooling for marginalised children: for example, hygiene infrastructure interventions (Adukia, 2017; Freeman *et al.*, 2012); establishing community-based schools (Burde and Linden, 2013); and improving or replacing school infrastructure (Borkum *et al.*, 2012; Lokshin and Yemtsov, 2004; Newman *et al.*, 2002). The framework also recognises the effectiveness of adopting multi-component approaches across different drivers of learning: educational access, quality, continuity, and coherence (Amin and Suran, 2005; Hallman and Roca, 2011; Hallfors *et al.*, 2011; Peña *et al.*, 2008, Rawal *et al.*, 2020).

Moreover, the DARE-RC conceptual framework allows for linking education service delivery and societal factors, drawing upon the premise of establishing an inclusive society to cater to the needs of marginalised children. This emphasis on inclusion aligns with the foundations of social justice (Hameed and Manzoor, 2019; Shaukat, 2015) and advocacy for every individual's equal opportunity to quality education, regardless of her/his multiple identity markers, including abilities or disabilities (Fraser, 2008; Polat, 2011).

## 1.2    Contextual foundation

The importance of education, for every child, is now well-established, with numerous arguments for its positive role in individual development, the expansion of freedom, and the development of capabilities. In particular, quality education has several benefits, including improving learning outcomes, positive youth development, cognitive and socio-emotional development, and increased earning potential (Emezue *et al.*, 2021).

In Pakistan, Article 25-A, regarding the right to education,[2] promulgated in the wake of the 18th Constitutional Amendment, makes it an obligation for the state to ensure the provision of free and

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[2] Article 25-A: Right to education: 'The provision of free and compulsory education is a fundamental human right. Article 25-A guarantees the provision of free and compulsory education to all children aged 5–16 years in such a manner as may be determined by the law' (MoHR, 2023).

compulsory education to all children aged five to 16 years, in such a manner as may be determined by law.

Pakistan's international commitments, such as the Sustainable Development Goals (SDGs) 2030, further reinforce the state's responsibility to ensure equitable access to quality education, facilitating individual development, the expansion of freedom, and the development of capabilities. All seven targets of SDG 4 relate to the provision of education that not only prepares individuals for socio-economic mobility but nurtures the pathways for pursuing the goals of equity and equality.

Education has strong connections with other human development outcomes, like health and well-being, and parental education is known to have a strong inter-generational impact on children's well-being. Education has also been shown to have an impact on national growth and socio-economic development (Hanushek and Woessmann, 2020). Thus, for instrumental reasons, as well as for ultimate ends, ensuring education for all children is now acknowledged to be a very important goal for all countries.

Pakistan has been making efforts to improve access to education, enhance educational quality, and achieve equity in education, with some success. For instance, the success of the Punjab Educational Endowment Fund scholarship scheme in Punjab demonstrates the advantages of providing scholarships to improve the lives of students from families that face educational and social disadvantages (Bari *et al*., 2019). Similarly, the evaluation reports (2021) of the Punjab Education Sector Programme (PESP) and the Khyber Pakhtunkhwa Education Sector Programme (KESP) provide relevant insights into the contextual background of a major education system reform effort in Pakistan. In Punjab, PESP has led to progress on enrolment, both in government schools and through Punjab Education Foundation programmes with private schools, through improvement of infrastructure and facilities in government schools, increases in the number and qualifications of teachers, and some policy initiatives on early childhood education and inclusive education. However, further effort is needed to develop a comprehensive education policy to achieve coherence and alignment on learning objectives, spending decisions, and the role of the private sector. Similarly, KESP has led to policy reforms in teacher recruitment and professional development initiatives, and improved infrastructure in schools. KESP has achieved positive results in regard to equitable access to education, through Girls' Community Schools, the Education Voucher Scheme, and the Girls' Stipend Programme. KESP has also provided the foundations for strengthened accountability mechanisms for good governance and has led to improved data availability and its use in decision-making. For the sustainability and better implementation of reform initiatives under KESP, some areas to be developed in the future have been identified: the need for sustained funding and political will; the need for capacity strengthening for implementation management at district level; learning from loopholes in teacher recruitment and infrastructure improvement interventions; and the need for stronger management control in the Education Voucher Scheme and Girls' Community Schools, including through an alternate implementing mechanism.

Despite some positive trends, Pakistan continues to face a huge challenge in ensuring **access to education** as an estimated 32% of the population aged five to 16 is reported to be out of school (Pakistan Social & Living Standard Measurement (PSLM), 2019–20). Completion of various levels of education also showed a decline in 2019–20 as compared to 2014–15. For instance, at the national level, the population that had completed primary level or higher education showed a slight decline, with 51%

reaching this in 2019–20, as compared to 52% doing so in 2014–15. Moreover, this percentage declined in urban areas, with 65% reaching this level in 2019–20, as compared to 68% 2014–15. In rural areas the picture remained stagnant, with 42% completing primary or higher in 2019–20, as in 2014–15. Further, gender comparison in 2019–20 showed that 60% of males had completed primary level or higher, compared with 42% of females (Pakistan Bureau of Statistics, 2021). Educational access, especially for the most marginalised (e.g. economically disadvantaged, children with disabilities, girls etc.) remains a significant challenge in Pakistan.

Pakistan's educational challenges are exacerbated by impacts of climate change. Pakistan ranks as the eighth most vulnerable country in regard to the impacts of climate change (Eckstein *et al.*, 2021). Climate change and displacement caused by rising global temperatures exacerbate the inequalities and barriers that already exist. In particular, the effects of these are felt more deeply by those belonging to more socio-economically disadvantaged background, by girls and women, by rural communities, and by persons with disabilities (UNESCO, 2023). These climate-related vulnerabilities also affect children the most: in the 2022 floods, children, and their education, were gravely affected across Pakistan (MPDSI, 2022, 51). As noted by Aslam and Rawal (2023), the findings from the Annual Status of Education Report (ASER) 2023 on these issues are stark. Nationally, in rural areas, almost 22% of households (49% of households in Sindh and 47% in Balochistan) noted their household being affected by the 2022 floods. Almost half of the sampled households reported a negative impact on earnings due to these events.

There is evidence that children's **continuity in education and subsequent learning** in Pakistan have been negatively affected by natural disasters (Andrabi *et al.*, 2020). We know that natural disasters and pandemics exacerbate existing educational challenges and create new ones. The global education community learnt this stark lesson from the COVID-19 pandemic, which was called a ticking time bomb (Child Rights Resource Centre, 2021) for young children, adolescents, and youth, whose life trajectories have been altered by the pandemic[3]. Pakistan has the second largest population of children out of school in the world, with at least 22.8 million children in Pakistan outside of formal schooling structures in 2016–17 (Pakistan Education Statistics 2016–17). This figure is likely to be significantly higher now, due to COVID-19, with a particular impact on **girls**, marginalised, and poorer children.

According to some projections, Pakistan's GDP is expected to decrease by a minimum of 18% to 20% by 2050 due to severe climate-related occurrences (World Bank, 2022a). The decline in earnings reported by respondents as a result of natural disasters is likely to have an adverse impact on children's education. We know that climate shocks reduce incomes, which acts a major barrier to education, especially for the poorest, girls, and children with disabilities. In this situation, the limited resources available to households are diverted for survival, instead of being used for learning, trapping vulnerable populations in a vicious cycle of marginalisation and vulnerability, with school dropout, child labour, and, in the case of girls, early marriage and early pregnancy. According to ASER 2023 data, a fifth of the households in rural Pakistan noted their children's schooling being 'extremely affected' by a natural disaster.

Recent evaluation evidence from the Girls Education Challenge has showcased the large learning losses in maths and reading reported by sampled girls in Kenya and Nepal, with household poverty

identified as the single most important factor determining dropouts during the pandemic (Girls Education Challenge, 2022). Estimates suggested that school enrolment declined by 6 percentage points for children aged six to 14 years in Pakistan once schools reopened after COVID-19 closures (Geven and Hasan, 2020). The pandemic also created almost 1.6 million idle youth (neither employed nor in school) in Pakistan alone (Geven and Hasan, 2020). Simulation exercises have shown that even the most optimistic simulation scenario predicted a learning loss for every child enrolled in Pakistan – with school closures resulting in a loss of between 0.3 and 0.8 years of learning-adjusted schooling for an average student in Pakistan.

Current, high-quality research in global contexts shows that without urgent action, climate change will make it increasingly challenging to achieve a **quality** education, especially for disadvantaged populations. Young Lives research has shown how childhood exposure to climate shocks, such as droughts and floods, can have an unequal impact on children's long-term development, especially for girls and young women (Young Lives, 2021).

Even without factoring in these topical challenges facing Pakistan, we know that for most in-school children, education **quality** remains poor. A nationwide study revealed that more than 90% of primary and lower-secondary student participants had only a weak or basic understanding of mathematics and science (Bhutta and Rizvi, 2022). Numerous ASER surveys over the years, and high-quality research in Pakistan, have reported similar findings. The education system remains iniquitous, amid the intersection of multiple crises, including the prolonged economic crunch, climate catastrophe, political instability, and poor allocation and management of financial resources for education (Ersado *et al.*, 2023). Access to quality education remains dependent on parental/household income, gender, geography, religion, ethnicity, and a host of other factors (UNICEF, 2017).

To attain a full and sustained realisation of its human capital potential, Pakistan needs to focus on developing and implementing educational policies and interventions that ensure every child (aged five to 16 years old) has access to quality education, irrespective of any individual, family, or other contingencies. Lessons learnt from educational research from around the world and from within Pakistan can help bring about the achievement of this objective.

Additionally, decades of research have shown that educational institutions can play a significant role in enhancing social and emotional competencies and values – such as self-regulation skills, social skills, critical thinking, gratitude, grit, and adaptability – that contribute to promoting well-being and building resilience and skills that students need to succeed in their careers in today's economy (Caleon *et al.*, 2019; Calo *et al.*, 2019; Cipriano *et al.*, 2023; Durlak *et al.*, 2011; Kim *et al.*, 2024). These studies can be explored further to develop school programmes within Pakistan to foster student resilience in the wake of climatic changes and the disruptive sociopolitical circumstances that often surface within this context.

## 1.3    The conceptual framework

As mentioned above, the DARE-RC adapts the conceptual framework for the ERICC programme (Kim *et al.*, 2022; in preparation), which is designed to identify and inform promising strategies, practices, and policies to support children's learning and well-being.

The adapted DARE-RC conceptual framework situates children's learning within a multi-level system, encompassing **local systems level**, where learners interact with their learning environment (e.g. households, schools, communities) and with **policy systems across local, state, and national levels**, where educational policy, budgeting and financing, and accountability systems decisions are made and managed. Figure 1 presents the adapted DARE-RC conceptual framework underpinning this research agenda.

**Figure 1:     Conceptual framework for DARE-RC**
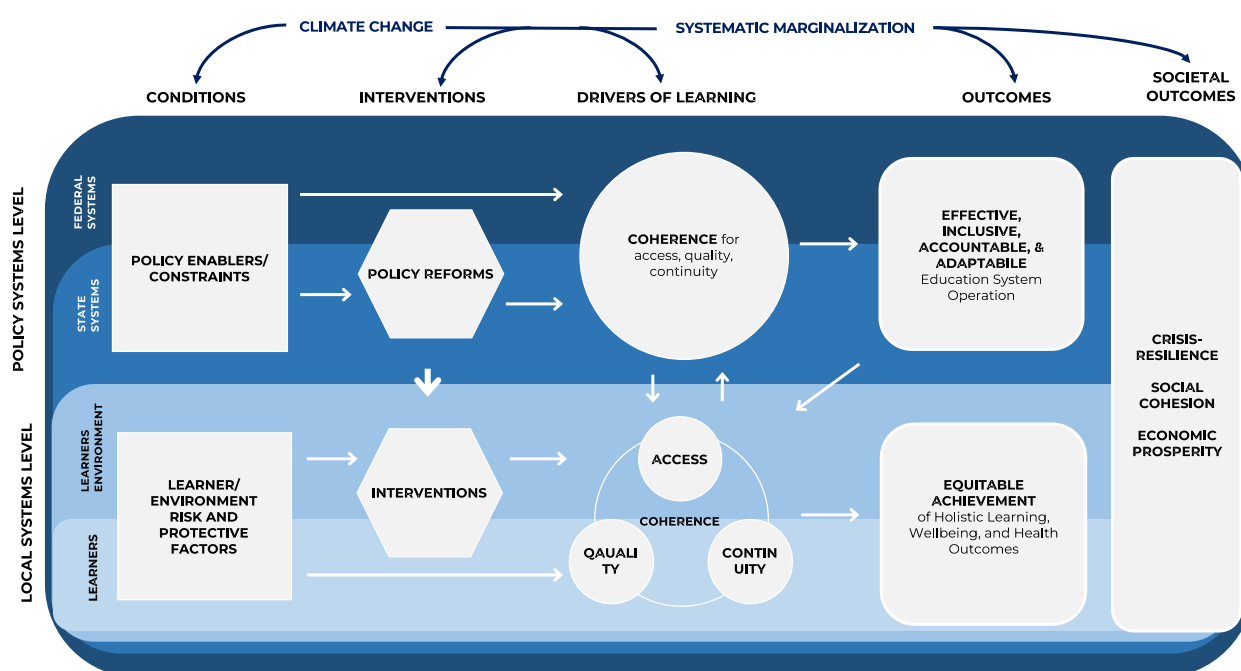


The DARE-RC conceptual framework organises the education research landscape around four *drivers of learning*: **access** to, **quality** of, **continuity** in, and **coherence** of learners' educational experiences. The ERICC framework, from which the current framework draws, is specifically designed to overcome the disciplinary and sectorial fragmentation existing in educational research in development/humanitarian contexts and to situate and incorporate educational research from conflict and crisis contexts within a global education research landscape, and especially within the larger humanitarian and development contexts. Given the increasing threat of climate disasters and the need to prepare education systems for climate-related crises, as well as the need to combat persistent systematic exclusion of marginalised populations, including girls, children with disability, and religious minority groups in Pakistan, the DARE-RC conceptual framework presents a comprehensive and overarching framework for research.

The four *drivers of learning* are as follows:

- **Access:** The opportunity and capacity to participate in educational opportunities.

Access to education involves more than school enrolment: it includes addressing barriers to attendance and engagement in learning opportunities, such as gender inequality, disability, religious and ethnic marginalisation, geographic isolation, and climate disasters, which prevent children from attending school regularly and participating fully in educational activities (World Bank, 2018).

Community and parental attitudes towards, and awareness of, educational access are also crucial in low-resource, crisis-affected contexts (Kabay, 2021; Kabay *et al.*, under advanced review). In the context of distance learning – often the only available education option in crisis conditions – access also means the availability of functional technology and internet (Tadesse and Muluye, 2020).

- **Quality:** The quality of the resources, relationships, norms, practices, and interactions within classrooms/schools, households, and communities.

The quality of education is often measured by and equated with 'learning outcomes', defined as meeting minimum academic competencies (e.g. World Bank, 2022c). However, this framing does not specify the quality of what we should improve, resulting in an uninformative circular logic: improving quality by improving outcomes that define quality. Without identifying concrete educational mechanisms and processes, it is difficult to determine what aspects of quality should be targeted to improve learning outcomes.

Quality in the DARE-RC conceptual framework is defined as the *characteristics of resources and social processes involved in educational experiences* (Tseng and Seidman, 2007). Resources include physical infrastructure and resources (e.g. school building quality, school budget, books, learning devices and materials), learning content (e.g. curricula), and human capacity (e.g. school head's management capacity, teacher qualifications, parental knowledge and investment in education). Social processes involve relationships, norms, the school/classroom climate and practices, and social interactions (e.g. instructional quality, social and emotional support, parenting, community support) that are necessary to safeguard and improve children's holistic learning, development, and well-being.

- **Continuity:** Sustained exposure to education that allows for progress in both learning and grade/school transition.

Time and consistency are frequently overlooked dimensions in the educational literature, yet inconsistency and disruptions are defining characteristics of educational experiences in conflict and crisis contexts. Brief, sporadic access to learning, even if that learning is of a high quality, is insufficient for children to learn and develop. There is a glaring gap in research in regard to how to ensure continuous learning over the school-age years among displaced and/or marginalised populations. This is especially pertinent in a context where frequent climate disasters threaten continued access to quality education that allows for progress in learning and grade transition, as seen in the floods in Pakistan in 2020. Improving continuity is especially pertinent in the DARE-RC conceptual framework, given its focus on ensuring quality education for all children by supporting and preparing Pakistani education systems for the threat of climate disaster and systematic marginalisation. The DARE-RC conceptual framework, therefore, like the ERICC framework, specifies *continuity* of education as one of the key drivers of learning, not just a dimension of access.

- **Coherence:** Alignment and coherence in goals, processes, resource arrangements, and incentives within and across stakeholders and learning contexts at both the local and policy systems levels.

  A child's access to education, and the quality and continuity of their educational experience, are determined by factors at the local systems level (school, community, and household factors) and policy systems level (broader policy systems and stakeholders at local, state, and national

level). The coherence of education systems, in regard to aligning policies, resources, and actions at the school, community, and regional/national levels, is increasingly emphasised as a key mechanism of change in low- and middle-income countries (Kaffenberger and Spivack, 2022; Pritchett, 2015) and contexts affected by conflict and crises (Kim *et al.*, 2024; Tubbs Dolan, 2017). This approach includes alignment of various stakeholders and education systems across levels, including governing authorities (e.g. national/state/district ministries of education) and their formal and non-formal school systems, local implementors and stakeholders (e.g. schools, local non-government organisations and civil societies, communities, parents, teachers, service providers, religious organisations, and authorities). Coherence, or lack thereof, in incentives, goals, procedures/norms, and resources/capacities within organisations/systems and across these stakeholders can facilitate or hinder the achievement of access, quality, and continuity in education. Ensuring education systems' coherence at both policy and local levels, horizontally across stakeholder groups (e.g. aligning education goals across local schools and communities; and aligning the education budget with policy implementation), is critical to ensure learners' access to education, its quality, and its continuity. Vertical coherence, across local, state/regional, and national tiers of education systems operation (Sarwar *et al.,* 2024), is especially crucial to ensure an effective, adaptable, and accountable education policy system in the context of Pakistan, where education is a debated subject, and where national, state, and local actors' priorities, goals, incentives, resources, and capacities may not always align.

By focusing on these key drivers, the DARE-RC conceptual framework allows for the organisation of the DARE-RC research agenda so as to examine conditions for success, identify existing barriers to and enablers of *drivers of learning*, evaluate promising programmes and policies that address *drivers of learning*, and understand how they work. This systematic approach can provide a foundation for concrete policy and programming solutions based on a holistic understanding of the context, conditions, and mechanisms: addressing the issues of *why, how, in what conditions, and for whom.*

Centred around these four drivers of learning, the DARE-RC conceptual framework describes and identifies specific pathways, actors, and processes that can improve or compromise education policy systems operation and equity, and achievement of child outcomes, ultimately affecting the social cohesion, economic prosperity, and crisis resilience of the society as a whole.

## Pathways at the policy systems level
*Policy system conditions that enable or constrain* effective policy decision-making processes and implementation include available financial resources (e.g. education budget), sociopolitical resources (e.g. social norms on educational investment, perception of refugee populations), and human resources (e.g. workforce capacity), and the landscape of the political economy and accountability systems (e.g. data and monitoring infrastructure and capacity, policy, and procedures on accountability mechanism). These policy systems enablers and constraints affect the **coherence** of the policy systems decisions and operations relating to ensuring access to, and quality and continuity of, education for children (Nicolai *et al.*, 2015; Sarwar *et al.*, 2023). Any resulting incoherence, in turn, compromises the ***effective, inclusive, accountable, and adaptable education systems' operation*** to provide and implement system-wide policies, financing, and accountability mechanisms to achieve access to, and quality and continuity of, education at the local level.

## Pathways at the local systems level

*The **conditions and characteristics of local systems*** (e.g. teachers, schools, classrooms, households, and communities), and of the children themselves, can directly hinder or facilitate children's access to education, and the quality and continuity of their educational experiences. Households, teachers, schools, classrooms, and communities have different human capacities (e.g. parents' education level and attitudes towards education, teachers' knowledge and pedagogical skills), resources (e.g. curricular materials, household income, school budgets, community resources), and arrangements (e.g. allocation of the school budget, grade-level placement, classroom grouping) that determine children's experience as regard access to, and quality and continuity of, education (Arakelyan and Ager, 2021; Kim *et al.*, 2020; Reed *et al.*, 2012). Children's own characteristics (gender, disability, membership of a marginalised group), history (e.g. exposure to violence, experience of interrupted schooling), capacities and skills (e.g. learning level, social skills), and relationships (e.g. with teachers, parents, community members) can also present barriers to engaging in their own learning and development, or could be an asset that can help improve their access to, and the quality and continuity of, education (Arakelyan and Ager, 2021; Kim *et al.*, 2020, 2023). These risk and protective factors, and the impacts of conflict-affected contexts on these factors, affect ***children's access to, and the quality and continuity of, education*** available in local systems, including the community, the household, and schools/classrooms. The coherence across these local systems (e.g. alignment in parental and community expectations for education and the learning content schools provides; match between home language and instructional language) are also important factors and mechanisms contributing to access to, and the quality and continuity of, education. Compromised educational access, quality, and continuity, as well as incoherence among local systems in conflict-affected country settings, then affect ***achievement and equity in children's*** outcomes across multiple domains, including ***academic*** and ***social and emotional learning,*** as well as ***physical and mental health outcomes***.

Based on this comprehensive understanding of education systems, the DARE-RC research agenda is organised into four main themes that directly map onto the four drivers of learning:

1. Improving **drivers of learning (access, quality, continuity, coherence)**, especially for marginalised children (e.g. children with disabilities, girls, children from minority backgrounds, those from socio-economically disadvantaged backgrounds etc.).

2. Strengthening front-line education **quality**: for example, through building teacher and school capacity.

3. Ensuring resilient education service delivery and **continuity** through systems **coherence**.

4. Enhancing accountability systems and **coherence**.

# 2 The research agenda development process

The DARE-RC research agenda has been developed through a systematic and collaborative process. The overarching questions in the research agenda fulfil three key criteria:

## Research Agenda

**01**
They address existing evidence gaps in education in Pakistan and globally

**02**
They align with federal and provincial governments' policy priorities

**03**
They align with FCDO's strategic areas of support for education in Pakistan

**Figure 2: Key Criteria fulfilled by Research Questions in the DARE-RC Research Agenda**

**During the inception period, the DARE-RC team systematically engaged with a range of stakeholders**, from policymakers at both federal and provincial levels, to civil society organisations, and development partners. These included the Federal Education Ministry, four provincial education departments and the education department in Gilgit-Baltistan, the United Nations Children's Fund (UNICEF), the World Bank, Japan International Cooperation Agency (JICA) and national civil society organisations. These consultations took the form of formal focused discussions, which helped identify priority areas for evidence generation pertinent to the policy and practice of education service delivery in Pakistan. Discussions with the provincial officials also focused on the pilot interventions which they considered to be worth scaling up.

**Concurrently, a series of desk-based literature reviews were conducted to determine gaps in existing evidence.** An 'evidence gap map' was commissioned whereby existing academic literature was reviewed to discern any knowledge gap in relation to the key educational concerns. Eight thematic experts mapped the evidence landscape by undertaking literature reviews within their research areas, generating a comprehensive longlist of research questions. This extensive list was then further synthesised into a refined set of research questions, in close coordination with FCDO.

To deliberate on the research questions, sub-themes, and conceptual framework with an extended number of stakeholders, a 'Research Agenda Co-creation Workshop' was organised in October 2023. This brought together representatives from provincial and federal government departments, academia,

civil society, development partners, and thematic leads. Inputs received from this workshop through the process of interactive sessions, group work, presentations, and panel discussions resulted in the prioritisation of the research themes and questions. This was further combined with insights from the evidence gap map analysis and the evolving conceptual framework to shape the research agenda with four broad priority areas.

To further strengthen the research agenda through deliberations on the evidence gap, and policy relevance of the proposed research agenda, the thematic leads, along with the core DARE-RC team and FCDO, came together for a two-day hybrid workshop in April 2024. The thematic leads presented their analytical perspectives on their respective themes, highlighting evidence gaps and policy relevance. This was followed by a critical review by the workshop discussants and participants. This informed thematic commentaries, as well as research questions, highlighting the interconnectedness between all four priority areas and themes and the prioritisation of research questions in the research agenda.

The research agenda was further revised after peer review by education experts. and the ERICC framework was adapted for use for this programme in July 2024. Two external experts were engaged to review the DARE-RC research agenda. Firstly, Dr Ha Yeon Kim reviewed the agenda and adapted the ERICC conceptual framework for the DARE-RC programme, given its relevance to the socio-economic-political landscape of Pakistan. The research agenda, priority areas, sub-themes, and indicative questions were further refined based on the research and methodological framework, being designed to systematically investigate and provide evidence on 'what works' to improve access, quality, continuity, and coherence of education provision and to support equitable achievement of holistic learning outcomes for all children in Pakistan. This framework organises types of research conducted under DARE-RC across the research on the *foundation for what works*, *what works,* and *scaling what works*.

Dr Monazza Aslam further refined the DARE-RC research agenda around the revised conceptual framework and incorporated Dr Kim's suggestions. The research agenda retained the original four priority areas, which were interspersed with the four drivers of learning (access, continuity, quality, and learning), while data and scaling emerged as two cross-cutting themes across all of the priority areas.

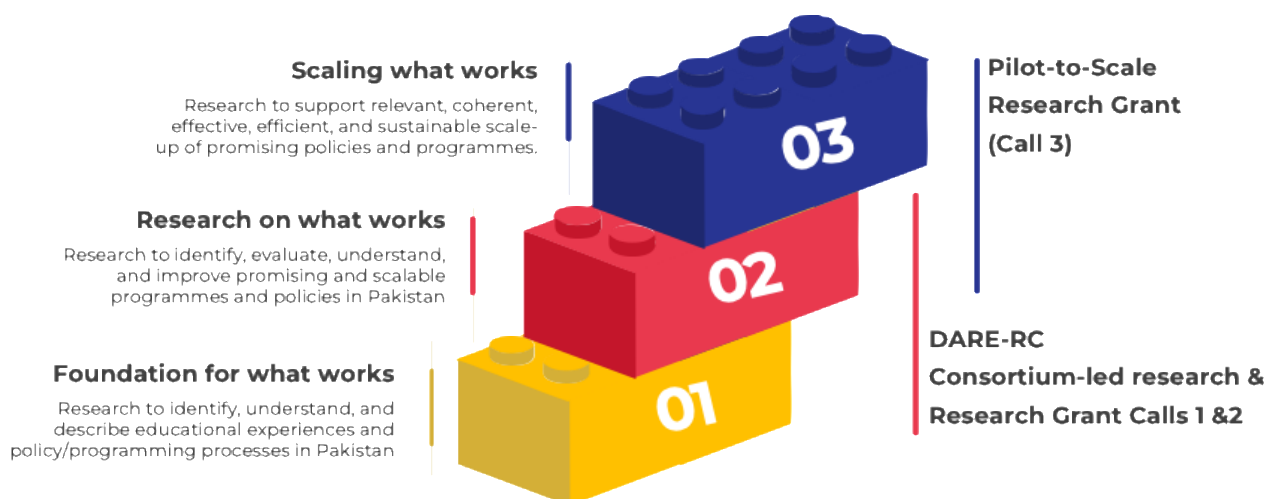**Figure 3: Research Agenda Development Process**
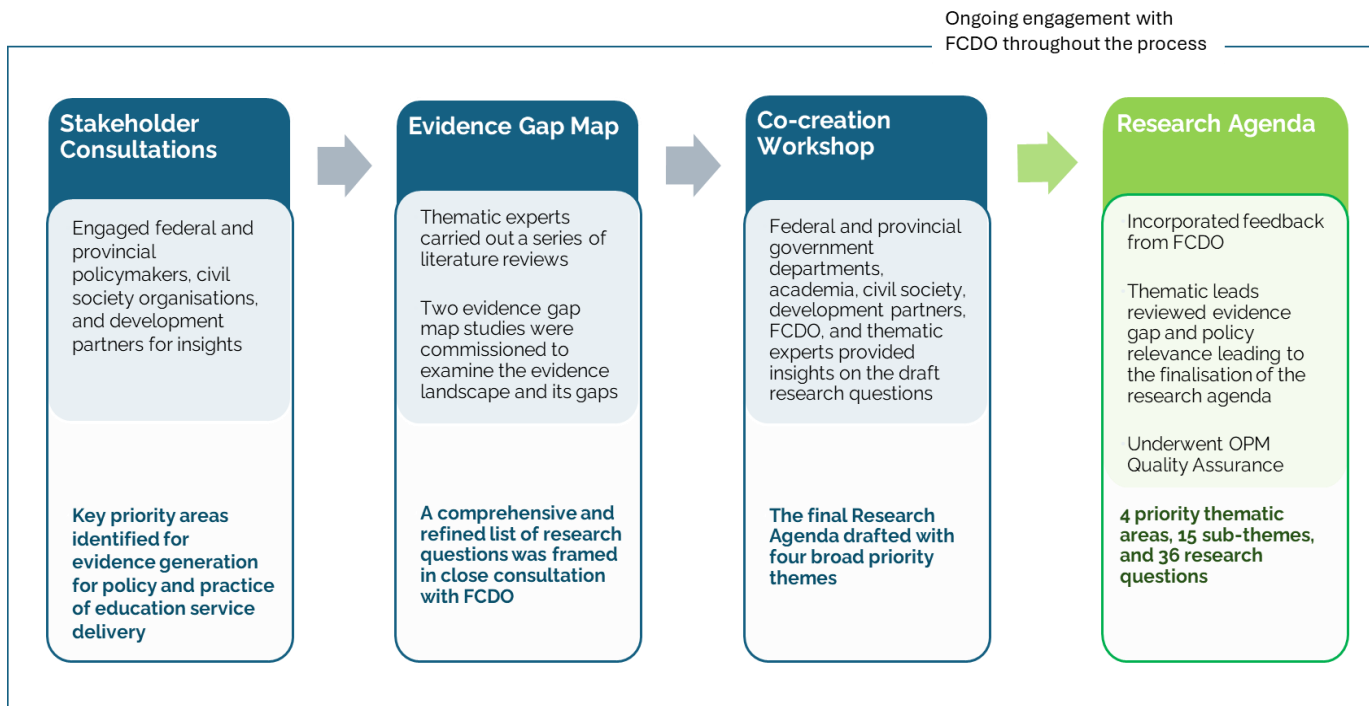


This iterative and inclusive approach ensured that the research agenda is well-informed, relevant to the country's context, and responsive to the needs of both policymakers and the broader community in research and practice working with education service delivery in Pakistan.

# 3 Research and methodological framework

The research and methodological approaches for the DARE-RC research agenda are designed to systematically investigate and provide evidence on 'what works' to improve access to, and quality, continuity, and coherence of, education provision and to support equitable achievement of holistic learning outcomes for all children in Pakistan. Through assessing key foundational evaluation criteria proposed for international development interventions – relevance, coherence, effectiveness, efficacy, and sustainability (https://www.oecd.org/en/topics/sub-issues/development-co-operation-evaluation-and-effectiveness/evaluation-criteria.html) – this approach is grounded in the DARE-RC consortium's commitment to producing research that delivers actionable insights for policy and practice. It addresses core questions that are critical to understanding educational challenges and opportunities in Pakistan, targeting both academics and funders.

The research framework is structured around key research 'building blocks' of what works, from the research on *the foundation for what works, what works, and scaling what works*, across four priority areas and two cross-cutting themes, and it builds on the DARE-RC agenda's foundational questions: What does it look like? What works? How? For whom? In what conditions? At what cost? These building blocks guide the selection and application of various methodological approaches, ensuring that the research agenda is adaptable, context-sensitive, and comprehensive in scope. DARE-RC consortium-led research, supported by external research via the Research Grant Call 1 and 2 mechanism, will largely focus on the first two building blocks: understanding the **foundations for what works** and **research on what works**. The research from the Pilot-to-Scale Research grant (Call 3) mechanism will focus on generating evidence on the second and third building blocks: **research on what works** and **scaling what works.**



**Building Blocks For DARE-RC Research**

**Scaling what works**
Research to support relevant, coherent, effective, efficient, and sustainable scale-up of promising policies and programmes.

**Pilot-to-Scale Research Grant (Call 3)**

**Research on what works**
Research to identify, evaluate, understand, and improve promising and scalable programmes and policies in Pakistan

**DARE-RC Consortium-led research & Research Grant Calls 1 &2**

**Foundation for what works**
Research to identify, understand, and describe educational experiences and policy/programming processes in Pakistan

Research for Relevance, Coherence, Effectiveness, Efficacy, Sustainability
**What? How? For Whom? In What Conditions? At What Cost?**

**Figure 3: Building Blocks for DARE-RC Research**

## 3.1 Research and methodological approaches addressing building blocks for DARE-RC research

The research under the DARE-RC research agenda can use a variety of methods, depending on the type and nature of the research question being answered. Some questions can be answered using mixed-methods approaches, while research to answer the others will adopt a case-study approach or conduct ethnographic research. Some research questions can be answered by adopting a political economy lens, while others will require secondary analysis of existing large-scale quantitative data. Syntheses and rigorous reviews of evidence can be undertaken. Many research questions will require collecting quantitative and qualitative primary data and conducting experimental or quasi-experimental studies to answer what works, how, for whom, and in what conditions. We will also encourage research identifying promising educational innovations, assessing and enhancing their scalability, examining the process of scale-up implementation, and supporting the Pakistan education systems' capacity to take up, institutionalise, and sustain effective policy initiatives/programmes/strategies at scale.

### Foundations for what works

**Research approach.** The **'Foundations for what works'** component of the DARE-RC research agenda seeks to lay the groundwork for **understanding the intricate realities of education in Pakistan.** This phase of the research emphasises exploring the lived experiences of children, educators, families, and communities. It delves into existing policies, practices, and programmes to provide a nuanced view of the educational landscape.

Central to this phase are research questions aimed at capturing what education looks like in practice and the specific conditions influencing these experiences. Across the DARE-RC research agenda's four priority areas, researchers ask the following questions:

- **What does it look like?** To understand the lived experience of children, education providers, families, communities, and education stakeholders; and to identify existing education policies, practices, and programmes available to diverse communities in Pakistan.
- **How do things work?** To understand how learning and development occurs; and how the education policies and programmes are designed and implemented
- **For whom?** To identify different ways in which marginalised children and communities are experiencing educational experiences.
- **In what conditions?** To identify enablers of and hindrances to educational experiences across diverse contexts, conditions, and regions.

Understanding how these experiences and realities vary across different socio-economic, geographic, and cultural contexts is vital for creating an inclusive picture of the educational challenges and opportunities that exist in Pakistan. Equally important is identifying how

marginalised groups – those who have historically been underserved or overlooked – experience education differently, and what enablers or barriers affect their access to, and success in, education. Research on these questions provides vital information on how to design, implement, evaluate, improve, and sustain effective education policies, programmes, and strategies that work in the diverse contexts of Pakistan.

**Methodological approach.** To answer these questions, the methodological approach in this phase relies on a combination of empirical research, systems-level analysis, evidence synthesis, and secondary data analysis. Empirical studies involving primary data collection for both qualitative data (such as interviews, focus groups, ethnographic studies, and participatory action research) and quantitative data (including cross-sectional and longitudinal surveys) are key to gaining deep, context-sensitive insights and identifying the variations in, and prevalence of, educational experiences and processes. Systems-level analysis, such as the RISE Diagnostic (Kaffenberger and Spivack, 2022; Pritchett, 2015), and political economy analyses reveal systemic influences on policy and practice. Finally, leveraging existing high-quality datasets, such as Multiple Indicator Cluster Surveys (MICS), Education Management Information System (EMIS), and school report cards, as well as synthesis of existing evidence through systematic reviews and meta-analyses, allows researchers to explore broader trends and test hypotheses related to the current state of education.

## Research on what works

Research approach. Building on these foundational insights, the 'Research on what works' component of the DARE-RC is centred on identifying and evaluating the effectiveness of educational policies, programmes, and strategies. This phase moves beyond descriptive exploration to provide evidence that can inform actionable change in education practices and policies. It seeks to uncover not just whether an intervention works but also how and why it achieves its outcomes, ensuring that the findings can be practically applied to improve education systems.

Research questions in this phase are aligned with the DARE-RC research agenda's commitment to understanding the impacts and mechanisms of educational interventions. Key questions include:

- **What works?** To identify and evaluate the effectiveness and scalability of educational policies, strategies, and programmes that demonstrate promise in improving educational outcomes across diverse settings in Pakistan.
- **How does it work?** To examine the theories of change underpinning effective policies and programmes, understanding the mechanisms through which these interventions bring about positive impacts.
- **For whom?** To investigate how different groups, particularly marginalised children and communities, are affected by these interventions, exploring variations in impact to ensure that educational policies are equitable and inclusive.
- **In what conditions?** To assess the contextual factors that facilitate or hinder the success of educational programmes and policies across varied socio-economic, political, and regional landscapes.

- **At what cost?** To assess the cost of interventions/policies and to develop strategies that can maximise the value for money, while understanding the cost of reaching the most marginalised.

This phase recognises the importance of examining the pathways of change and the contextual enablers or barriers that shape the effectiveness of interventions. By exploring these aspects, the DARE-RC approach supports the development of tailored solutions that work for diverse populations and in varied conditions within Pakistan.

**Methodological approaches.** To answer these questions, a range of rigorous methodological approaches is employed. Experimental and quasi-experimental studies form the backbone of this phase, allowing researchers to establish causal relationships and evaluate programme efficacy through controlled implementation studies and proof-of-concept trials. Pilot studies play a crucial role in testing interventions on a smaller scale to gather preliminary evidence before broader application, while full-scale effectiveness evaluations assess the impact under real-world conditions. Mixed-methods studies are particularly valuable for generating insights to provide a comprehensive view of how and why interventions succeed or fail. Cost analysis, ranging from costing studies to cost effectiveness and cost–benefit analyses, will be critical to assess the relative value of various educational policy, programmes, and strategies examined through DARE-RC research.

Systems-level analyses, such as political economy assessments and systems diagnostics on the conditions, decision-making, and processes of programme and policy design and implementation, offer a broader perspective by examining the policy and systemic factors that influence programme design and implementation. These analyses help identify potential challenges and enablers within the education system. Evidence synthesis through systematic reviews and meta-analyses of the existing interventions and policy impacts aggregates results from multiple studies, building a robust evidence base for policymakers and funders to draw from. Additionally, secondary data analyses leveraging existing high-quality datasets provide opportunities for quasi-experimental studies that offer causal insights and test theoretical frameworks related to programme effectiveness.

## Scaling what works

**Research approach.** The **'Scaling what works'** component of the DARE-RC research and methodological approach focuses on understanding how successful educational policies and programmes can be adapted and scaled to benefit more children and communities across Pakistan, with a specific focus on reaching the most marginalised children and communities through scale-up. This phase examines the **strategies and processes involved in scaling up, both for breadth (i.e. an increase in beneficiary numbers and geographical coverage) and depth (i.e. an increase in the capacity to reach the most marginalised children and communities)**, while maintaining the fidelity and effectiveness of the interventions. It emphasises the importance of generating evidence to support not only expanding the reach of educational policies, programmes, strategies, but also ensuring that scaled programmes continue to meet the needs of different populations, especially those who are marginalised, and remain responsive to varying conditions, by refining and adapting the scaled up

innovations and transforming the education system of Pakistan to take ownership of, institutionalise, and sustain the educational innovations system-wide.

Key research questions in this phase include the following:

- **What strategies work for scale-up?** To identify the scalable components and delivery strategies of effective policies and programmes that have the potential to reach a greater number of beneficiaries and the most marginalised populations and communities, while ensuring their adaptation retains impact and fidelity.
- **How does scale-up work?** To understand the processes and mechanisms involved in expanding educational programmes, including the challenges and bottlenecks encountered during broader implementation; identifying and evaluating strategies to ensure and improve the coherence of the scale-up strategies with existing local and policy systems; and assessing the trade-offs and tensions in managing resources and strategies for scaling for breadth and depth.
- **For whom?** To assess the impact of scaled interventions on different stakeholders, especially marginalised children, and to investigate how outcomes may vary when programmes are implemented at scale.
- **In what conditions?** To identify the contextual factors that support or hinder the scaling process, ensuring that programmes can adapt to diverse educational, socio-economic, sociopolitical, and cultural settings and conditions of marginalisation within Pakistan's educational landscape.
- **At what cost?** To evaluate the financial sustainability of scaling efforts, analysing whether programmes can be expanded cost effectively, and to identify and test strategies to improve cost effectiveness while maintaining quality and impact. The questions regarding cost for scale should include estimating trade-offs and strategies to maximise the value of investment for both breadth of impact, in terms of beneficiary numbers and geographical coverage, and depth of impact, in regard to reaching and serving the most marginalised children who are systematically underserved and discriminated against within Pakistan's current education landscape.

Scaling successful interventions requires a nuanced understanding of how to balance consistency and flexibility across different contexts and conditions – including geographical, cultural, and sociopolitical contexts, as well as conditions of marginalisation due to gender, disability, location, ethnicity, religion, and socio-economic status. This phase of research emphasises participatory approaches that incorporate the perspectives of various stakeholders, including marginalised children and communities, policymakers, education providers, and funders, fostering buy-in and collaboration that can enhance the success of scale-up initiatives.

**Methodological approaches.** The methods employed in this phase include comprehensive systems-level analyses that explore the broader implications of scaling policies and programmes, and political economy analyses and stakeholder participatory action research to build consensus and co-construction of the learning and research agenda, which can contribute to understanding system-wide change and continuous improvement. It is also essential that research on scaling what works includes an assessment of the adaptability and scalability of the specific policies, programmes, and strategies of interest, and a needs

assessment of the specific implementation context to evaluate the feasibility and sustainability of the scaled-up innovation across, and its fit with, the targeted population and communities. Gauging the readiness, flexibility, and adaptability of the innovation implementation across different conditions and contexts is critical, while also preserving its core components and intended impacts.

Experimental and quasi-experimental methods, including randomised controlled trials and A/B testing, as well as studies leveraging complex experimental designs, such as the Multiphase Optimisation Strategy (MOST) and Sequential Multiple Assignment Randomised Trials (SMART), that allow testing of various implementation components and timing to support adaptive intervention design and implementation, are particularly effective in evaluating **multiple pathways for scaling** interventions and optimising them for specific contexts. These research designs and methods can be liberally applied to identify the most effective ways to reach, and to enhance impacts for, the most marginalised populations and communities, by systematically testing different delivery strategies, modalities, and contents that work better for girls and children with special education needs and disabilities (SEND), those in rural areas, minority ethnic and religious groups, and those experiencing extreme poverty – populations that may not be reached and best served by conventional approaches to education provision at scale.

Cost analysis is also a critical component at this stage, involving costing studies, cost effectiveness evaluations, and cost–benefit analyses to assess whether scale-up strategies are financially viable. These assessments help funders and policymakers determine the value for money and ensure that scaled interventions are sustainable in the long term. Studies could conduct value for money assessments for scale, in regard to both breadth and depth, explicitly accounting for both the cost–benefit of reaching the greater number of children across greater geographical coverage within Pakistan (scaling for breadth), and reaching and serving the most marginalised populations and communities (scaling for depth).

Through this research and these methodological approaches, the 'Scaling what works' phase of the DARE-RC research agenda ensures that promising educational policies, programmes, and strategies can be expanded effectively and sustainably with breadth and depth. This contributes to the ultimate goal of transforming educational outcomes across Pakistan by bringing evidence-based solutions to scale and adapting them to serve diverse communities.

# 4 The research agenda

## 4.1 Introduction

A large body of evidence exists globally, and there is some high-quality evidence specifically in Pakistan, that can help guide researchers and policymakers on the 'best' education interventions, what level they can be targeted towards, and what outcomes specifically they can help achieve in the most cost effective manner (e.g. Banerjee *et al.*, 2023). It is worth noting, however, that interventions on 'what works' to improve student learning and educational experiences may have worked or been feasible in another context (or even within a province in Pakistan) but may fail to work given political economy factors, implementation constraints, or other challenges within Pakistan's context. Before decisions are made there must be a comprehensive examination of contextual factors, such as context-specific needs, political economy factors, implementation constraints, including consideration of how, for whom, and at what cost in the diverse contexts of Pakistan.

The DARE-RC research agenda aims to propose research questions to guide new, innovative, and high-quality research in Pakistan that addresses existing evidence gaps in education in Pakistan and globally.

In recent years, critical investments and donor support in Pakistan have also generated high-quality data on key education indicators: for example, the ASER surveys have been generating data on foundation learning for children aged five to 16 since 2010, and the latest round of data collection (2023) has, for the first time, collected data on the effects of climate-related incidents on individuals across the country; and the Pakistan Institute for Education has been collecting comprehensive assessment data from across Pakistan to inform evidence-based decision-making by the government. These data provide a rich opportunity for researchers to align research with federal and provincial governments' policy priorities, and with FCDO's strategic areas of support for education in Pakistan.

Based on these two critical aspects, there is a need for DARE-RC to focus on the development of a rigorous body of timely and accessible evidence on key education policy issues and promising, innovative interventions – with a key area of interest being understanding the foundations of, and research on, 'what works' (or has not worked), as well as how to support 'scaling what works', to strengthen education in Pakistan, including for disadvantaged groups (e.g. girls, children with disabilities, and those from minorities).

The subsequent sections describe the process of developing the research agenda and its four priority areas, sub-themes, and indicative research questions. The research agenda is supported by commentaries on research priorities in relation to existing relevant research, especially from Pakistan, and its relevance for policy in the country. These commentaries link research questions with existing gaps in evidence on what works to improve education systems and processes for meaningful learning, especially for the more marginalised in Pakistan.

This section introduces the research agenda, which is firmly grounded in the DARE-RC conceptual framework. This conceptual framework for the DARE-RC research agenda summarises key priorities for research identified through a review of literature and consultations with relevant education

stakeholders and experts on education in Pakistan. Based on the conceptual framework, the overarching question for research under DARE-RC is:

'What works to deliver educational access, quality, continuity and coherence to improve learning outcomes, at scale, for all children in Pakistan, especially those most marginalised, e.g. by gender, disability, location, ethnicity, religion, and socio-economic status?'

The overarching question focuses on key elements of education that drive learning and the well-being of, all children in Pakistan, with explicit inclusion of and emphasis on the experience of marginalised children in Pakistan who are either out of school or whose learning is not at the appropriate age or grade level. This framework provides a basis for selected priority areas for research, sub-themes, and broad research questions within each area, as described in this section (4).

At the centre of DARE-RC's conceptual framework are the fundamental indicators for equity and achievement in learning in schools: access to and continued participation in education, as well as the quality of the learning experience for all learners. Multiple programmes, policies, and stakeholders work together as an education system towards the achievement of these indicators. The effectiveness of the whole education system is directly linked to the level of integration, accountability, coherence, and cohesion among these multiple programmes, policies, and stakeholders working at the student, school, community, and system levels. These indicators are closely interlinked and manifest in sustained quality learning experiences for all learners.

This research agenda identifies four priority areas and two cross-cutting themes that cut across the areas identified. It is worth noting that these priority areas and sub-themes are interconnected (e.g. Priority Area 2 focuses on teachers and teaching, which is intricately linked to two drivers of learning (quality and coherence) investigated under Priority Area 1). The table below summarises the research agenda.

**DARE-RC research agenda, at a glance**

**Overarching question:** 'What works to deliver educational access, quality, continuity and coherence to improve learning outcomes, at scale, for all children in Pakistan, especially those most marginalised, e.g. by gender, disability, location, ethnicity, religion, and socio-economic status?'

| Priority areas | Sub-themes | Indicative research topic that can be explored: | Indicative research topic relevant to Cross-cutting Theme A: Effective data use | Indicative research topic relevant to the Cross-cutting Theme B: Scalable solutions |
|---|---|---|---|---|
| **1. Improving drivers of learning for marginalised children:** What works to improve drivers of learning (educational access, quality, continuity, coherence) for marginalised children in Pakistan? | **1.1** Understanding **risk and protective factors** affecting marginalised children's access to, and the quality and continuity of their, education | • Lived experiences of children from marginalised backgrounds.<br>• Parental, community, and school-level facilitators of and barriers to marginalised children's educational access, and the quality and continuity of their education.<br>• Representation of marginalised children in the National Curriculum of Pakistan<br>• Policy systems-level enabling factors and hindrances for designing and implementing policies and services to strengthen inclusive education in Pakistan. | • The ways in which the data on marginalised children, including girls, and SEND and religious minority children, are collected, managed, and used.<br>• Enablers and constraints for collecting, managing, and using the data to improve access to, and quality and continuity of, education, especially for marginalised children. | For promising programmes, strategies, and policies improving drivers of learning and holistic outcomes for marginalised children:<br>• Evidence of acceptability/feasibility in broader Pakistan contexts, cost effectiveness, and sustainability.<br>• Enablers and hindrances for scale-up implementation.<br>• Strategies to ensure and enhance cost effectiveness with different populations, in different contexts, and at scale. |
| | **1.2** Improving educational **access**, **continuity**, and **quality** for | • Role of alternate pathways to education (e.g. Teaching at the Right Level (TaRL), community-based education programmes (CBP) etc.) in | | |

| | | | | |
|---|---|---|---|---|
| | marginalised children | improving marginalised children's education participation (access, attendance, learning, continuity) and other outcomes (e.g. aspirations, agency, leadership). <br>• Impacts of targeted financial support on marginalised children's access to education, continuity in education, and learning outcomes. <br>• Political economy of public–private partnerships (PPPs) and private school regulations in education provision for all. <br>• Impact of strategies to improve educational experiences and holistic learning outcomes of marginalised children. | • Improving coherence of data systems across stakeholders to support marginalised children's access to, and the quality and continuity of their, education. | • Support mechanisms (institutionalisation, resource allocation, political will, champions of change) to ensure sustainability |
| **2. Strengthening the quality of front-line education provision:** What works to strengthen the quality of front-line education provision through | **2.1** Improving **teacher effectiveness** in diverse educational contexts of Pakistan | • Understanding teacher perspectives and practices in multi-grade/multilingual classroom contexts. <br>• Pedagogical strategies that improve classroom instructional quality in multi-grade/multilingual contexts. <br>• Assessment strategies that are effective for monitoring and | • Identifying gaps in assessment data and determining the effective use of existing data to drive improvements in teaching quality and the effective | For promising programmes, strategies, and policies that support teacher and school capacities regarding pedagogical strategies in multi-grate/multilingual contexts, teacher management and professional development, and teacher |

| building teacher and school system capacities? | | evaluating student progress in multi-grade/multilingual contexts.<br>• Facilitators and barriers for implementation of effective multi-grade/multilingual pedagogical and assessment strategies at scale. | management of schools. | well-being and school leadership support:<br>• Evidence of acceptability/feasibility in broader Pakistan contexts, cost effectiveness, and sustainability.<br>• Enablers and hindrances for scale-up implementation.<br>• Strategies to ensure and enhance cost effectiveness with different populations, in different contexts, and at scale.<br>• Support mechanisms (institutionalisation, resource allocation, political will, champions of change) to ensure sustainability. |
|---|---|---|---|---|
| | **2.2** Improving teaching workforce **quality** through achieving **coherence** in teacher management and professional development policies and supporting teacher well-being | • Examining the enablers and constraints influencing the policy landscape for teacher management and professional development.<br>• Testing and describing the effects of teacher reforms and policies on teaching workforce quality.<br>• Identifying and testing the impact of promising policies, strategies, and programmes that aim to improve teacher professional well-being. | | |
| | **2.3** Improving **quality** of education through supporting school leadership | • Factors contributing to effective school leadership for improving school performance.<br>• Roles and impacts of existing policies/strategies/reforms supporting school leaders' effectiveness for school, teacher, and student management and performance. | | |

| | | • Understanding adaptive school leadership in developing school and student resilience in times of crises and through disruptive events (e.g. floods, natural disasters). | | |
|---|---|---|---|---|
| **3. Resilient education service delivery:** What works to develop resilient education service delivery continuity through improving systems coherence? | **3.1** Teaching and learning continuity, especially for the marginalised, when faced with disruptive events | • Understanding marginalised children's lived experience of education facing disruptions.<br>• Trajectories of education access and quality, and continuity of learners before and after they experience climate disaster-related disruptions, and which systematic marginalisation factors predict these.<br>• Promising climate education practices and policies that support schools and teachers to help their students build resilience against climate disasters.<br>• Key policies, interventions, and strategies to ensure teaching and learning continuity when faced with disruptions to education. | • Data-informed, inclusive, and comprehensive adaptation and mitigation strategies to ensure educator support and continuity in education for all. | For promising programmes, strategies, and policies that ensure teaching and learning continuity and systems resilience when faced with disruptive events:<br>• Evidence of acceptability/feasibility in broader Pakistan contexts, cost effectiveness, and sustainability<br>• Enablers and hindrances for scale-up implementation<br>• Strategies to ensure and enhance cost effectiveness with different populations, in different context, and at scale |
| | **3.2** Improving education system resilience to disruptive events | • System preparedness for climate resilience, focusing on education systems' preparedness, political economy, and policy implementation. | | |

| | | | | |
|---|---|---|---|---|
| | | • Understanding local perspectives and the role of educators, communities, and parents in building a resilient education system.<br>• Disruptive events. | | • Support mechanisms (institutionalisation, resource allocation, political will, champions of change) to ensure sustainability |
| **4. Accountable education systems:** What works to enhance accountability to improve education system cohesion in Pakistan? | **4.1** Decentralisation and governance | • Examining the political economy of decentralisation reform, e.g. focusing on how decentralisation of education has influenced the functioning of government schools.<br>• The distribution of roles and responsibilities, and accountability, across stakeholders.<br>• How incentives (mis) align within and across stakeholders and 'what works' or does not work, especially for the provision of education to the most marginalised. | • Factors that shape the (in)coherence of the policy landscape for **data-informed educational policy design and accountability systems operation** in Pakistan.<br>• Bottlenecks in the system for **evidence and research uptake**, and where and at what levels of the system evidence can be supplied to ensure effective evidence uptake.<br>• (Mis)**Alignment across education data systems** (e.g. | For promising programmes, strategies, and policies that ensure education systems accountability, evidence and research uptake, and effective operations and use of data, and monitoring systems:<br>• Evidence of acceptability/feasibility in broader Pakistan contexts, cost effectiveness, and sustainability.<br>• Enablers and hindrances for scale-up implementation.<br>• Strategies to ensure and enhance cost effectiveness with different populations, |
| | **4.2** School monitoring and accountability systems | • Key factors that influence the accountability of various education stakeholders, in order to monitor and achieve access to, and quality and continuity of, education provision in public schools across Pakistan. Promising strategies and tools to improve monitoring and | | |

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| | | | accountability systems at school, district, provincial, and federal levels, to achieve quality learning experiences and improved student learning outcomes. | MICS, EMIS, school report cards, disaster-related needs report/GPS data) and initiatives to improve education data ecosystems and its usage.<br>• Goals, processes, resources, capacities, and incentives for data use across the key stakeholders.<br>• Whether and how data use strategies support policy and practice decision-making for comprehensive data-informed and localised education systems operation and planning. | in different contexts, and at scale.<br>• Support mechanisms (institutionalisation, resource allocation, political will, champions of change) to ensure sustainability. |

As mentioned above, the research agenda has been developed collaboratively with a wide range of stakeholders (section 2) and draws upon the conceptual framework (section 1) and recommendations from the evidence gap map. It has also gone through an extensive peer review process and been amended in light of external experts' feedback. This process has culminated in the selection of four overarching priority areas to organise the research agenda, with each priority area focusing on the essential dimensions of the educational landscape in Pakistan. '**Effective data use**' and '**scalable solutions**' have been identified as cross-cutting themes across all four priority areas. It is important to probe the collection, management, and effective use of data to improve education system access, coherence, resilience, and quality for all children, especially those who are marginalised. Moreover, it is essential to explore and analyse the different ways through which effective educational interventions, policies, and reforms may be scaled across different regions within Pakistan, and to examine the enablers and challenges in regard to taking successful pilot interventions to scale within the educational landscape of Pakistan.

## 4.2 DARE-RC research agenda priority areas

As policies, programmes, and stakeholders intersect with all aspects of access, quality and continuity of, learning, all four priority areas of the DARE-RC research agenda include questions related to the systems at the local and policy levels. These overlaps recognise the complexity and interconnectivity of fundamental indicators of equitable education service delivery and the pivotal role of a coherent education system at local and policy levels that work for all, and especially for marginalised learners. The following section spells out the specific sub-themes within each priority area, to refine the research focus. The research questions under each sub-theme are to be considered as indicative starting points for research, and can be further refined and enhanced in future iterations of research, guided by ongoing findings and evolving insights.

### Priority Area 1: Improving drivers of learning for marginalised children

Pakistan's high learning poverty rate of 80% (World Bank, 2024), with 32% of primary school-aged children out of school and 70% not achieving the minimum proficiency level for reading at the end of primary school, is indicative of the challenges that the education systems of Pakistan need to overcome to provide quality education for all. The systematic marginalisation and inequity within the education systems, based on gender, disability, location, ethnicity, religion, and socio-economic status, further prevents children from accessing schooling and learning, contributing to the high learning poverty rate and widening the learning gap within Pakistani society, threatening its social cohesion and compromising its potential for economic prosperity. To address this critical issue, DARE-RC seeks to generate evidence on how to improve drivers of learning for marginalised children, as the first priority area, and to organise related research around the following broad research question:

**What works to improve drivers of learning (educational access, quality, continuity, coherence) for marginalised children in Pakistan?**

The research under this priority area is motivated by the need to foster inclusive educational access and meaningful learning *for all*. In Pakistan, specific marginalised groups (e.g. **girls, children with disabilities, children belonging to minority backgrounds, and those living in specific geographical locations or from lower socio-economic backgrounds**) continue to be less likely to access quality education and are more likely to face disruption to their education (Andrabi *et al.*, 2020; Bari *et al.*, 2019;

Pakistan Bureau of Statistics, 2021; Singal *et al*., 2018). The intersection of these disadvantages further exacerbates inequalities and exclusion. A critical policy concern, therefore, is ensuring that these most marginalised children can access and remain in quality schooling, to achieve meaningful learning.

Whilst the DARE-RC's evidence gap map (Bari, 2023) identified robust evidence on 'what works' to improve education outcomes for the most marginalised children globally, it also documented scarcity of research from Pakistan on the educational experience of marginalised children, and identified several key issues with existing research that warrant further investigation. Specifically, Bari (2023) found that there is insufficient research on the lived experiences of the most marginalised children (e.g. religious minorities), which is critical for designing policies and programmes to improve their access to quality schooling. In addition, the map found limited evidence from different parts of Pakistan on how flexible approaches to adolescent girls' education can improve their access to and continuity in schooling. For example, the evaluation[4] of the FCDO-funded **Siyani Saheliyan** programme, which provides targeted instruction by learning levels rather than by grade, and which has been noted to be a 'good buy' (Banerjee *et al*., 2023), focuses on specific districts of South Punjab and does not provide sufficient information on whether and how this programme can be replicated and implemented elsewhere in Pakistan, at scale. Given the large population of out-of-school children in the country, and specifically girls, there is a need for further research that can generate high-quality evidence on alternatives to formal education, such as supplementary programmes like this remedial targeted-instruction programme or other informal and non-formal education programmes that provide alternative pathways for access to and continuity in education.

Additionally, the existing evidence in Pakistan on supporting the educational experiences of marginalised children thus far has tended to rely either on expensive experimental methods focusing on testing impacts of specific programming on specific outcomes, or purely qualitative and descriptive research that is difficult to translate into actionable recommendations for policy and programming at scale. This points to a need for high-quality mixed-methods and implementation research that can provide a more comprehensive and actionable evidence base that provides a systematic and holistic understanding of marginalised children's experiences and offers concrete recommendations for how to improve their educational access, quality, and continuity. Such an approach is especially important considering the wide-ranging diversity of needs, conditions, and priorities across different regional and sub-regional contexts. This approach also fits well with localised research that can be applied to sub-regional contexts. The differences across and within states and regions within Pakistan have increased due to changing needs of different communities, as well as sociopolitical and climate instability, which calls for more contextualised and locally grounded approaches that can account for these differences.

Two sub-themes and related questions are identified under this priority theme, discussed below.

## Sub-Theme 1.1: Understanding risk and protective factors affecting marginalised children's education access, quality, and continuity

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[4] Oxford Partnership for Education Research and Analysis (2020) 'Evaluation of the Siyani Sahelian (SS) Programme in South Punjab Empowering Adolescent Girls in South Punjab through Post Primary Opportunities for Learning Gains, TVET, Livelihoods and Life Skills'.
https://www.itacec.org/SiyaniSahelian/document/resources/Third_Party_Evaluation_of_the_Siyani_Sahelian_Programme.pdf

This sub-theme focuses on examining the risks and protective factors that affect the access to, and quality and continuity of, education for marginalised children in Pakistan. This includes understanding the educational experiences of girls, children with disabilities, and children from minority backgrounds, due to their ethnicity, religion, geographic location, and socio-economic status, and exploring the role of parents and communities in affecting their education. This also includes understanding the local and policy systems contexts beyond classrooms, such as the household and community contexts these students are embedded within, as well as the political economy of policy design and implementation, which is critical for comprehending their lived experience and for recognizing potential risk factors to intervene on and for identifying protective factors to strengthen, respectively, to support their education.

Evidence from Pakistan suggests that key parental and community factors play significant roles in the educational trajectories of marginalised population (Taj, 2019). For example, the transition to middle school necessitates parental involvement, including physical visits to the school, submission of documents, and identity verification, all of which can pose significant burdens and challenges for marginalised households with low literacy levels and financial means. Research indicates that addressing parental and community perceptions and attitudes towards marginalised children's needs and education can positively influence the demand for inclusive education (Graham and Slee, 2008; Singal *et al*., 2023).

Evidence from other low- and middle-income contexts confirms the importance of understanding local and policy systems contexts. The findings from the evaluation of the Girls' Education Challenge, a flagship FCDO-funded programme (Singal *et al*., 2023), conducted with girls with disabilities in Malawi, Nepal, and Uganda, suggest that the interventions that included components to improve positive perceptions and greater engagement with family and community members were especially effective in improving girls' access to education (e.g. enrolment) and the quality of their education (e.g. reduced bullying), and in improving holistic learning outcomes for girls with disability, including socio-emotional skills and literacy and numeracy. This evaluation also highlights the challenges for designing and implementing effective policies for inclusive education, including lack of awareness and knowledge around disability, financial constraints, limited human resources (lack of skilled teachers and inadequate teacher training), donor-initiated discontinuity of funding, and bureaucratic delays.

Bari *et al*. (2018) emphasised the importance of inclusive education in the context of Pakistan, where disadvantages stemming from the intersection of disability, poverty, gender, and location necessitate a broad understanding of inclusivity. The study advocated for future research examining the lived experiences of marginalised children to identify contextual factors that affect the educational experiences of children with various dimensions of marginalisation and severity of disabilities, to comprehend their schooling challenges and formulate supportive strategies. The DARE-RC evidence gap map identified few qualitative studies that provide a nuanced understanding of the lived experiences of marginalised children and their educational experiences, and calls for research that amplifies the voices of marginalised children and communities through participatory methods. The role of stakeholders in promoting effective inclusive educational practices and developing practical models for inclusive schools also emerged as critical areas in need of additional research. Notably, geographic disparities exist in research with marginalised children, with research predominantly focusing on Punjab. Therefore, more comprehensive efforts across provinces and regions are necessary to ensure representation of all children subjected to various types of marginalisation within the Pakistan context.

**Girls' experiences.** There is a wealth of data and evidence from Pakistan to confirm that girls continue to face challenges in accessing meaningful education. According to the United Nations Education, Scientific and Cultural Organization (UNESCO), Pakistan has one of the world's highest out-of-school female populations. Investigating factors that perpetuate this disparity is crucial for achieving gender equality in education (UNESCO, 2020). Despite the state's pledge to provide free, high-quality education to all children aged five to 15, only 50% of women in Pakistan have ever attended school (PSLM 2019–20). In rural areas, net enrolment rates for girls are alarmingly low, currently standing at 56% overall and plummeting to a mere 29% for middle school-aged children (PSLM 2019–20). Despite significant efforts, net enrolment rates at the middle level remain substantially lower than at the primary level, particularly impacting girls due to gender-specific challenges and localised barriers (UN Women, 2023; Shah *et al.*, 2019).

A consequence of terminating education beyond the fifth grade is that it interrupts in the acquisition of fundamental academic skills in literacy, numeracy, and critical thinking, impeding future learning and skills development. Out-of-school children, particularly girls, are vulnerable to exploitative child labour, often performing domestic chores in exchange for minimal compensation, if any, thus curtailing their educational opportunities.

While provincial governments sporadically launch enrolment drives through the District Education Officer's office, primarily targeting primary school enrolment, these efforts often overlook children who drop out in later years and lack published outcome data. Constraints on middle school enrolment stem from a combination of supply-side inadequacies and demand-side factors, encompassing limited school options, financial barriers, concerns about educational quality, and safety issues, especially for girls. In addition, socio-cultural norms and practices in Pakistan often prioritise boys' education over girls', leading to early dropout rates among girls. Understanding these socio-economic and cultural constraints, as well as potential protective factors within the households, communities, and policy systems that are necessary to improve to education access, quality, and continuity for girls, is essential for designing culturally sensitive interventions that promote girls' education (Chaudhry and Parveen, 2018).

**Experiences of children with SEND.** The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), to which Pakistan is a signatory, enshrines the right of children with disabilities to an equitable and inclusive education. However, in many parts of the world, including Pakistan, children with SEND face significant barriers to accessing quality education. Understanding the complex interplay of demand- and supply-side factors that impedes their access to education, and identifying effective interventions to improve their access and learning outcomes, is crucial. This research theme seeks to explore these factors and contribute to the development of inclusive education policies and practices in Pakistan.

Children with SEND often face societal stigmatisation and discrimination, leading to low demand for their education. According to a report by UNESCO, cultural beliefs and attitudes contribute to the exclusion of children with disabilities from educational opportunities (UNESCO, 2017a). Parents may perceive education for children with SEND as futile due to societal prejudices and lack of awareness about the potential benefits. Furthermore, poverty exacerbates these issues, as families prioritise immediate economic needs over investing in education for their children with disability (De Souza *et al.*, 2019). For example, Singal *et al.*'s (2018) study utilising ASER data in Pakistan found that children

identified as having moderate to severe disabilities were less likely to attend school and exhibited lower levels of proficiency in basic reading and mathematics tasks compared to their peers without identified difficulties. Additionally, co-residing or having a sibling with moderate to severe disabilities in the household was also associated with lower levels of basic literacy and numeracy.

On the supply side, inadequate infrastructure, limited resources, and a lack of trained personnel pose significant barriers to inclusive education. The education system in Pakistan struggles to accommodate diverse learning needs, with insufficient special education schools and teachers trained in disability-inclusive or special education (Kalyanpur and Harry, 2012). Additionally, inaccessible physical environments and lack of assistive technologies further restrict participation for children with SEND (Siddiqui *et al.*, 2018). Research suggests that investing in infrastructure development, teacher training programmes, and assistive technologies is crucial for enhancing the supply of inclusive education services (Alur and Timmons, 2009).

**Experiences of children from minority backgrounds.** Another marginalised group that has received little attention in the literature on education in Pakistan is children from minority backgrounds. There is a lack of research around recording and understanding the lived realities of children from minority religions, in schools and in neighbourhoods. Pakistan hosts diverse religious communities, including Muslims, Christians, Hindus, Zoroastrians, Sikhs, Bahais, and the Kalash (Halai and Durrani, 2017; Niyozov and Lalani, 2019). These groups have deep historical roots, with Hindus tracing back to the Indus Valley Civilisation and Buddhism existing within the Gandhara civilisation (Tull, 2019). However, the religious nationalism underpinning Pakistan's foundation have led to a tension between the aspiration of equality and actual constitutional and social hierarchies.

Pakistan is a signatory to international agreements, including the Universal Declaration of Human Rights and the Convention on the Rights of the Child, which emphasise the right to education for all children, regardless of their religious background. Prioritising research on the inclusion of children from religious minorities aligns with Pakistan's legal obligation to uphold human rights and promote equal access to education (United Nations, 2015). Ensuring inclusive education for children from religious minorities is also an ethical requirement as every child deserves the opportunity to receive quality education, regardless of their religious affiliation. Prioritising research in this area reflects a commitment to equity, social justice, and respect for diversity (Sen, 1999).

The exclusion of children from religious minorities from the education system perpetuates social inequalities and denies them opportunities for personal and socio-economic development. Researching barriers to inclusion and effective strategies to address them is essential for promoting educational equity and social justice in Pakistan (World Bank, 2019). Inclusive education plays a crucial role in fostering social cohesion and harmony in diverse societies like Pakistan. By addressing barriers to inclusion for children from religious minorities, research in this area can contribute to building a more inclusive and cohesive society, promoting understanding, tolerance, and respect for differences (UNESCO, 2017b).

**Representation of marginalised groups.** There is widespread recognition of the educational needs of children from minority backgrounds. However, existing research emphasises that there is a lack of inclusivity and representation of different marginalised ethnic groups, cultures, and traditions – including different religious traditions – in curriculums and textbooks, which that affects their experience of the quality of education (Lall, 2008; Rahman, 2012; Saigol, 2014). However, it should be

noted that this research was conducted prior to the new National Curriculum reform. To understand and support the educational experience of marginalised groups with the new National Curriculum, there is an urgent need to examine the portrayal and representation of religious and other marginalised groups in the current National Curriculum and to identify how this enables or hinders their educational access, quality, and continuity.

**Policy relevance**: Research on identifying the key risks and protective factors for marginalised groups, including girls, children with disabilities, those from disadvantaged backgrounds, and minorities, aligns fully with international development agendas, such as the SDGs, particularly SDG 4 (Quality education) and SDG 5 (Gender equality). Prioritising this research theme can contribute to evidence-based policymaking and international development efforts focused on girls' education (United Nations, 2015), as well as contributing to the country's commitments towards children with disabilities as a signatory to UNCRPD. Research on the inclusion of children from religious minorities in education is also directly relevant to national and international development agendas, including the SDGs, particularly SDG 4 (Quality education) and SDG 10 (Reduced inequalities). Research on these marginalised groups also aligns with the provincial governments' commitments. For example, the Punjab Education Sector Plan (2018) highlights the importance of addressing the issue of access to education for children with SEND as a priority area, and the provincial sector education plans also include girls' education as a priority area to focus on. The FCDO is also committed to improving education for girls and marginalised children.

Not only is prioritising research on inclusive education for all children, especially for those who are marginalised, a legal requirement under international conventions, as well as aligning with Pakistan's commitment to upholding human rights and promoting inclusivity (United Nations, 2006), it is also an ethical imperative. Generating evidence on education for marginalised children can also help in strengthening the capacity of educators, policymakers, and other stakeholders within the education sector to build inclusive education systems, through research-informed professional development initiatives (UNESCO, 2019). In addition, investigating how educational materials and policies affect minority groups can lead to more inclusive practices that promote social equity and reduce educational disparities.

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**Sub-Theme 1.1: Understanding risk and protective factors affecting marginalised children's education access, quality, and continuity**

**Broad research question**

What are the lived experiences of marginalised children, including girls, children with SEND, and religious minority children in schools, at home, and within their communities, and how do these experiences they shape their educational outcomes?

What is the role of parents, communities, and schools in regard to improving access to and continuity in meaningful education for marginalised children?

How are the marginalised represented in the National Curriculum and does this influence their access to, and continuity in, education?

What are pragmatic and contextually grounded strategies to strengthen inclusive education policy implementation and service delivery in Pakistan?

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**Indicative sub-questions**

1. **Lived experiences of marginalised children:**
   - What are the lived experiences of children belonging to marginalised backgrounds in schools and in their wider social interactions (e.g. home, community)?
   - How do these lived experiences influence their career aspirations, sense of identity, and overall well-being?
   - Which school-level factors (e.g. facilities, assistive devices, relevant competencies, attitudes of teachers and head teachers, peer support) facilitate the integration of children with SEND in mainstream schools in Pakistan?
   - What are teachers' and school administrations' perceptions of students from marginalised backgrounds and how do they shape pedagogical and administrative practices in terms of equity and the learning experiences of these children?

2. **Parental and community support:**
   - What are parents', communities', and school teachers and administrations' perceptions of girls, children with SEND, and religious minority children's education?
   - What works to improve awareness of and support for equitable access to, and quality and continuity of, education for girls, children with SEND, and religious minority children among parents, communities, and schools?
   - What are the facilitators of and barriers to implementing and replicating parental, community, and school administration engagement strategies at scale?
   - Which forms of parental and community support (e.g. boys and men, community leaders etc.) contribute towards school participation and transition (primary to middle/secondary school) for girls in Pakistan?
   - How do supply-side factors influence parental choice regarding girls' transition to the next level of education?
   - Which forms of parental and community support (e.g. early identification, social acceptance, resourcefulness to seek help) contribute towards school participation and learning outcomes for children with SEND in mainstream schools in Pakistan?

3. **Representation:**
   - How are minority religious groups, children with disabilities, girls, or those from disadvantaged backgrounds portrayed and represented in the current National Curriculum of Pakistan?
   - How does the representations of marginalised children influence marginalised children's education outcomes?

4. **Policy systems-level considerations for inclusive education:**
   - What are key enabling factors and hindrances for designing and implementing pragmatic and contextually grounded strategies to strengthen inclusive education policy implementation and service delivery in Pakistan?

**Sub-Theme 2: Improving access to, continuity of, and quality of education for marginalised children**

Research under this theme will focus on examining 'what works' to improve access to and continuity in education for marginalised children. This includes research focusing on examining and evaluating various promising solutions aimed at improving access to and continuity of education and their holistic outcomes for the most marginalised children. These include alternative pathways to formal schooling, targeted needs-based financial resources (e.g. cash transfers, scholarships etc.), PPS, and private schools.

The existing evidence base provides a few promising and cost-effective educational interventions that target support to access to schooling, as highlighted in the Global Education Evidence Advisory Panel (GEAEP) report (Banerjee *et al.*, 2023).

**Alternative/supplementary programmes.** The Siyani Saheliyan evaluation in southern Punjab is an example of a promising alternative education programme that provides access to and continuity of education for targeted out-of-school girls and those who have dropped out. An evaluation of this FCDO-funded programme found large gains in both English and Urdu literacy, as well as numeracy, outcomes for participating girls. Evidence from other low- and middle-income countries confirms the potential effectiveness of such alternative education programming. For example, evidence from the Girls Education Challenge (Tetra Tech, 2023),[5] which evaluated programmes focusing on the most marginalised girls in Ghana, Kenya, and Nepal, found that alternative education interventions that aimed to provide support for the transition into formal schooling, skills training, or work-related activities were highly effective. More specifically, the provision of after-school accelerated learning classes for girls was found to be impactful in preparing them for the formal school environment as these classes helped to mitigate the challenges girls faced when adjusting to the formal schooling curriculum. Such alternative programmes also improved girls' engagement and decision-making on day-to-day activities, as well as their academic aspirations.

**Targeted financial support.** Another 'good buy' identified by the GEEAP report (Banerjee *et al.*, 2023) is the provision of targeted needs-based financial resources, such as merit-based scholarships and conditional cash transfers, as a mechanism for improving access to education for specific groups. Merit-based scholarships, especially at the secondary level, have been implemented as a promising strategy to improve access and student learning in Pakistan. For example, the Punjab Educational Endowment Fund was able to reach reached more than 60,000 pupils since its inception in 2008. It expanded beyond Punjab to cover other provinces and regions of the country, and was highly successful in reaching families facing multiple educational and social disadvantages (Bari *et al.*, 2019). Another promising strategy is conditional cash transfers, such as those under the Benazir Income Support Programme (BISP). An impact evaluation of the BISP found that the provision of the conditional cash transfer component of this programme is potentially effective in promoting girls' education, with higher enrolment and reduced grade repetition among girls (Cheema *et al.*, 2014). While these programmes have shown promising results, more evidence is needed to (a) compare the costs and benefits of the targeted financial support across various programmes; and (b) confirm the effectiveness of the provision of various forms of financial support in improving drivers of learning for the most marginalised children, and, if they are effective, to consider how, for whom, and in what conditions they are effective, and what it takes to effectively implement such programmes at scale.

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[5] https://intdev.tetratecheurope.com/wp-content/uploads/2023/10/Study-5-Final-Report_FINAL.pdf

**PPPs.** This sub-theme will also explore the role of PPPs in improving access to and continuity in education for the marginalised in Pakistan. There is global evidence that some types of non-state provider can reach the more disadvantaged and more marginalised (Day-Ashley *et al*., 2015). However, it depends on the type of provider, and there are gaps in our understanding of the extent to which private schools are affordable, especially for the poor. The global evidence on PPPs is also mixed but in some contexts they have been shown to increase access, quality, and equity in education delivery. The limited evidence from Pakistan on private schools is indicative of better learning outcomes amongst pupils as compared to government schools (Barrera-Osorio *et al*., 2022). The evidence on whether private schools in Pakistan reach the poor, and whether they are accessed by both girls and boys equally, is more mixed. Even in environments where government schools exist and where parents are relatively poor, there is evidence of willingness to pay for private schooling (Carneiro *et al*., 2022). There is some (medium- to high-quality) evidence on PPPs in Pakistan that indicates that these types of arrangements can improve education access as well as quality (Ansari, 2023; Barrera-Osorio *et al*., 2020; 2022; Malik, 2010). There is also evidence of certain types of arrangements reaching those who are more disadvantaged (Barrera-Osorio *et al*., 2022). Research in this area could focus specifically on the political economy aspects of PPPs and specifically issues around the regulation of the thriving, largely unregulated, private school sector in the country.

**Quality of education for marginalised children.** Equitable achievement of holistic learning among all children of Pakistan cannot be achieved through equitable education access and continuity alone. The quality of education marginalised children experience in both alternative/supplementary education programmes and mainstream formal schooling systems may differ from their peers, not just due to the pervasive systematic marginalisation, biases, and discrimination within the culture and the society, but also because of the unique needs they bring into classrooms: for example, social and emotional challenges, socio-economic challenges, issues relating to lack of agency, and the need for physical and mental health accommodations. Addressing these needs within education programming and schooling is critical to improve the quality of education these children experience, and therefore ensuring access to and continuity of their education, and to promote their achievement in holistic learning. In Pakistan, some programmes that have focused on improving girl's education (e.g. the Closing the Gap project and International Rescue Committee's (IRC's) TEACH programmes, as part of the larger FCDO-funded Girls' Education Challenge initiative), have incorporated teacher professional development and community awareness campaigns to ensure the provision of safe and supportive learning environments (GEC, 2022). However, there is little evidence on whether such strategies, and others, that are designed to improve the inclusivity and quality of education experiences for marginalised children – e.g. provision of alternative/informal education pathways, gender-responsive pedagogical approaches, and social and emotional learning and psychosocial support programming – are effective in improving holistic learning outcomes and agency among marginalised children, and, if they are, how, for whom, and in what conditions. Likewise, there is little evidence on whether successful programmes of this kind can be implemented at scale.

**Policy relevance:** Prioritising research on the solutions and 'what works' to ensure that marginalised children participate and benefit from a quality education in Pakistan is imperative for addressing disparities in education, promoting socio-economic development, and achieving global development goals. By systematically examining these factors and identifying effective interventions, Pakistan can

pave the way towards ensuring equitable educational opportunities for all children, thereby fostering inclusive and sustainable development.

This research theme has substantial policy relevance for Pakistan's educational context. Exploring non-traditional educational pathways can identify crucial opportunities for children who are unable to attend regular schools due to various socio-economic barriers (UNESCO, 2021). Investigating the impact of cash transfers, scholarships, and other forms of financial aid can inform policies to alleviate economic constraints that hinder school attendance, especially for girls. Moreover, understanding how collaborations between the public and private sectors can enhance educational access and quality may help in formulating strategies to better utilise available resources and infrastructure. It is crucial to identify and address specific barriers that prevent girls from accessing and continuing education, such as cultural norms, safety concerns, and economic challenges. This research can guide policies that seek to create a more conducive environment for girls' education. Most importantly, investigating how alternatives to formal education can improve holistic learning and educational experiences can provide insights into creating more inclusive and effective educational environments. Evaluating the relative impacts and costs and benefits of various educational support programmes can help prioritise interventions that offer the best outcomes for the marginalised, for investment. In addition, research on interventions that improve marginalised children's sense of belonging, agency, and holistic well-being can guide comprehensive educational policies that address both academic and non-academic needs. By addressing these areas, the research can significantly contribute to formulating policies that improve educational access, quality, and equity for marginalised children in Pakistan, ultimately helping the country achieve its educational and developmental goals.

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**Sub-Theme 1.2: Improving educational access, continuity, and quality for marginalised children**

**Broad research question**

Do alternative/supplemental education programmes offer an opportunity for improved access to and continuity of education for the most marginalised?

What are the relative impacts and costs–benefits of targeted financial support for programmes targeting the most marginalised?

What role can PPPs and private schools play in ensuring inclusive access to a quality education for all children in Pakistan? What are the political economy considerations of this mode of service delivery?

What works to improve educational experience and holistic learning outcomes for marginalised children in alternative/supplementary education programmes or in mainstream government schools?

**Indicative sub-questions**

1. **Alternative pathways to formal schooling:**
    - Does alternative/supplemental education programming (including FLN, TaRL/CPB, community-based education centres) provide additional benefits to marginalised children's (girls, children with SEND, and religious minority children)
    a. access (informal/formal school enrolment, attendance); and
    b. continuity (retention, secondary school transition, grade progression) of education?

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> c. Does this increased access and continuity improve their holistic learning outcomes?
> Flexible approaches to girls' education: Can alternate pathways (to formal schooling) improve adolescent girls' education participation and outcomes?

2. **Provision of targeted financial support:**
   - How does providing various forms of financial support (e.g. cash transfers, scholarships, support for transport and meals) influence access to schooling and learning outcomes for girls/children with disabilities/minorities/those from disadvantaged backgrounds in Pakistan?
   - What are the relative additional benefits per cost of the various financial support programmes (e.g. cash transfers, scholarships, support for transport and meals) for improving access and continuity of education for marginalised children? (Here there is an opportunity to use in-depth cost data for specific programmes and to evaluate cost–benefit analysis/meta-analysis).

3. **PPPs:**
   - **Efficacy of PPPs:** Do PPP models improve access to, and the quality and continuity of, education, especially for the more marginalised, compared to existing public or private school models?
   a. Do PPP schools increase student enrolment, attendance, retention, and school/grade transitions (access, continuity)?
   b. Do PPP schools have higher instructional quality?
   c. Do PPP schools increase student learning outcomes?
   d. Do PPP schools provide added benefits for marginalised children in educational access, quality, and continuity, as well as their learning outcomes?
      - Which factors make a PPP model effective in improving access, retention, enrolment, and participation of students at various levels of education?

4. **Political economy of PPP and private school regulations:**
   - Regulation of private schools: How can policies and regulations be designed to ensure that private and PPP schools in Pakistan reach and serve the most disadvantaged students, promoting equity in access to quality education?
   a. What are the incentives for private/PPP schools to provide quality educations for marginalised student populations (girls, SEND, religious minority, rural)?
   b. What are the goals, processes, incentives, resource arrangements, and capacities of key stakeholders involved in the political economy of private school regulations? How are they aligned/misaligned?

5. **What works to improve the quality of education and holistic learning for marginalised children within alternative/supplementary and formal education programmes?**
   - What works (e.g. inclusive pedagogical approaches and curricula, targeted screening, tiered support) to improve educational experiences (quality) and holistic learning outcomes within alternative/supplemental education for girls, children with SEND, and religious minority children?
   - Agency and empowerment: How can formal and informal education pathways influence the aspirations, agency, leadership, motivation, and choice for all children and for the marginalised?

- Gender-responsive pedagogical approaches: How do gender-responsive pedagogical approaches influence school participation and/or learning outcomes for the marginalised?

## Priority Area 2: Strengthening the quality of front-line education provision

Pakistan's educational landscape encompasses diverse contexts, including urban and rural areas, public and non-state providers (including private schools), and individuals from different socio-economic backgrounds. The diversity of educational contexts in Pakistan presents unique challenges in ensuring educational quality and therefore achieving optimal student learning outcomes for all children. Thus, this research priority area seeks to understand and generate evidence on effective policies, interventions, and strategies to strengthen the capacity of front-line education providers, from improving individual teacher effectiveness in diverse classrooms and improving teacher management and support systems to strengthening effective school leadership. The proposed research under this priority area is organised around the following broad research question:

**What works to strengthen the quality of front-line education provision through building teacher and school system capacities?**

Key research topics of interest in this priority area include, at the local systems level, evaluating specific pedagogical and other innovative approaches and strategies to improve teacher/educator[6] effectiveness in diverse classrooms, specifically in multilingual and multi-grade contexts prevalent in Pakistan, as well as strategies to supporting teacher well-being as a way to improve teacher quality and effectiveness. At the policy systems level, DARE-RC is interested in better understanding what works – or can work – to improve teacher workforce quality through achieving coherence in teacher management and teacher professional development policies; and examining policies and strategies to better support school leaders to ensure effective, adaptive, and resilient school leadership, especially in times of crises and disruptive events.

### Sub-Theme 2.1: Improving teaching effectiveness in diverse educational contexts of Pakistan

The research under this sub-theme focuses on exploring and evaluating promising interventions, strategies, and approaches that can improve teaching effectiveness in the various marginalised contexts within Pakistan. The research topics under this sub-theme may include, but are not limited to, the challenges and benefits of teaching in a multilingual context; in a multi-grade setup; using education practices based on student learning objectives (SLOs); and in diverse educational settings.

Teachers play a significant role in students' academic achievements (Hamilton and Hattie, 2022; Hanushek *et al.*, 2019). Various personal and professional characteristics, attitudes, and capacities of teachers, such as their age, gender, motivation, and self-efficacy, contribute to pedagogical quality and student achievement (Abbasi *et al.*, 2018; Harris and Sass, 2008; Kirillova *et al.*, 2017; Kwon, 2016; Rus *et al.*, 2016; Say and Bag, 2017; Shcherbakov *et al.*, 2017; Wang and Hsieh, 2015). More importantly,

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[6] We will use the term 'educators' and teachers interchangeably but the term 'educators' recognises the wider system-wide staff who support a child's learning experience (https://report.educationcommission.org/).

teachers' expertise, content knowledge, qualifications, and experience significantly shape teaching practices and student outcomes (Bhai and Horoi, 2019; Neumann *et al.*, 2018; Ngozi and Emeka, 2021; Saenz *et al.*, 2023). A nationwide study in Pakistan suggests that teaching quality contributes significantly to student performance, over and above other factors (Bhutta and Rizvi, 2022), underscoring the need to better understand and support teaching effectiveness.

The global evidence base suggests that educational reforms and interventions that are effective in improving learning outcomes are those that focus on improving the quality of the teacher workforce, including policies and interventions that target teacher effort and content knowledge, teacher certification, teacher training and professional development, pedagogical interventions, and support for teachers in teaching the most disadvantaged (Hamilton and Hattie, 2022). There is high-quality research in Pakistan that provides indicative evidence that more competent and knowledgeable teachers can improve learning even in very challenging contexts (Aslam *et al.*, 2019). However, the evidence also shows that teachers in Pakistan are not always prepared to address the diverse needs of students in their classrooms, especially in schools serving marginalised population, where often multiple languages are spoken and children in different learning and grade levels co-attend (Aslam *et al.*, 2019).

**Understanding teacher perspectives and practices.** The design, implementation, and evaluation of such pedagogical interventions and strategies first need to be based on a comprehensive understanding of real-time classroom dynamics and teachers' perspectives and practices in classrooms. In Pakistan, the challenges of teaching are further compounded by the diverse and often complex classroom environment. Many classrooms, particularly in geographically marginalised areas, are multilingual and multi-grade, with students from different age groups, educational backgrounds, and linguistic communities learning together. These settings require teachers who are not only effective in delivering content but also adept at addressing the varied needs of marginalised populations, such as girls, ethnic minorities, and children from low-income families. Without targeted support, teachers may struggle to create inclusive, equitable learning environments for all students. To support teachers in such contexts, it is critical to understand teachers' own perspectives, decisions, and practices in classrooms, which are intricately related to student outcomes (Creemers and Kyriakides, 2008). Teachers' instructional decisions shape classroom practices, impacting outcomes through pedagogical selection, activity design, material development, time allocation, and student engagement (Cairns, 2019; Yu and Singh, 2018). Research consistently underscores the significant role of teaching quality in enhancing learning (Hamilton and Hattie, 2022; Hanushek *et al.*, 2019). Effective teaching practices, such as cooperative group work and problem-solving approaches, foster robust learning outcomes (Hamilton and Hattie, 2022; Tursunovich, 2021; Munna and Kalam, 2021). Additionally, class-level factors like classroom structure and teacher quality significantly influence student performance (Blatchford and Russell, 2021).

**Pedagogical and assessment strategies for multi-grade/multilingual classrooms.** Several promising interventions and strategies in this area are available and are currently being implemented in Pakistan, warranting timely research to evaluate their effectiveness. For example, emerging evidence in Pakistan suggests that interventions that focus on improving instructional quality by providing structured pedagogy and lesson plans that are tailored to students' learning levels and the needs of teachers can be an effective approach to improve teacher quality and address the diverse needs of all children in Pakistan, including those who are marginalised (Rawal *et al.*, 2020).

Incorporating the languages and cultures of children in instructional practices also provides a promising avenue to improve teaching quality and student outcomes in Pakistan. For example, evidence suggests that bilingual education programmes, integrating students' native languages with Urdu or English, can enhance foundational literacy (Tamim, 2014a; 2014b). Curricula that incorporate culturally relevant materials, practices, and methods have also been found to be promising in improving teaching effectiveness and learning outcomes among minority students (Manan *et al.*, 2017). Student-centred approaches, such as inquiry-based science learning, advocated by Ghouri *et al.* (2010) and Thakur and Abbas (2017), can also help in improving instructional quality and deepening student understanding, especially when conducted in native languages. Teacher professional development in multilingual instruction, highlighted by Manan *et al.* (2016), is pivotal for enhanced learning outcomes.

To improve teacher effectiveness in multilingual and multi-grade classrooms, it is also critical to effectively assess student learning levels and to monitor and evaluate their progress. However, there is little information and evidence available on effective assessment strategies in multilingual and multi-grade classroom contexts. Identifying, adapting, and/or developing assessment tools that are responsive to diverse learning contexts and linguistic needs will enable teachers to better understand student progress and tailor instruction to support more equitable learning outcomes.

However, rigorous evidence on these areas is only beginning to emerge, and there is an urgent need for high-quality research to identify and evaluate scalable solutions that can improve teaching effectiveness, especially in Pakistan's diverse classroom contexts.

## Policy relevance

Addressing learning poverty in Pakistan is a critical policy challenge. Given the direct link between the quality of teaching and student learning outcomes, strengthening teacher effectiveness must be a key priority for education policy in Pakistan. Policymakers must focus on improving teacher capacity to ensure that all students, particularly those in marginalised and underserved communities, receive the quality education needed to break the cycle of poverty.

The Punjab Education Sector Plan (2018) already highlights the importance of enhancing teacher effectiveness as a strategy for improving education quality and student outcomes. However, for this plan, and others like it, to have meaningful impact, there needs to be a greater emphasis on equipping teachers to address the diverse and complex needs of Pakistan's student population, particularly in geographically marginalised areas. In many regions, teachers must manage multilingual and multi-grade classrooms, where students vary widely in age, language, and learning levels. Without targeted policy interventions to support teacher training and development in these contexts, the education system risks perpetuating inequalities and failing to meet the learning needs of the most vulnerable students.

Supporting teacher capacity is also crucial to fulfilling Pakistan's commitment to SDG 4, which calls for inclusive, equitable, and quality education for all. Effective policy measures must focus on building teacher competencies to create inclusive learning environments that accommodate the diverse needs of students, especially those who are marginalised due to their gender, disability, geographic location, ethnicity, religion, or socio-economic status. Policies that prioritise professional development, ongoing support, and tailored teaching resources for teachers working in multilingual, multi-grade, and resource-constrained environments will be instrumental in promoting educational equity.

By focusing on these areas, the DARE-RC research can generate evidence to inform education policy that can reduce learning poverty, promoting inclusivity, and improve educational outcomes for all children in Pakistan. Strengthening teacher quality is not just a matter of improving individual classrooms: it is a systemic solution to addressing broader issues of educational inequity and ensuring that all children, regardless of their background or location, have the opportunity to thrive academically. Such policies will help create a more resilient and responsive education system that can meet the challenges of an increasingly diverse and dynamic student population, ultimately driving progress towards national and global educational goals.

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**Sub-Theme 2.1: Improving teaching effectiveness in diverse educational contexts of Pakistan**

**Broad research question**

What are effective and scalable teaching and assessment strategies that can improve the quality of instruction and holistic learning outcomes in the multi-grade/multilingual contexts in Pakistan?

**Indicative sub-questions**

1. Understanding teacher perspectives and practices in multi-grade/multilingual contexts:
   - What does the teaching practice in multi-grade/multilingual classrooms in Pakistan look like?
   - What are the facilitators and barriers for effective teaching in multi-grade/multilingual classrooms?
2. Effective teaching and assessment strategies in multi-grade/multilingual contexts:
   - Which pedagogical strategies (e.g. structured pedagogy, teaching at the right level, multilingual instruction) improve (a) classroom instructional quality, and in turn (b) students' learning outcomes in foundational learning outcomes (literacy, numeracy, and science) in multi-grade/multilingual contexts in Pakistan?
   - What are the main facilitators and barriers for the implementation of effective multi-grade/multilingual pedagogical strategies *at scale*?
   - Which assessment strategies are effective for monitoring and evaluating student progress in multi-grade/multilingual contexts in Pakistan?

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## Sub-Theme 2.2: Improving teacher workforce quality through coherent teacher management and professional development

Teacher management policies and practices play a pivotal role in shaping the quality of education in any country, including Pakistan. This research sub-theme aims to investigate the efficacy of various teacher management and professional development policies and practices in Pakistan's education system, such as the annual appraisal system and promotion criteria, and to explore their implications for teacher education, motivation, accountability, pedagogical quality, and student learning outcomes. It will encompass aspects such as teacher training modalities, transfers, rationalisation, motivation, and accountability mechanisms. It will also include a focus on in-service teacher professional development policies and practices, with research aiming to collate/identify/evaluate or examine what has worked to improve teaching effectiveness and student outcomes.

The effectiveness of these policies directly impacts teacher motivation, well-being, accountability, and overall educational quality. The dynamics of teacher management and deployment within the realm of political economy significantly impact recruitment and retention rates (Kingdon *et al.*, 2014). There are several education policy reforms in the past two decades in Pakistan that have focused on teacher management and professional development. For example, Punjab has actively pursued policies to address teacher recruitment, retention, and management within its public sector. The contract hiring policy of 2002 marked a shift towards merit-based recruitment and increased the minimum academic qualifications for new educators (Habib, 2010). Concurrently, the province witnessed reforms in pre-service and in-service training, including the introduction of continuous professional development (CPD) initiatives. However, the evidence on the overall effectiveness of these management policies in improving teacher performance has yet to be seen. Addressing this gap requires a deeper investigation of **how these policies are implemented, what are the enablers and hindrances for implementing these reforms, and how effective are they in improving teacher motivation, well-being, and effectiveness in various contexts,** especially in rural and underserved areas.

**Recruitment, placement, and transfer policies.** In addition, in recent years, the Ministry of Federal Education and Professional Training (MoFEPT) has reported a significant increase in the number of teachers in Pakistan's public primary and secondary education system, reflecting efforts to enhance teacher availability. However, despite progress in the form of improved pupil–teacher ratios, disparities in learning levels persist across schools, emphasising the need to focus on teacher quality as well (MoFEPT, 2023). Many of these reforms incorporated information technology and data-driven approaches to enhance accountability and policy effectiveness.

Research by Bari *et al.* (2015) underscores the unequal distribution of teachers across public primary schools in Punjab, with some facing critical shortages while others contend with oversupply. Although the efficacy of transfer policies in addressing this imbalance requires further examination, evidence suggests that local redeployment through transfers can mitigate shortages and improve student–teacher ratios (Agarwal *et al.*, 2018). Similarly, Chin (2005) demonstrated that redistributing teachers, as seen in India's 'Operation Blackboard' programme, positively impacts primary school completion rates for girls and increases schooling rates for children from disadvantaged backgrounds.

However, previous studies have highlighted the contentious nature of teacher mobility, with transfers between schools being heavily influenced by lobbying and governmental control within Pakistan's context (Bari *et al.*, 2015). Notably, teacher rotation in Punjab has been utilised as a tool for political reward and punishment, often disconnected from professional performance or school needs. Teacher management policies can influence equity and inclusion in education by ensuring equitable distribution of qualified teachers across different regions and socio-economic contexts. Investigating factors that affect teacher deployment, recruitment, and professional development can help address disparities in educational opportunities and promote inclusive education in Pakistan (UNESCO, 2019).

While the literature exploring the causal link between improved student–teacher ratios and enhanced teacher supply is limited, studies such as that by Urquiola (2006) suggest that additional teachers allocated to schools can bolster student learning outcomes. Findings indicate that teacher effectiveness correlates with teacher–school match quality, with transfers potentially enhancing effectiveness when teachers move to different schools (Jackson, 2013).

**In-service teacher professional development policies.** Additionally, CPD of teachers is a vital component for school improvement based on the assumption that improved teaching practices will lead to improved academic outcomes (Darling-Hammond *et al.*, 2017; Jensen *et al.*, 2016; Kennedy, 2016). To improve classroom practices and teaching pedagogy in public schools in Punjab, the Quaid-e-Azam Academy for Educational Development (QAED) organises training and CPD programmes for teachers. While the training is conducted regularly, there is little empirical evidence of resulting outcomes in teaching practices, leaving few opportunities to generate feedback and understand where teachers need support. Research suggests that the effectiveness of professional development activities can vary based on the context (Leithwood *et al.*, 2019), and certain affordances must be present to ensure that practices learned in professional development are used in the classroom (Calvert, 2016; Darling-Hammond *et al.*, 2017; Leithwood *et al.*, 2019). Given the diversity in the content and modes of delivery in professional development for teachers (Kennedy, 2016), the classroom-level impact must be continually assessed, including through longitudinal studies focusing on outcomes of professional development (Sancar *et al.*, 2021).

In Punjab, a blended CPD approach includes self-study digital modules through the Innovative Teacher Support Package (ITSP) and the digitised Classroom Observation Tool (COT), coupled with face-to-face mentoring. Since the COT's launch in early 2021, several hundred thousand observations have been made in Punjab's primary schools. However, these data have not been utilised beyond summary reporting to district-level managers. Concurrently, the ITSP has been widely used by teachers; however, no evidence has been generated on the influence of this training on teaching and classroom practices.

**Teacher retention policies and strategies.** While recruiting and training competent teachers are crucial, ensuring conducive working conditions and incentives for their retention is equally essential. However, governments often encounter constraints in providing adequate incentives, with pay typically bound by civil service regulations based on tenure and education level (Asad *et al.*, 2020). Prioritising research on teacher management policies can shed light on effective strategies to improve teacher motivation, well-being, retention, and job satisfaction (Javed and Hanif, 2017).

For instance, a study on teacher mobility in Punjab found slightly higher teacher mobility in public versus private schools in Pakistan, due to rationalisation policies. Early-career teachers changing schools tend to gain higher salary benefits than experienced ones. Urban teachers are more mobile, indicating a trend towards teachers preferring to teach at urban schools. Teacher retention is not solely influenced by salary but also by satisfaction with the work environment. Investment in public school infrastructure, especially in rural and high-poverty areas, is crucial to attract and retain teachers. Policies addressing teacher isolation and utilising digital technologies can further improve retention. Infrastructure development, including better transport and connectivity, can enhance teacher mobility to rural areas (Siddiqui and Shaukat, 2021).

Introducing policy mechanisms for needs-based teacher distribution and retention and placement in remote rural areas is crucial. Offering additional monetary benefits to teachers in such regions has proven effective in countries like Gambia, South Korea, and Rwanda. Following successful examples like Sindh and Khyber Pakhtunkhwa in Pakistan, school-based teacher recruitment and retention policies could be expanded, with proper capacity building for school leaders nationwide (Rizwan and Taniguchi, 2023).

**Accountability mechanisms** are necessary to ensure that teachers fulfil their roles effectively and that educational resources are utilised efficiently. Researching the factors influencing teacher management policies can inform the design and implementation of accountability frameworks that promote transparency, fairness, and performance improvement among teachers in Pakistan (Khalid and Nadeem, 2020). Entrenched patterns of patronage and political favouritism hinder accountability initiatives in Punjab, with politically connected public sector employees exhibiting higher rates of absenteeism, often evading accountability measures like monitoring schemes (Callen *et al.*, 2023).

The Punjab Government's teacher e-transfer programme is touted as a potent tool that has the potential not only to empower teachers but also to curb corruption by reducing interactions between teachers and administrative staff. By digitising the process, the programme has streamlined operations, saving up to 140 working days annually that were previously lost to manual transfers and postings. In the period spanning 2019 to 2023, the automated system facilitated 250,060 applications for teacher transfers across Punjab, with 111,062 transfers finalised after applying transfer rules and evaluating applicants (constituting over 25% of the total teacher workforce in the province) (E-transfer, 2019). Hence, evaluating the impact of e-transfer policies in Pakistan is of paramount importance for fostering educational equity and quality.

In Khyber Pakhtunkhwa, Siddiqi (2022), employing an ethnographic approach to explore the field in which teachers operate, reports that the comparison of official and lived experiences in teacher policy reveals the enduring influence of politics of patronage and compliance on teacher performance in the province. Despite efforts to depoliticise teacher quality, performance measurement fails to capture nuanced teacher efforts. Outdated definitions of experience and seniority persist, reproducing bureaucratic narratives. Despite nascent democratic transitions, entrenched informal values perpetuate decision-making frameworks characterised by ad hoc-ism and de-professionalisation, hindering educational improvement. Reforms like the 2014 teacher recruitment de-professionalisation fall short of enhancing learning outcomes. State-level decisions offer strategic options to teachers within the bureaucratic pedagogic field, leading to mixed implications regarding compliance alignment. The findings in this study echo the evidence coming from South Asia that highlights the importance of recognising agentic expressions of service and care among teachers in training processes, and monitoring and evaluations (Setty *et al.*, 2019).

**Teacher well-being policies and strategies.** Evidence from an independent evaluation of teachers and teaching for the Girls' Education Challenge by Rose *et al.* (2021) in Ghana, Kenya, and Nepal found that teacher well-being was particularly overlooked in these contexts during the COVID-19 pandemic. At the same time, the study noted that teachers and educators took on additional duties to support girls' education during the pandemic. Female, community-based educators were found to be instrumental in supporting girls' ongoing engagement with learning, in sustaining their motivation, and reducing their risk of dropout. It is worthy of note that, despite the fact that educators were instrumental in supporting girls during the pandemic, there was no support for their own well-being. For Pakistan, which already has a cadre of overburdened teachers (see Aslam *et al.*, 2017, reporting for the Education Commission), with teachers called to fulfil all types of non-education-related duties (e.g. manning polling stations during elections), a lack of teacher well-being support is worrying, especially when teachers themselves face challenges at times when education is disrupted.

Little support is available to help teachers build the skillsets needed to effectively address and cope with both these stressors and the multifaceted demands they encounter from their students and in their professional lives (Hardman *et al.*, 2011). The supports that are available traditionally treat teachers like production functions, the input being in-service trainings focused on specific curricula and the output being gains in student learning, with little attention to helping teachers navigate the roles, expectations, and stressors they must balance at the nexus of students' lives and systems' accountability (Falk *et al.*, 2019; INEE, 2021; Mendenhall *et al.*, 2021).

The human and economic costs of deprioritising support for teachers' well-being and social-emotional competences and the systemic conditions that constrain and enable such support are clear in high- and middle-income contexts, and are just emerging in crisis contexts. Research has shown that stress and teachers' perceptions of risk impacts teachers' own physical and mental health and are associated with feelings of burnout and dissatisfaction (Katz *et al.*, 2016; Wolf *et al.*, 2015). In turn, studies in high-income contexts have found that such stress and burnout, particularly prevalent among the least experienced teachers, affects teacher attendance and attrition, pedagogical and classroom quality, and student outcomes, with cascading impacts on education systems (Hoglund *et al.*, 2015; McLean and Connor, 2015). To meet SDG4, such high costs can and must be avoided in Pakistan's education systems, by addressing teacher well-being in the teacher professional development system.

Despite the urgent need to support teacher well-being, few evidence-based teacher well-being programmes are available. A recent systematic review and meta-analysis of 46 studies (23 randomised; 23 non-randomised studies) conducted in high-income country contexts (Beams *et al.*, 2023) reveals the potential of teacher well-being interventions for reducing stress, anxiety, depression, and professional burnout, and improving well-being. However, even in high-income contexts like US, the evidence on the effectiveness of teacher-well-being interventions is scarce, with heterogeneous programme content, research design, and poor methodological quality. Such programmes often tend to require significant time, effort, and resources to deliver and complete. These programmes may not translate well outside of research trials, in real-world contexts, due to teachers being time-poor.

Investing in research and infrastructure to build a socially and emotionally competent, resilient teacher workforce is therefore critical for sustainable educational impact in Pakistan. Such an approach will not only support teachers' personal well-being but will also enhance their capacity to deliver quality education under challenging circumstances. To address this gap, there is an urgent need to identify, design, and/or evaluate promising policies, strategies, and programmes that explicitly target the promotion of teacher well-being within Pakistan's education system.

**Policy relevance:** Teacher management policies (e.g. preparation, recruitment, retention) are integral to education reform efforts and align with national and international development agendas, including the SDGs, particularly SDG 4 (Quality education). Researching the efficacy of management policies and their key determinants at the school and system level in Pakistan's education system can inform evidence-based policymaking and contribute to achieving global education goals (United Nations, 2015). By examining empirical evidence on the impact of different policy interventions, policymakers can make informed choices that optimise teacher management practices and enhance educational outcomes in Pakistan (Hanif and Zubair, 2018).

Moreover, research based on trends in CPD of teachers within Pakistan's education system is essential to improve the teaching and learning processes by optimising the impact of different modes of CPD.

The potential benefits include the refinement of the CPD system and the development of training modules that enhance the quality of education for all children, especially the most marginalised, within Pakistan. Addressing issues such as teacher recruitment, professional development, well-being, retention, and distribution requires multifaceted interventions aimed at improving incentives, enhancing accountability, and strategically reallocating teaching resources to ensure equitable access and quality education for all students. Hence, prioritising research on teacher management and teacher professional development policies and practices in Pakistan's education system is essential for improving teaching practices, teacher well-being, motivation, and accountability, and overall educational quality.

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**Sub-Theme 2.2: Improving teacher workforce quality through achieving coherence in teacher management and professional development policies and supporting teacher well-being**

**Broad research question**

What are the critical policy enablers and constraints influencing teacher management and professional development policies and practices (e.g. preparation, recruitment, retention, allocation/placement, and teacher training and professional development) in Pakistan's education system?

Have any specific reforms aimed at improving teacher management and professional development improved teaching quality and/or student outcomes, how and in what ways?

Do teacher well-being support programmes/strategies/reforms improve (a) teacher professional well-being, (b) instructional quality, and (c) student outcomes?

**Indicative sub-questions**

1. **Policy enablers and hindrances in the implementation of teacher management and professional development policies:**
- What have been the critical enablers and hindrances in the implementation of key teacher reforms in Pakistan? (Opportunity to conduct a political economy analysis; opportunity to synthesise reforms focused on teacher management and professional development.)
- What shapes the (in)coherence of the policy landscape for teacher management (recruitment, retention, and placement) and teacher professional development policy reform in Pakistan?
- What are the goals, processes, resource arrangements, capacities, and incentives of the key stakeholders (state governments, schools, teachers, etc)?
- To what extent do these goals, processes, resource arrangements, and incentives promote or detract from improving teacher retention, teaching quality, and teacher professional well-being?

2. **Teacher recruitment policies and teacher professional development:**
- How have specific teacher professional development programmes (both pre-service and in-service) improved teaching practices and learning outcomes in Pakistan, if at all?
- Does teacher recruitment and professional training policy reform (e.g. teaching licensing in Sindh) improve (a) the quality of teaching practices and (b) student learning outcomes? (Potential evaluation question if systematic data on teacher retention exist.)

- How do teacher retention and placement policies (e.g. transfers and rationalisation) influence the teacher retention rate, accountability, and overall educational quality in different geographical areas, especially in remote rural schools of Pakistan?
- Have specific teacher management and/or professional development reforms improved accountability and teaching quality? Have they generated improvements in teacher retention rates and student outcomes? Is there variation by location (e.g. rural versus urban)?

**3. Teacher well-being reforms:**

- How do government teacher recruitment, management, and accountability reforms, policies, and strategies in Pakistan affect teacher well-being?
- What are the effects of policies, strategies, and programmes aimed at improving teacher well-being support in Pakistan, if any? Do these show improvements in (a) instructional quality and/or (b) student outcomes?
- What are the school, community, and individual predictors of teacher professional well-being (motivation, agency, burnout/mental health) in Pakistan? Does teacher well-being in Pakistan predict teaching quality and student learning?

## Sub-Theme 2.3: Improving the quality of education through supporting school leadership

School leadership is widely recognised as a pivotal factor in determining the quality of education and the success of students. School principals (head teachers) worldwide are held accountable for educational quality assuming their influence on student performance (Witziers *et al*., 2003). In Pakistan, amidst ongoing educational reforms, understanding the intricacies of effective school leadership and empowering educational leaders are paramount for enhancing educational outcomes.

**Role of effective school leadership for improving school performance.** Existing evidence suggests that effective school leadership can improve schools' performance, through contributing to schools' organisational functioning, including an improved school climate, safer classrooms, and more motivated and effective teachers (Malik *et al*., 2017). School leaders are not merely administrators and managers, they can also function as effective leaders who guide effective teaching and learning within schools. Examining factors contributing to effective school leadership, such as leadership qualities, practices, and strategies conducive to improved school performance and student achievement, can help identify key areas for capacity building and professional development among school leaders, leading to more efficient management practices and better overall school performance (Bush, 2011; Leithwood *et al*., 2004).

School leaders significantly influence the well-being and socio-emotional development of students. Research can equip school leaders with the knowledge and skills to create positive school climates, foster student engagement, and support holistic student development (Waters *et al*., 2018). Furthermore, school leaders can play a pivotal role in promoting equity and inclusion in education. Research can guide the development of strategies that foster inclusive school environments, catering to the diverse needs of students, including those from marginalised backgrounds (Shahzad *et al*., 2019). The intersectionality of gender and school leadership is an important factor in the context of Pakistan, as women in educational leadership often face additional challenges due to societal biases in male-

dominated sociopolitical-cultural contexts (Shah, 2023). Supporting school leaders is a prerequisite for them to be able to foster inclusive school environments.

School leaders are also instrumental in supporting teacher professional development and creating conducive teaching and learning environments. Empowering school leaders through research-informed practices can enhance their ability to provide instructional leadership, mentorship, and support to teachers, thereby improving teaching quality and student outcomes (Day *et al.,* 2009).

Effective school leadership is also crucial for promoting accountability and good governance in education. Researching the determinants of effective leadership can inform strategies for enhancing transparency, accountability, and stakeholder engagement in school management and governance processes, thereby improving overall educational governance (Fullan, 2014).

However, thus far, there is limited research on successful school leadership, and this has resulted in inconsistent conceptualisation of, and evidence on, effective school leadership, and a lack of actionable information on how to support school leaders (Robinson, Lloyd and Rowe, 2008; Leithwood and Jantzi, 2000; Hallinger and Heck, 1998, 1996b). For example, Leithwood and colleagues (2008) make seven claims about successful school leadership, emphasising that such leadership is second only to classroom teaching in influencing student learning. However, their claims require empirical validation and may oversimplify the multifaceted nature of educational leadership (Leithwood *et al*., 2008). Moreover, different conceptualisations of educational leadership fuel debate (Witziers *et al*., 2003). While some view it as involving instructional leadership, others see it as intertwined with management (Earley and Weindling, 2004; Blase and Blasé, 1999). Witziers *et al*. (2003) suggest that educational leadership involves managerial instruments that seek to achieve educational objectives. As a result, some studies report direct or indirect effects of school leadership on student learning (Bruggencate *et al*., 2012; Sergiovanni, 2001; Hallinger and Heck, 1996a), while others find no significant impact (Van de Grift and Houtreem, 1999). Murphy (1988) even questions the alleged positive impact of educational leadership. Disagreements also arise regarding measurement methods, with some favouring direct effects models and others indirect effects models (Witziers *et al*., 2003). These complexities in conceptualisation and measurement necessitate further research to provide clear guidelines for effective school leadership in diverse contexts (Allen *et al*., 2015).

**(Lack of) evidence on policies/strategies/reforms supporting school leaders.** Despite the critical role of school leaders in the effective functioning of schools, the role of school leaders within broader school reform efforts is understudied in Pakistan (Malik *et al*., 2017). According to Malik *et al*. (2017), there are very few high-quality studies that document school leadership practices in Pakistan, with existing studies mostly being qualitative in nature, with a focus on very few schools or school heads (Khaki, 2006; Shafa, 2011; Karim, 2015; Mansoor and Akhtar, 2015, as cited in Malik *et al*., 2017). Malik *et al.*'s (2017) study notes that critical gaps in school management practices in the public sector in Punjab create leadership vacuums and limit how well head teachers are able to cope with critical school management issues. For example, an absence of designated posts and a lack of positional recognition of head teachers in public primary schools creates a leadership vacuum; and a lack of professional development for effective school leadership leaves head teachers ill-prepared to deal with challenges in school, teacher, and student management in schools.

**Role of adaptive school leadership in response to disruptions.** The role of school leadership is even more important in Pakistan's context, where frequent disruptions, including crisis events due to

sociopolitical and economic instability and climate and natural disasters (e.g. climate disasters, pandemics, security concerns), interrupt day-to-day school functioning. When a crisis arises, students, families, and communities often rely on schools to foster stability and serve as a conduit to resources. School leaders may be required to communicate effectively with staff and media; make operational, managerial, and logistical decisions quickly and under immense pressure; efficiently assess families' needs; manage resources; and integrate parent and community voices in governance (Potter *et al.*, 2020). Yet they face many challenges, often with little guidance, and feel ill-prepared to best respond to crises (Potter *et al.*, 2020; Mutch, 2015). Given the frequent and widespread disruptive events due to economic instability and climate disasters in Pakistan, it is critical to support school leaders' capacity to adapt and respond in the face of crisis events, to ensure access to, and quality and continuity of, education.

The research conducted under this sub-theme will focus on identifying key reforms focused on school leaders that have potentially led to improvements in autonomy and performance (e.g. enrolment, attendance, participation, teaching, and student learning outcomes). It will include studies that focus on identifying and evaluating the effects of promising policies and strategies that help build capacity and foster autonomy of school leaders in regard to effectively responding to disruptive events.

**Policy relevance**: Investing in effective school leadership is essential for building sustainable education systems that can adapt to changing needs and challenges. By prioritising research on school leadership, Pakistan can develop leadership capacity that fosters innovation, resilience, and continuous improvement, contributing to long-term educational sustainability (UNESCO, 2021). Prioritising research on school leadership also aligns with national and international education agendas, including the SDGs, particularly SDG 4 (Quality education). The importance of selecting competent leadership for all schools is prioritised in the 'Priority Programme 5' of the PESP (2019).

In conclusion, research on effective school leadership is indispensable for enhancing educational outcomes and advancing educational reform in Pakistan. Understanding the complexities of educational leadership and its effects on student outcomes requires interdisciplinary research and contextual understanding. The role of adaptive leadership in response to disruptive events is of even more critical importance in Pakistan's challenging context, where political and climate insecurity prevails. Only through comprehensive investigation can effective leadership practices be identified and applied to enhance educational quality and student success, assisting Pakistan with strengthening its education system, promoting equity and inclusion, and progressing towards achieving its educational goals.

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**Sub-Theme 2.3: Improve quality of education through supporting school leadership**

**Broad research question**

What type of school leadership predicts school performance and student outcomes in the Pakistan context?

What school leadership programmes/strategies/reforms in Pakistan, if any, affect school leadership capacity and autonomy?

How can school leaders be supported to apply adaptive leadership when faced with disruptions to education?

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**Indicative sub-questions**

**1. Identifying successful school leadership:**

- What type of school leadership predicts student enrolment, attendance, participation, and learning outcomes in Pakistan context? How?

**2. School leadership reforms**

- What educational reforms and policies/strategies, such as designated posts, training, and autonomy, affect school leaders' capacity? Does improved school leadership capacity, in turn, improve student enrolment, attendance, participation, and learning outcomes in Pakistan?
- What are promising interventions/programmes in supporting school leadership in Pakistan? Do these show improvements in (a) school management, (b) teaching effectiveness, and/or (c) student outcomes?

**3. Adaptive school leadership in response to disruptions**

- Are there current efforts/interventions that are aimed at supporting schools and school leaders when faced with disruptive events such as floods?
- Do school leaders have the support, resources, and training needed to delivery education when faced with disruptive events?
- What are promising strategies to support adaptive school leadership when faced with disruptions to education?
- What shapes (in)coherence of the policy landscape in regard to effective, nimble, and adaptive school leadership to ensure access to, and quality and continuity of, education during disruptive events in Pakistan (climate disasters, pandemics, security concerns)?
- What are the goals, procedures, resource arrangements, and incentives of the key stakeholders (state government, school heads, teachers, communities, parents) when faced with such disruptive events? To what degree do these goals, processes, resource arrangements, and incentives promote or detract from improving school leaders' effective and adaptive response to disruptive events?

## Priority Area 3: Resilient education service delivery

Pakistan's education system is no stranger to climate and natural calamities. The system at scale was exposed to major shocks in the aftermath of the 2005 earthquake, the floods in 2011 and 2022, and the COVID-19 pandemic. The 2022 floods left one-third of the country submerged in flood water and almost 26,000 schools destroyed, leaving the most vulnerable at risk of falling deeper into poverty and entailing disruption to the learning opportunities of 3.5 million children (World Bank, 2022b; ESWG, 2022). The 2005 earthquake in northern regions of the country caused 1.5–2 grades of learning loss among affected learners and an estimated 15% decrease in their lifetime earnings (Andrabi *et al.*, 2020). A post-2011 floods study reported damages to school infrastructure as the most cited reason for children not coming back to school (Alexander, 2011) and reported that more than 10,000 schools were damaged by these floods across the country.

Given the widespread and severe impacts of climate and other disasters in Pakistan, it is critical to build the capacity of the education system as a whole to prepare for, anticipate, and respond to crises conditions. Research under Priority Area 4 will explore the relationship between disruptive events (e.g.

climate-related events) and education in Pakistan, and what works to develop an education system that is resilient and provides continuity in quality education to all children. Specifically, DARE-RC organises related research around the following broad research question:

**What works to develop resilient education service delivery continuity through greater systems coherence?**

Specific research topics include documenting and investigating the impact of climate change on teaching and learning continuity; and evaluating strategies for building system resilience, including promising interventions that seek to integrate awareness and the effects of climate change with education policy and practice.

## Sub-Theme 3.1: Understanding and ensuring teaching and learning continuity when faced with disruptions to education

Research under this sub-theme focuses on exploring system preparedness and the consequences of disruptive events, such as climate-induced disasters, for teaching and learning continuity. The studies under this sub-theme will generate evidence on the ways in which climate-related disruptions affect students, teachers, and schools across different regions in Pakistan. This sub-theme will also seek to understand key education stakeholders' knowledge, skills, participation, and agency in regard to climate adaptation and mitigation to maximise the potential for participation in addressing the climate and environmental crisis across all regions of Pakistan.

**Educational experiences and trajectories of learners affected by climate-related disruptions.**
Climate change-related hazards and the entailing adversities threaten education access and outcomes of all learners across the continuum (UNICEF, 2020) and widen inequalities (UNDRR, 2022). There is ample evidence that weather calamities cause huge disruptions to the teaching and learning process. The barriers to access, interruptions to learning continuity, dearth of flexible learning environments, and learning losses are highlighted in the 'Pakistan Floods 2022: Post-Disaster Needs Assessment Report' (Government of Pakistan *et al*., 2022). The effects of these disasters on education are both direct and indirect: for example, flooding destroys schools, droughts result in children having to go further to collect water, and the financial impacts of climate shocks mean families cannot afford to keep children in school. Even when children stay in school, environmental changes such as temperature increases and high levels of pollution make learning difficult, as children's physical well-being and ability to concentrate are compromised (FCDO, 2022). Moreover, the impact on education is often greater for those facing social disadvantage: girls, young people living in rural areas, low-income families, learners with disabilities, and those with one or more of these intersectional identities (Dahlin and Barón, 2023; IDDC, 2023; GADRRRES, 2022; Najam and Bari, 2017; UNICEF, 2022; World Bank, 2022b). For example, the post-2022 Pakistan flood evidence indicates that the gap between the enrolment of girls and boys was exacerbated following the floods, making it even less likely that girls would get back to school (Sarwar, 2023), leaving girls' education 'disproportionately deprioritised' (Government of Pakistan *et al*., 2022, p. 46). In addition, certain regions of Pakistan are particularly prone to the impacts of climate change: for example, those in the northern areas, in Sindh and in Balochistan. It is well known that the floods that recently hit the country catalysed many risks faced by vulnerable and marginalised populations living in these regions. However, there is little research documenting the lived experience and educational trajectories of children affected by climate-related disasters,

especially among those who are marginalised due to their gender, disability, ethnicity, religion, location, and/or socio-economic status.

Promising climate education practices, interventions, policies, and strategies for building climate resilience and ensuring teaching and learning continuity. There is limited evidence on what works to build climate resilience and ensure teaching and learning continuity when faced with climate-related disruptions. However, lessons from the COVID-19 pandemic highlight the challenges, and key areas where support was needed, when schooling was disrupted. Specifically, the ASER 2021 report revealed that while teachers continued teaching remotely during COVID-19, only a fraction of such teachers (17% urban and 13% rural) were able to connect with learners all five days of the week, suggesting the challenges of remote education implementation. The report also identified a lack of evidence regarding learners' and teachers' academic activity during the COVID-19 pandemic. It highlighted the importance of exploring the barriers teachers face to reaching their students during such calamities (Viamo, 2021). The report also suggested the potentially key role of family support to ensure learning continuity. For example, more than half of the children interviewed for the ASER 2021 report reported not feeling confident enough to initiate learning on their own, but children with family support for learning during COVID-19 had better learning outcomes than those who did not have that essential support at home (ASER Pakistan, 2021).

The Pakistan School Safety Framework (PSSF) is the key policy initiative designed to provide policy guidance and set a standard when faced with hazards and unforeseen circumstances at the national, provincial, district, and school levels. As a policy, PSSF is designed to meaningfully engage all relevant stakeholders to promote a safe learning environment through a series of activities that prepare schools and communities for hazards and unforeseen circumstances.

Despite this guideline being in place, little evidence exists on how these recommendations are implemented in practice or how they contribute to climate change awareness and education system resilience. In addition, to date, climate change education and programmes have been largely informed by global quantitative data, which do not adequately reflect the local context and lived experiences of teachers, learners, and communities. There is a dearth of literature on the resilience of the education system, i.e. actual strategies adopted at the school, community, and system level to anticipate, prepare for, and respond to hazards. This reflects the need to explore the Pakistani education system at multiple levels and identify ways to bolster its resilience against the effects of climate and natural hazards, thereby mitigating learning disruption and losses.

**Policy relevance:** To bridge the gap between the impact of disasters on education in Pakistan and the need for further investigation, the importance of understanding the specific challenges faced by Pakistan's education system and taking initiatives to develop effective resilience strategies tailored to its unique context cannot be overemphasised.

This sub-theme will also seek to understand key education stakeholders' knowledge, skills, participation, and agency in regard to climate adaptation and mitigation to maximise the potential for community participation in addressing the climate and environmental crisis across all regions of Pakistan. Studies will explore how governments in Pakistan can optimise disaster preparedness, response, and resource allocation to build climate resilience in the education system. Research questions are expected to highlight the nuances and the potential misalignment in education service delivery when exposed to climate-induced crises and hence identify the missing links that need to be

in place to ensure learning continuity, especially for learners from marginalised segments, i.e. children from rural areas, girls, children with disabilities, and children from low-income groups.

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**Sub-Theme 3.1: Ensuring teaching and learning continuity when faced with disruptions to education**

**Broad research question**

How do learners, especially marginalised individuals, and their parents, teachers, and communities, understand and experience climate (and other) disaster-related disruptions to their education?

How do disruptive events, such as those induced by climate change, influence access to, and quality and continuity of, education in different regions of Pakistan? What factors aggravate or mitigate the impacts of disaster-related disruptive events?

What are the effects/impacts of existing climate education practices and policies, if any, in preparing and capacitating schools and teachers to help their students build resilience (knowledge, understanding, and responsiveness) to climate-related and/or other disruptions?

What are promising and scalable policies, strategies, and programmes to prepare learners, teachers, schools, and communities for climate disaster risks?

**Indicative sub-questions**

1. **Understanding the lived experience of education in the face of disruptions:**
   - How do learners, and their parents, teachers, and communities understand and experience climate (and other) disaster-related disruptions to their education?
   - What are the perceived effects of climate disasters on access to, and quality and continuity of, learning?
   - What are the risks and protective factors within schools, households, and communities?
   - Are there perceived differences by marginalised status (girls, children with SEND, religious minorities, those in rural areas)?

2. **Tracking the continuity of education of learners facing climate disaster risks:**
   - What are the trajectories of education access, quality, and continuity for learners before and after they experience climate disaster-related disruptions?
   - What systematic (e.g. gender, disability, religious minority), individual (academic/social-emotional competence, motivation), household, and community factors predict educational trajectories affected by climate disasters?
   - What school mitigation/response strategies predict educational trajectories affected by climate disasters?

3. **Climate education practices and policies**
   - Are there current efforts/interventions aimed at supporting educators/teachers when faced with disruptive events such as floods?
   - Do educators/teachers have the support, resources, knowledge, and training needed to deliver education when faced with disruptive events?
   - How do the current climate education curricula, practices, and policies at the national and provincial levels prepare and capacitate schools and teachers to help their students build resilience (knowledge, understanding, and responsiveness) to climate-related and/or other disruptions?

- How can educators/teachers be supported to provide adaptive teaching when faced with disruptions to education? Are there examples of best practice globally and from Pakistan of what has worked?

4. **Policies and interventions for teaching and learning continuity:**
- What specific policies and interventions aimed at teachers and learners during the climate change-induced flooding of 2022 were found to be effective in maintaining the continuity of learning in Pakistan? How can they contribute to adaptation and mitigation actions to respond to current and future climate change impacts?
- What shapes (in)coherence of the policy landscape for effective, nimble, and adaptive teaching strategies to ensure access, quality, and continuity of education during disruptive events in Pakistan (climate disasters, pandemics, security concerns)?

## Sub-Theme 2: System resilience to climate change

Resilience to climate change requires the ability to monitor, learn, anticipate, and prepare for climate change-induced disasters. Research in this sub-theme will examine the state of preparedness of the education systems at the provincial, district, sub-district, and school levels to ensure continuity of service provision in the face of climate change-induced disasters. This sub-theme will also seek to understand key education stakeholders' (educators', learners', parents', communities') knowledge, skills, and agency in regard to climate adaptation and mitigation across all regions of Pakistan.

System preparedness for climate resilience. Frequent natural and climate-related disasters that force the closure of schools at scale are key factors contributing to poor access to, and quality and continuity of, education in Pakistan (ASER Pakistan, 2022; Baron *et al.*, 2022; Dahlin and Baron, 2023; Najam and Bari, 2017; PIE, 2022; UNICEF, 2022; Zaidi *et al.*, 2020). Globally, the COVID-19 pandemic led to prolonged school closures, resulting in significant learning losses (Akmal *et al.*, 2020; UNICEF, 2020). In Pakistan, the education system's recovery from the pandemic was struck a harsh blow by the floods in 2022, which had a negative multiplier effect. The 2022 floods not only forced school closures but also reduced and eliminated family incomes, destroyed homes, ravaged crops, forced displacements, and enhanced malnutrition risk (Government of Pakistan *et al.*, 2022; NDMA, 2022; OCHA, 2022; WFP, 2022). The cumulative effect of all of these structural factors on the learning of children was substantial and profoundly disruptive (Chuang *et al.*, 2018, Government of Pakistan, 2022; Khan and Hussain, 2023; Najam 2023; UNICEF, 2022). The damage to the physical infrastructure made recovery even more difficult (Baron *et al.*, 2022; Dahlin and Baron, 2023; Najm, 2023).

Addressing the massive issues facing education service delivery in Pakistan necessitates focusing on building system-wide resilience. System resilience to climate change is the ability to monitor, learn, anticipate, and prepare for climate-led risks, along with building the capacity of the system to mitigate risks associated with disasters (FCDO, 2022; Petal and Izadkhah, 2008; Shiwaku and Shaw, 2016). Notably, disaster risk reduction in the education service delivery is not only about injecting climate-related content into curriculum or books: it also includes building safe infrastructure, enhancing student skills, and increasing education stakeholders', including educators', learners', parents', and communities' capacity to respond to disasters (Shiwaku and Shaw, 2016).

To ensure a system remains resilient in the face of disaster, it is essential to align its key components and to facilitate the flow of critical information and resources needed for its operations (FCDO, 2022; Peek *et al.*, 2018). Furthermore, implementing thoughtfully designed, adaptable mechanisms is vital for raising awareness, enhancing preparedness, and building capacity to mitigate risks associated with climate change (FCDO, 2022; Najam, 2017).

The existing policy frameworks for disaster preparedness in Pakistan, such as the PSSF and the Resilient Recovery, Rehabilitation, and Reconstruction Framework (4RF), emphasise the importance of resilience-building measures in mitigating the impact of disasters on education (Government of Pakistan *et al.*, 2022; NDMA, 2017). The PSSF was formulated to assist the Ministry of Education and education systems' key stakeholders to provide policy guidance and to set standards for the implementation of comprehensive school safety at national, provincial, district, and school levels (Government of Pakistan, 2017). It is a guiding document that suggests a variety of initiatives to ensure school communities make conscious and systematised efforts to assess risk from potential natural and man-made hazards and to be secure from and able to respond effectively to those risks while ensuring continued learning in a conducive environment. The 4RF is the Government of Pakistan's strategic policy and prioritisation document that was formulated as a result of the post-disaster risk assessment study of the 2022 floods. It guides the recovery, rehabilitation, and reconstruction of the country. The PSSF is relevant to schools only, while the area addressed by the 4RF is broad and reflects what the overall societal response led by the government should be like.

Despite these policy initiatives and efforts to build systems' capacities to respond to disasters, there is little evidence available on the application and efficacy of both of these policy frameworks for children, teachers, schools, any other relevant agencies, or a segment of society, as a tool to guide resilience in times of crises. In addition, thus far, there has been little effort to understand and incorporate local voices and perspectives, and ensure the participation of direct education stakeholders, including learners, educators, parents, and community members, which is likely critical in mitigating risks and effectively ensuring educational access, quality, and continuity when disaster hits (Cuartas *et al.*, 2024). The lack of critical information relating to building resilient education systems across the diverse contextual settings of Pakistan highlights the need for further research in this area.

**Policy relevance:** Following the 18th Constitutional Amendment and resulting devolution of education portfolios to the provinces, provincial education sector plans serve as policy documents. A quick review of these plans indicates the desire to build climate-resilient school infrastructure that is also responsive for children with disabilities and girls. In Sindh, there is mention of climate resilience as part of health and nutrition for improving retention, but no activities are suggested and no resources are allocated to achieve climate resilience (SESP&R, 2019–2024). In Balochistan, the vulnerability of the system is highlighted in general, but no concrete plan is in place to reduce risks or build capacity (BESP, 2020–2025). The Khyber Pakhtunkhwa Education Sector Plan highlights the lack of a mechanism to evaluate climate resilience and reflects the ambition to initiate it and allocate district climate emergency funds to ensure learning continuity in case of emergency (KPESP, 2020/21–2024/25). In Punjab, the Provincial School Safety Plan of Action is in place. Training of teachers on Disaster Risk Reduction (DRR) in the most vulnerable districts has been conducted. There is an acknowledgement of the need to update the training modules; however, there is no intention to expand DDR training to other districts (Punjab Education Sector Plan, 2018). This overview of provincial education sector plans highlights the need for further effort and focus to integrate climate resilience into education sector

planning and implementation. Currently, there are hardly any data regarding the resilience of physical infrastructure, teacher and student capacity building, community engagement, resource allocation, and accountability.

Research under this sub-theme aims to generate rigorous evidence on the diverse aspects of climate- and disruption-resilient education service delivery that are missing currently, in order to provide clarity for policymaking and implementation.

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**Sub-Theme 3.2: System resilience to climate change**

**Broad research question**

What policies, strategies, and programmes can improve education system resilience at school, district, and provincial levels to the effects of disruptive events, such as those caused by climate change, future pandemics and natural disasters, especially for the most marginalised?

What are the experiences and perspectives of learners, teachers, parents, and communities on resilient education systems?

**Indicative sub-questions**

1. **System responsiveness and successful practices for climate resilience:**
   - How do education systems (at school, district, and provincial levels) in Pakistan assess, monitor, and respond to hazards, risks, and vulnerabilities to climate change-related and/or other crises at the school and community level?
     a. Are there current policy efforts/interventions that are aimed at supporting learners, especially the most marginalised, when faced with disruptive events such as floods?
     b. What factors shape the (in)coherence of the policy landscape to ensure access to, and quality and continuity of, education during disruptive events in Pakistan (climate disasters, pandemics, security concerns)?
     c. What are the goals, procedures, resources, arrangements, and incentives of key stakeholders (e.g. state governments, school heads, teachers, communities, parents)? To what extent do these promote or detract from ensuring effective and adaptive responses to disruptive events (e.g. based on examples of promising data-use practices and strategies for data-informed disaster preparedness planning)?
     d. What are the key challenges and successful practices in coordinating and implementing crisis mitigation and response strategies at the district, school, community, and provincial levels to ensure the continuity of education during disruptions?
   - How does Pakistan's National Curriculum currently address climate change education in terms of content, approach, and student engagement? What specific changes could be made to Pakistan's National Curriculum to educate students more effectively about climate change?
2. **Understanding local perspectives and the role of educators, communities, and parents in building a resilient education system?**
   - What does a resilient education system mean for learners, teachers, parents, and communities?
     a. What do they perceive as their role in risk management, adaptation, and resilience building?

b. How are parents and communities engaged in education system resilience-building activities and how can their resilience be strengthened?

c. How do gender, disability, location (urban/rural), belonging to a minority, and/or being from a poorer socio-economic background affect experiences of risk-informed learning environment and resilience building?

- How have recent experiences in relation to disruptions (e.g. climate-related, pandemics, law and order) shaped the understanding of learners (especially for the most marginalised), teachers, school heads, and local communities regarding a resilient education system in the context of Pakistan? How has this understanding translated into localised adaptation and mitigation strategies by schools and wider communities? What are learners' perspectives, especially the most marginalised, on their knowledge and agency in regard to meeting the challenges of disruptive events for their education experiences?

## Priority Area 4: Accountable education systems

A global body of evidence suggests that weak governance in the education systems of developing countries can constrain the effectiveness with which inputs are translated into outcomes. Kingdon *et al.* (2014), in their summary of evidence on the political economy of education, argue that rent-seeking and patronage politics within education policy systems can result in leakages and incoherence within the governance structures of the system and obstruct the effective provision of educational access, quality, and continuity, and that vested interests can hinder efforts to reduce corruption. On the other hand, there is also a large body of high-quality evidence from a variety of contexts that interventions that aim to improve the governance of school systems may have large positive impacts on learning outcomes in developing countries, which promises potential for such interventions within Pakistan's education system.

However, changing education system governance at scale is also constrained by political factors and by the incentives and disincentives of key stakeholders at the school, community, local, district, and national levels, and the interplay between them. This is a key gap in education research in Pakistan: specifically, understanding the implemented system-wide education reforms. For example, better understanding of how accountability is practised through power dynamics and the flow of information among people working at different levels in decision-making process is critical in order to design and implement effective education reforms within Pakistan's devolved education system.

Priority Area 4 of the DARE-RC research agenda aims to promote research that fills key evidence gaps on these issues in Pakistan, organised around the following broad research question:

**What works to enhance accountability to improve education system cohesion in Pakistan?**

Specifically, research under this priority area will focus on exploring the political economy considerations surrounding decentralisation reforms in the country, as well as examining the (in)coherence of school monitoring and accountability systems. The functionality of accountability mechanisms, as well as feedback loops between education departments and parents/communities that shape an effective government system, need further exploring and form part of this theme.

### Sub-Theme 1: Decentralisation and governance

The research under this sub-theme will explore the intricate relationship between decentralisation, governance, and its impact on education service delivery in the Pakistani context. Given the peculiar political situation of Pakistan, and its policy relevance for education service delivery, it is important to understand how governance structures and accountability mechanisms are shaped by the power dynamics inherent in the implementation of decentralisation across diverse contexts within Pakistan, with specific consideration of the trade-off between equity and efficacy.

Decentralisation refers to the distribution of authority in decision-making processes relevant to governance and service management. In Pakistan, after the 2001 reforms, the transfer of funds from the central government to district accounts, instead of provincial accounts, enhanced the fiscal capability of local governments, including spending per school. The 2007 decentralisation in the education sector, enhancing the spending capacity of Parental–Teacher Councils, resulted in better primary graduation rates in Khyber Pakhtunkhwa (Rahim, 2019). Watson and Khan (2010) also reported that two capacity-building initiatives enabled by the decentralisation – the Punjab Education Sector Reform Programme and the Strategic Policy Unit – significantly improved the Punjab education system's delivery capacity in just four years. However, the sustainability of these initial successes is questionable given the political economic factors that impede long-term gains in education service delivery. These reforms lacked sustained political ownership, which is a critical factor in developing public sector capacity (Watson and Khan, 2010; Baser and Morgan, 2010).

While the 18th Constitutional Amendment led to a rise in the budget share of smaller provinces for the first time since 1971, a transfer of authority and resources to the local level has yet to be seen. The true benefits of decentralisation for education service delivery will only be visible if authority and resources are delegated to the community level (Androniceanu and Ristea, 2014; Busemeyer, 2012). A comparison of PSLM data for the period before and the period after the Constitutional Amendment (2005–2009 and 2011–2015) by Jamal (2021) reveals no significant change in education indices (non-compensatory composite indices) across all provinces, except Balochistan, where education indicators improved. On the contrary, Kakar *et al*. (2022), investigating the state of education service delivery in Balochistan after the 18th Amendment, report serious gaps in critical aspects of education governance, such as school management, capacity building, accountability through local stakeholders, and deployment and management.

While there have been efforts to address these gaps and monitor the performance of districts and schools within the decentralised education governance landscape, these have been largely unsuccessful. In Khyber Pakhtunkhwa, Afteb (2019) found improved health and education indicators after decentralisation but suggested a need for further exploration to better understand the nuances and implications in Pakistan's broader education policy landscape. In Sindh, Arian and Fakir's (2023) study on the implementation of the Sindh School Cluster Policy 2021, another decentralisation effort, identified gaps between policy and practice, and suggested the involvement of the community in decision-making, transfer, and transparency in relation to resource utilisation for improved school outcomes. This study underscores the need to further explore this mode of decentralisation which involves a balanced distribution of responsibilities among district officials to enhance school improvement.

**Policy relevance:** The gaps identified in the existing literature on decentralisation and the governance of education in Pakistan underscore the need to delve deeper into issues of equity and efficacy,

particularly in the context of the decentralisation of authority at the local level. There is a pressing need for additional evidence in diverse Pakistani contexts to inform strategies aimed at enhancing access, improving learning quality, refining school management practices, and ensuring transparent resource utilisation.

A critical area requiring investigation is addressing capacity and political economy-related challenges so as to maximise the benefits of decentralisation in Pakistan. The DARE-RC research will endeavour to generate vital evidence on these aspects of decentralisation, examining their impact on the governance of education and the accountability mechanisms at play.

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**Sub-Theme 4.1: Decentralisation and governance**

**Broad research question**

What are the political economy considerations around the decentralisation of education policies and governance in Pakistan and how have reform efforts affected the effectiveness of public schools?

Which factors enable or hinder decentralisation efforts for improved educational outcomes?

What factors affect the accountability and effectiveness of the decentralised education systems in Pakistan? What promising strategies can facilitate the accountability and effectiveness the decentralised education systems in Pakistan?

**Indicative sub-questions**

1. **Political economy of decentralisation reform**:
   - How has the decentralisation of education influenced the functioning of public schools in Pakistan?
   - How are responsibilities and accountability distributed across key stakeholders at national, state, district, official, and school levels?
   - What are the goals, processes, resource arrangements, capacities, and incentives of these key stakeholders in relation to ensuring education access, quality, and continuity? How are they aligned/misaligned within and across stakeholders?
2. **Implementation challenges:** What are the key challenges faced by district, sub-district, and school-level decision makers in implementing decentralised education policies, and how can these challenges be overcome to improve education outcomes?
3. **Bottom-up accountability**: What feedback loops that can be created to revise and amend policies as they are being implemented? How can local communities, parent groups, and other district- and school-level stakeholders get involved in providing timely feedback on the implementation of policies?

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## Sub-Theme 2: Coherence of school monitoring and accountability systems

This sub-theme delves into the multifaceted factors that influence accountability within the education system, specifically examining how school- and district-level management staff and other education managers can have better accountability for improved quality of student learning experiences. It also focuses on how various stakeholders function within the system to achieve desired outcomes.

Accountability in education encompasses a set of relationships wherein stakeholders, acting as principals, expect agents (such as teachers and schools) to achieve agreed-upon tasks in exchange for resources or incentives (Pritchett, 2015). This includes sharing information on improved student learning gains against established standards with stakeholders who provide resources or consume educational services (Harris and Brown, 2013; Hess and Petrilli, 2007). Accountability also entails utilising data for internal evaluations (Ebbeler *et al.*, 2016), with Penninckx (2017) emphasising the role of inspections in holding schools accountable. Furthermore, teachers' improved responsiveness to students through reflection is considered a crucial aspect of accountability (Loh and Hu, 2014).

Global evidence suggests that unilateral enhancements in schooling inputs (e.g. teacher qualifications, salaries, physical infrastructure) without aligning accountability with teacher and management performance may increase enrolment but might have no positive impact on student learning outcomes (Pritchett, 2013).

In Pakistan, inherent challenges in existing public sector education delivery hinder the cultivation of effective accountability practices (Cheema and Mohmand, 2007; Watson and Khan, 2010). Deep-seated patronage and clientelism in the political economy of education, coupled with limited political competition in relation to educational performance (Cheema *et al.*, 2006; Hickey and Hossain, 2019; Javid, 2019), contribute to weak systemic performance and pervasive learning poverty in low- and middle-income countries like Pakistan (Pritchett, 2013). Additionally, evidence suggesting comparatively better learning outcomes in an expanding network of private schooling in countries (Muralidharan and Sundararaman, 2015) fuels debates about the influence of private schooling on educational accountability.

There is increasing interest in exploring various aspects of accountability, and their correlation with improved pedagogical practices and learning outcomes in low- and middle-income countries. In this regard, the relationship between school accountability mechanisms and the enhancement of teacher performance and education quality has gained significant attention. For example, Estrada (2019) demonstrated that in Mexico, merit-based hiring of teachers resulted in better student performance. Monitoring teacher attendance and linking it to their salaries led to a substantial reduction in absenteeism in India (Duflo, Hanna, and Ryan, 2012). Similarly, positive student learning outcomes and enhanced teaching practices correlate with regular parent–teacher meetings (Islam, 2019; Kremer *et al.*, 2013).

In Pakistan, as well, there is increasing interest in policy reforms that address the accountability structure of the teaching workforce, to improve teacher performance. However, these policy efforts have not always been successful. For example, Asad *et al.* (2020) examined the Khyber Pakhtunkhwa Government's reforms aimed at increasing educator accountability through performance-based teacher and head teacher promotion policies in a randomised controlled trial and found no effect of these reforms on teacher performance or student outcomes. Moreover, there was no association between teacher performance reviews and student learning outcomes (Habib, 2015; Asad *et al.*, 2020). The authors concluded that wider 'system incoherence' may be to blame for deep-rooted 'mental models' that are resistant to change.

There are numerous other high-quality studies in Pakistan that have examined teacher governance and accountability within the context of non-state/private versus government schools and focusing on teacher contracts and salaries linked with performance. The evidence from this body of evidence is

mixed. De Talancé *et al*. (2017), using Learning and Educational Achievements in Punjab Schools (LEAPS) data from rural Punjab, find that teachers employed on fixed contracts generate better pupil outcomes, suggesting that strengthening the supervision of both permanent and contract teachers, with repercussions for poor performance that are credible, may be a useful policy. Another study, by Barrera-Osorio and Raju (2017), which explored teacher performance pay in a government administered pilot in Punjab, did not find positive student outcomes associated with teacher bonuses. An evaluation of education reforms in Punjab found that a centralised data-driven accountability approach generated compliance and activity but tended to focus on process rather than outcomes (Malik and Bari, 2023; Gulzar *et al*, 2023).

Research evidence also reveals the misalignment in interventions and accountability in public education service delivery in the developing world, including Pakistan, particularly highlighting weak alignment between teacher performance management and learning outcomes (Glewwe *et al*., 2014; Glewwe and Muralidharan, 2015; Kremer *et al*., 2013). For example, in Indonesia, doubling teacher salaries without linking them to student learning outcomes did not sustainably improve teacher performance (Muralidharan *et al*., 2018). Salaries for public sector teachers do not exhibit a correlation with teacher value-added, unlike in the private sector in Pakistan (Bau and Das, 2020). Similarly, reducing class sizes in Kenya did not enhance student learning without subsequent changes in teaching practices (Duflo *et al*., 2012). Likewise, in Kenya, increasing education spending without increasing accountability did not lead to improvement in student learning outcomes (Glennerster *et al*., 2011). Nawab (2020) found that upskilling teachers after recruitment did not translate into improved performance without linking the capacity-building initiative to incentives and accountability.

Given the mixed evidence of policy impacts and the challenges of implementing reforms due to system misalignment and incoherence, it is critical to deepen our understanding of the key factors influencing accountability among education stakeholders. This includes examining essential feedback loops, potential bottlenecks, and sources of incoherence across national, provincial, and local levels. Through in-depth research in this area, DARE-RC also hopes to develop a contextually relevant and usable diagnostic tool to monitor and assess accountability processes that may impact effective policy implementation.

**Policy relevance:** Research suggests positive outcomes linking accountability at the teacher, school, and systemic levels with performance and subsequent learning outcomes. Thus, there is a need to conduct research on what constitutes effective accountability in education in Pakistan's complex and varied setting. A growing desire among various key stakeholders, including government officials, to utilise the EMIS data for education system accountability call for further exploration within this sub-theme.

The DARE-RC research aims to generate critical evidence on accountability across multiple levels of service delivery, and its impact on pedagogical practices and learning outcomes in Pakistan.

> **Sub-Theme 4.2: Coherence of school monitoring and accountability systems**
>
> **Broad research question**

What are the key factors that influence the accountability of various education stakeholders in regard to monitoring and achieving access to, and quality and continuity of, education provision in public schools across Pakistan?

What are promising strategies and tools to improve monitoring and accountability systems, at school, district, provincial, and federal levels, to achieve quality learning experiences and improved student learning outcomes?

**Indicative sub-questions**

1. **(In)Coherence of school monitoring and accountability systems:**
- How do existing monitoring and accountability systems for teachers and school management operate to achieve access to, and quality and continuity of, education provision? Specifically:

    a. Who are the stakeholders involved in school monitoring data generation, management, and use within the school and teacher accountability systems at national, state/provincial, and local levels?

    b. What monitoring data are used for what accountability decisions, by whom?

    c. What are the goals, processes, incentives, resource arrangements, and capacities of these key stakeholders? How are they aligned/misaligned?

    d. What are the enablers and constraints for achieving coherence and effectiveness of accountability systems in regard to ensuring education access, quality, and continuity?

2. **Diagnostic tools and frameworks for building accountability systems:** Based on evidence on effective practices from Pakistan and other developing countries,
    a. How can accountability mechanisms (rewards/sanctions, support systems) at the federal, provincial, district, and school levels support/hinder teachers in achieving better learning outcomes for children in Pakistan?
    b. What are some of the important feedback loops that are responsive to local school-level needs?
    c. What diagnostic tools can be developed for monitoring/accountability systems in Pakistan at the national, provincial, and local levels?

## 4.3   Cross-cutting themes

### Cross-Cutting Theme I. Effective data use

Effective utilisation of data and information systems is essential for informed decision-making and policy formulation in Pakistan's diverse education landscape. Pakistan faces multifaceted challenges, including disparities in education access, quality, and equity across regions and demographic groups (Pakistan Institute of Education (PIE), 2022). In this complex environment, accurate and timely collected data can play a crucial role in identifying gaps, assessing progress, and allocating resources effectively.

The DARE-RC research under this cross-cutting theme recognises that the effective use of accurate and timely data can enhance coherence in education policy systems, build resilient and adaptive education systems that are prepared for climate-related and other crises, and inform evidence-based

data-based policy design and implementation. Across the priority research areas DARE-RC has identified, we anticipate and encourage research that actively utilises existing high-quality data and improves data systems and their usage for policy and programme design, implementation, monitoring, and continuous improvement, focused around the following cross-cutting research question:

**What works to ensure effective data use to improve educational system coherence, resilience, and policy implementation?**

Factoring in the work of the larger DARE Technical Assistance, research under this cross-cutting theme will focus on the utilisation of data and information systems in the education sector. In Pakistan, where challenges in educational quality persist, prioritising research on the effective use of assessment data is also crucial. Research will aim to produce evidence regarding the efficacy of existing data management systems to improve system governance and accountability in education service delivery, data quality in terms of relevance, and the system's ability to leverage data for policy formulation and implementation strategies. Specifically, research in this area will explore how the strategic utilisation of education data can drive improvements in the entire education system, including the inclusion of marginalised children, teaching quality, policy formulation, and accountability mechanisms, ultimately leading to better learning outcomes. This research agenda also recognises the importance of data-informed, inclusive, and comprehensive adaptation and mitigation strategies for ensuring continuity in education for all, especially when faced with disruptions to education.

**Data collection and use to support marginalised children's educational experiences.** In Pakistan, data are managed at the federal level by the National Educational Management Information System (NEMIS), while provinces use the EMIS platform to gather and report data. The quality of data collected by the four provinces varies based on the capacity of the provincial governments (Beg *et al.*, 2024). Another key contributor to Pakistan's education data landscape is the ASER, providing annual data on access, quality (specifically foundational learning), and inclusion. Pakistan also participates in the Trends in International Mathematics and Science Study (TIMSS), an international assessment that seeks to trace the learning of mathematics and science by school children. Various international and national monitoring programmes, such as UNICEF's MICS and PSLM also gather and provide data on education indicators, while studies like LEAPS and School TELLS in Punjab examine and generate evidence on education system management policy and implementation processes (Rawal et al. 2013; Beg *et al.*, 2024).

Despite the seeming wealth of available large-scale high-quality education data, the current data landscape in Pakistan is fragmented, as these data initiatives are designed and implemented by different stakeholders and for different purposes, without coordination across them so as to provide a comprehensive picture of the education system that enables the identification of gaps and effective and efficient monitoring of education provision for all. Assessments are conducted by diverse agencies at varying intervals with different sample sizes and significance levels, making it difficult to correlate them with student achievement. For instance, in Punjab, the absence of a cohesive learning assessment policy poses significant challenges in effectively gathering and leveraging data for policymaking and educational activities. This issue spans provincial and decentralised education authorities, hindering the translation of findings into actionable strategies. The utilisation of assessment data for enhancing teaching and learning remains ambiguous, raising questions about their interrelation.

In addition, these education-related datasets do not prioritise equity and inclusiveness, with limited measurement and focus on children marginalised due to their disability, religion, ethnicity, and other factors (Beg, 2024). Ensuring inclusivity and representation of marginalised children is essential for robust education systems that provide education access, quality, and continuity for all. While data initiatives like ASER, MICS, and EMIS collect information on some marginalised groups, including children with disabilities, current data lack representative sampling and effective progress monitoring, especially since many marginalised children are out of school (Beg, 2024). To address this gap, it is important to build an in-depth understanding of how the data on marginalised children are collected, managed, and used for monitoring, decision-making, and implementation, and to identify the enablers and constraints for a representative, equitable, coherent, and effective education data system.

**Assessment data for improved learning outcomes and improved policy and planning.** Thus far, Punjab is the only province that has made significant strides in digital monitoring, implementing flagship reform initiatives, collecting data on teacher performance via the COT, conducting tests of Grade 3 children through the literacy and numeracy drive (LND) to evaluate student attainment, and shifting the politically biased teacher transfer mechanism to e-transfers. The COT data, along with data on access, have been used primarily to report school performance. The utilisation of data to carry out analytics and provide feedback to improve teaching and learning at the classroom or even school level is the missing link for making this reform initiative a transformative one (Gulzar *et al*., 2023). These findings align with insights from the Research on Improving Systems of Education (RISE) study by Pritchett *et al*. (2022), which found that data collected by most of the education systems are limited to enrolment and inputs only, and a lot of progress is needed to harness information on student learning to inform policy and improve instruction. Recognising the role of assessments as diagnostic tools for system-wide improvement of educational outcomes, research under this cross-cutting theme will particularly focus on the use of assessment data to improve teachers' professional development, teaching and learning materials, and curriculum.

**Data- and evidence-driven decision-making.** There is also global recognition by education stakeholders that data and the use of education data systems are crucial for monitoring progress and for course correction purposes. For this reason, national governments and donor partners have directed increasing resources towards improving data systems. Global evidence suggests that open, timely, and accurate data are a critical requirement to support monitoring, accountability, and policy development in education. There is a particular need for reliable and effective data systems in South Asia, where inadequate data present a challenge to the education system. There is very limited, but positive, evidence from Pakistan that suggests that investing in improving data and data systems in the country has led to positive outcomes in the education sector. There is, however, no direct evidence linking the use of data and data systems to improvement in education outcomes in Pakistan. The strength of global and Pakistan evidence is weak, with more research required in this area, and in particular on its relationship with improving student outcomes.

Efforts to strengthen data systems in education in Pakistan are underway, albeit significant work is required to synthesise actionable research-based evidence (Farley-Ripple *et al*., 2023). Concurrently, educational reforms, supported by development partners, have been enacted in Pakistan over the past two decades that have focused on the professional development of in-service teachers in Punjab through various modalities (Sancar *et al*., 2021).

Effective use of assessment data requires building the capacity of educational stakeholders to collect, analyse, and interpret data effectively. Benchmarking assessment practices against international standards can also provide valuable insights for improving education systems. By prioritising research on assessment data utilisation, Pakistan can learn from best practices implemented in other countries and adapt strategies to suit its unique context, ultimately driving improvements in teaching quality and learning outcomes (OECD, 2019).

This cross-cutting theme holds significant relevance to both policy and practice within the educational landscape of Pakistan. It addresses a critical gap in the existing knowledge base regarding the use of data. In a country like Pakistan, where 39% of children are out of school and learning attainment indicators reflect acute learning poverty, establishing mechanisms to collect reliable and relevant data on access, quality, and inclusion is imperative. The existing issues of capacity in smaller provinces to collect data on teacher performance and student learning, along with misalignment in data utilisation for improving accountability in Punjab, warrant further research.

DARE-RC research under this theme, will focus on the utilisation of data and information systems in the education sector. It will aim to produce evidence regarding the efficacy of existing data management systems in education service delivery, data quality in terms of relevance, and the system's ability to leverage data for policy formulation and implementation strategies.

We will also conduct research on how data are collected and used, and how assessment data can be used for enhancing teaching quality and accountability mechanisms.

## Developing data-informed, inclusive, and comprehensive adaptation and mitigation strategies for continuity of education and learning for all.

Climate change and resulting environmental emergencies have caused significant loss, damage, and disruption to education systems in Pakistan. Climate and disaster risks arise from compounding and cascading hazards, leading to complex, interconnected adverse impacts on ecological and human systems. Factors like demographic trends, development disparities, poverty, and conflict further exacerbate exposure and vulnerability to climate-related hazards. Given the systemic nature of these risks (UNDDR, 2022), effective climate risk assessment and management require a comprehensive, systems-based approach that considers both direct and underlying drivers of risk.

'Climate-proofing' schools and education systems – integrating climate change adaptation and mitigation measures into infrastructure and planning – requires a robust data framework that systematically collects, manages, and applies data on local hazards, risks, and vulnerabilities. Such a framework would empower local schools and communities to make informed decisions and support the creation of actionable, data-driven mitigation and adaptation plans.

Given the complexity of climate risks and the diverse needs of Pakistani communities, there is an urgent need to identify scalable best practices for designing and supporting schools and communities in developing data-informed, inclusive, and comprehensive adaptation and mitigation strategies. These strategies must be tailored to local contexts, leveraging data on specific hazards, vulnerabilities, and needs to ensure that interventions are relevant and effective. Research should focus on defining what these best practices look like, how they can be implemented sustainably, and how data can be utilised to guide decision-making at the local level. This approach will enable schools and communities to

build resilience to climate impacts in a way that is both contextually appropriate and scalable across regions.

Overall, research on this cross-theme has the potential to offer policymakers evidence-based insights into the successes of and challenges for using data in the context of Pakistan, which can lead to improved teaching practices, supervision, monitoring, and mentoring, further facilitating decision-making and the effective utilisation of technology in educational governance.

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**Cross-Cutting Theme I: Effective data use**

What works to ensure the effective use of data to improve education system coherence, resilience, and policy implementation?

**Broad research question**

How are data on marginalised children, including girls, children with disabilities, and religious minority children, collected, managed, and used for education decision-making?

What policies, systems, and strategies on the use of assessment data drive improvements in teaching quality, policy, and accountability for better learning outcomes in Pakistan's education system?

What are existing school monitoring models and data utilisation practices in Pakistan's education system, and how can the optimisation of data utilisation enhance decision-making processes for improved student learning outcomes?

Do data exist in Pakistan to inform effective mitigation strategies for education continuity when faced with disruptions? How can data be best utilised to develop effective mitigation strategies?

**Indicative sub-questions**

1. **Data collection and use to support marginalised children's educational experiences:**
   - How are the data on marginalised children, including girls, children with SEND, and religious minority children, collected, managed, and used?
   - What are the enablers and constraints for collecting, managing, and using these data to improve access to, and quality and continuity of, education for marginalised children?
2. **Assessment data for improved learning outcomes and improved policy and planning**
   - How do school heads and teachers use assessment (formative and summative) data to monitor and improve teaching and learning at the right level?
   - How do school heads and teachers use assessment (formative and summative) data to monitor and improve learning outcomes in foundational literacy, numeracy, and science in schools in Pakistan?
   - What are the most critical gaps in assessment data in Pakistan?
   - How can large-scale assessment data be utilised to enhance policy and planning, system accountability, and communication with diverse stakeholders, including parents?
3. **Data- and evidence-driven decision-making:**
   - What works to improve the coherence of data systems across stakeholders to support marginalised children's education access, quality, and continuity?

- How can the utilisation of data from school monitoring models be optimised to improve decision-making processes at the school and district levels, ultimately leading to better student learning outcomes?
- What are the current school monitoring models working across Pakistan? What sort of data are being generated through these models and how are those data being managed and used for improved education service delivery in public schools?
- How can the utilisation of data from school monitoring models be optimised to improve decision-making processes at the school and district levels, ultimately leading to better student learning outcomes? What are the bottlenecks in the system for evidence and research uptake and where and at what levels of the system can we most effectively supply evidence?

4. **Developing data-informed, inclusive, and comprehensive adaptation and mitigation strategies for continuity of education and learning for all:**
   - What types of data exist in Pakistan that can support government mitigation strategies for education continuity?
   - What are promising data-use practices and strategies for data-informed disaster preparedness planning?
   - What do scalable, best practices look like in regard to designing, and supporting schools and communities to develop, data-informed, inclusive, and comprehensive adaptation and mitigation strategies that are tailored for local needs and contexts?
   - What are the best strategies for engaging local community, schools, and learners based on available data?
   - What data-use practices and strategies inform data-based adaptation and mitigation strategy design?
   - What ensures coherence and alignment between local, state, and national adaptation and mitigation plans?

## Cross-Cutting Theme II. Scalable solutions

Another overarching focus of DARE-RC research centres on the processes and critical factors involved in scaling up education reforms and interventions in Pakistan. Pakistan has a long history of reforms, educational development plans, and subsequent pilot projects. Yet the persistence of crises in education and the failure to achieve national and international commitments, even after eight five-year plans, as well as many education-related policy reforms since independence, warrants further deliberation and introspection (Aziz *et al.*, 2014; Bengali, 1999). Existing evidence on the scale-up of innovative programmes – such as learning coordinators, teaching kits, mosque schools, residences for female teachers, and the Nai Roshni Schools (New Light Schools) – highlights the importance of contextualisation, with an emphasis on adopting an approach that is responsive to larger institutional settings, instead of focusing on the fidelity of policies/blueprints. It also highlights the need to evaluate the problems and successes, as well as the feasibility and sustainability, of scaling up each innovation before making decisions on programme expansion or termination (Warwick *et al.*, 1991).

Given the need for, and current absence of, research on scale-up processes in Pakistan, DARE-RC research under this cross-cutting theme aims to generate new evidence around effective strategies for

scaling effective and innovative education initiatives in Pakistan. The specific research questions under this cross-cutting theme are organised around a broad question:

**What works to take promising programmes, strategies, and policies to scale within the educational landscape of Pakistan?**

**Scaling for breadth and scaling for depth.** Scaling generally denotes the transition from a small-scale initiative to one with a broader impact (Hartmann and Linn 2008; Holcombe, 2012; World Bank, 2005). This includes benefiting *more people* over *larger spatial counters* while ensuring equity and sustainability (IIRR, 2000). On the other hand, expanding or offering services for marginalised populations (e.g. out-of-school girls, children with disability) has typically been considered in the form of targeted, small-scale approaches that are tailored to specific needs, without much consideration of potential scale-up. However, given the sheer number and diversity of children who are marginalised within the education system in Pakistan, it is critical to consider scaling efforts that go beyond expanding beneficiary numbers and geographic coverage of policies, programmes, and strategies (scaling for 'breadth') and to explicitly address the 'depth' of scaling and scalability, i.e. to a degree that the policies, programmes, and strategies can penetrate systematic marginalisation that is deeply rooted within the system. As discussed in the research and methodological approaches above, the DARE-RC research agenda on scaling what works is interested in examining the strategies and processes involved in scaling up, both for breadth (i.e. increasing beneficiary numbers and geographical coverage) and depth (i.e. increasing the capacity to reach the most marginalised children and communities), while maintaining the fidelity and effectiveness of the interventions. It emphasises the importance of generating evidence to support not only expanding the reach of educational policies, programmes, and strategies, but also ensuring that scaled programmes continue to meet the needs of different populations, especially those who are marginalised, and remain responsive to varying conditions,

**Research approaches to scaling.** Research on Scaling the Impact of Innovations in Education (ROSIE) emphasises the need to identify champions of change in order to make scaling up a success (Olsen, 2021). Numerous education projects are implemented and evaluated at a small scale, which results in fragmented programming and a fragmented policy landscape and evidence base within countries. This current status quo fails to yield substantial impacts in addressing educational access, quality, continuity, and coherence at scale, that can be replicated and sustained (Hartmann and Linn, 2008).

A recent ROSIE brief (Basuel *et al.*, 2024) defines and calls for the need for two types of research regarding scaling. First, **research *for* scaling**, defined as collecting and analysing information to help make informed decisions about scaling a particular innovation, is done in support of a specific scaling *process.* This type of research includes ***proof-of-concept*** studies to demonstrate a particular innovation is useful and feasible; ***scalability assessments***, evaluating the feasibility and relevance of the innovation in a particular context and refining and adapting the innovation to the realities of the context and scale-up conditions; and ***change management,*** analysing how to encourage people, processes, and systems to adopt the innovation in ways that transform current practices in sustained manner (Cooley and Haward, 2019). The second type of research regarding scaling is **research *about* scaling.** This type of research seeks to enhance our meta-understanding of the scaling processes itself, not about a particular innovation. It involves collecting and using information to understand the broader

contours of scaling and 'what works' in a general process of implementing and embedding a promising innovation in a location for sustained impact.

For DARE-RC, given the urgent need for research on and the implementation of promising initiatives and interventions at scale, we prioritise and invite **research *for* scaling,** especially studies on scalability assessments and change management for promising policies, interventions, and strategies that have the potential for substantial and sustained impact on transforming education systems of Pakistan. These two areas of scaling research are, thus far, scarce, despite their potential impact on guiding successful implementation and sustainability of promising innovations (Basuel *et al.*, 2024). The cumulated data and information from the research *for* scaling process systematically gathered by DARE-RC can then be synthesised and translated into research *on* scaling, contributing to much-needed global knowledge on critical determinants of successful (or unsuccessful) scale-up of promising innovations.

Specifically, for **scalability assessments**, DARE-RC's research agenda is interested in identifying promising policies, programmes, and strategies that have potential to be scaled up, and assessing the feasibility of, and building stakeholder consensus around, the scaling-up process. The process of decision-making regarding scaling up interventions hinges upon many factors that can determine the success of scale-up implementation: for example, their potential impact, sustainability, contextual alignment, policy relevance, beneficiary acceptance, practicality, operational and financial feasibility, evidence of impact, and political will (Anandajayasekeram, 2016; Linn and Kohl, 2021). Prior to making high-stakes decisions on scale-up of a particular innovation, it is critical to comprehensively assess these factors, both in regard to the promising innovation itself, for its impact, feasibility at scale, and cost effectiveness, but also in regard to the context, including the needs and conditions of the specific context and population in which it is to be scaled up, with marginalised child populations and communities in mind. In addition, it is also critical to consider stakeholder readiness and acceptance, as well as coherence with the existing operational and political contexts of implementation and operation within the local and policy systems. Supporting and systematically examining the conditions for success for scale-up, as well as the process of engaging and building consensus with main stakeholders at both local (e.g. teachers, students, parents, communities) and policy systems level (district/state policymakers, federal stakeholders, etc.), are of interest in DARE-RC's research.

Another key area of interest is research that systematically evaluates and examines the process of **refining and adapting the innovation** for scale-up, and for the specific needs and conditions of the context in which it is to be implemented, especially in regard to those subjected to systematic marginalisation. Promising policy initiatives, interventions, and strategies that may have been successful at a small scale in a specific context may not be cost effective, efficient, relevant, or acceptable at scale and in other contexts. Refining and adapting the innovation for scale is a critical step for successful scale-up. This may include identifying core components that are critical to ensuring its impacts are felt: for example, identifying simple, low-cost, low-burden 'kernels' of practice and re-designing or revising programmes around these kernels (Embry, 2004; Jones *et al.*, 2017); exploring optimal dosage and implementation strategies or different combinations of intervention/policy components that allow for better management of resources while ensuring impacts (e.g. Angrist and Meager, 2023; Colins *et al.*, 2011); and modifying and adapting contents or delivery mechanisms to reflect the priorities and improve the cultural/contextual fit of the innovation to the broader context (e.g. Baily *et al.*, 2021), while maintaining the core components of the innovation and ensuring fidelity

across the contexts in which it is being implemented. In these adaptation processes, special consideration should be given to marginalised populations and communities to ensure equity in the scaling up (Mangham and Hanson, 2010). For example, different programme delivery modalities, additional provision of necessary services, contents, and dosages to facilitate participation of, and enhance impacts among, marginalised populations. While these additional efforts may increase the overall cost of the scale-up implementation, the additional resource input needs should be weighed carefully against the greater needs of, and potential impacts for, serving hard-to-reach marginalised populations. It is also important to proactively identify potential enablers and hindrances that can affect education access and quality, and continuity of implementation of, the scaled-up innovation at both local and policy systems levels, and account for these in the scale-up strategies and operations.

Lastly, research on **change management,** analysing how to encourage people, processes, and systems to adopt the innovation in ways that transform current practices and institutions and sustain it (Basuel *et al.*, 2024), will offer key information that is necessary to ensure successful scale-up and sustainability of innovative education policy and programming in Pakistan. Identifying key support mechanisms and strategies for transforming the local and policy education systems to take ownership of, institutionalise, and sustain the educational innovations system-wide, is important in order to gain in-depth understanding of the scale-up process. Understanding the coherence/incoherence of systems operations around resource allocation, norms, incentives, data, and accountability mechanisms involved in scale-up, and how these scale-up process operations include or exclude marginalised children and communities, are of great interest in the DARE-RC agenda.

Across the priority areas the DARE-RC research agenda identifies, we propose and invite research on scalability assessment and change management on the scale-up processes of promising education policy initiatives, programmes, and strategies related to the following:

- improving drivers of learning and holistic outcomes for marginalised children;
- supporting teacher and school capacities, regarding pedagogical strategies in multi-grate/multilingual contexts, teacher management and professional development policies, teacher well-being, and school leadership support;
- ensuring teaching and learning continuity and systems resilience when faced with disruptive events; and
- ensuring education systems accountability evidence and research uptake, and effective operations and use of data, and monitoring systems.

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**Cross-Cutting Theme 2: Scalable solutions**

What works to take promising programmes, strategies, and policies to scale within the educational landscape of Pakistan?

**Research questions**

**For promising programmes, strategies, and policies that:**

- improve drivers of learning and holistic outcomes for marginalised children;

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- support teacher and school capacities, regarding pedagogical strategies in multi-grate/multilingual contexts, teacher management and professional development policies, teacher well-being, and school leadership support;

- ensure teaching and learning continuity and systems resilience when faced with disruptive events; and

- ensure education systems accountability evidence and research uptake, and effective operations and use of data, and monitoring systems

  o What is the evidence of their acceptability/feasibility in the broader Pakistan context, and what is the evidence of the cost effectiveness and sustainability of these programmes, strategies, and policies?

  o What are the **enablers and hindrances** in regard to taking these promising programmes, strategies, and policies to scale within the educational landscape of Pakistan?

  o What are **strategies to ensure and enhance the cost effectiveness** of these promising programmes, strategies, and policies when implemented at scale, with different populations and in different contexts?

  o How can support mechanisms (institutionalisation, resource allocation, political will, champions of change) be streamlined to ensure sustained impact?

# 5  Conclusion

The DARE-RC research agenda underscores the critical need for research in the four prioritised areas and the two cross-cutting themes identified through evidence gap analysis, wider stakeholder consultations, and an assessment of policy relevance. By refining and prioritising these themes within the conceptual framework's focus on the drivers of learning, the research agenda sets a road map for researchers seeking to generate actionable and high-quality evidence on policies and programmes to improve educational access, quality, continuity, and coherence in Pakistan.

It is envisaged that the high-quality research under DARE-RC will generate a comprehensive body of knowledge that can guide meaningful and positive change in the learning environments for all children in Pakistan, including those who are subjected to systematic marginalisation due to their gender, disability, location, ethnicity, religion, and/or socio-economic status. Leveraging the high-quality evidence and evidence synthesis DARE-RC will generate, we aim to provide actionable recommendations and consultations for stakeholders at both local and policy levels, through inclusive and sustained stakeholder engagement and policy briefs designed to translate research evidence into pragmatic insights. These engagements and communication efforts will equip policymakers and stakeholders with practical knowledge to champaign system-wide transformation of education policy and programme landscape to address the issues of equitable access to education, quality educational experience, and improved learning outcomes for all children in in Pakistan. In addition, research collaboration among researchers within and outside the country in DARE-RC research projects will strengthen national capabilities for sustained uptake of high-quality policy-relevant research in Pakistan. Sustained efforts for quality research by DARE-RC and other similar efforts will serve as a robust foundation for developing and strengthening the appetite for quality evidence among policymakers, leading to informed educational decision-making for improved education service delivery in Pakistan.

# Bibliography

18th Amendment 2010 (19 April 2010) *Pakistan constitution law.* Retrieved from Pakistan Constitutional law: https://www.na.gov.pk/uploads/documents/report_constitutional_18th_amend_bill2010_020410_.pdf.

Aber, J. L., Dolan, C. T., Kim, H. Y., and Brown, L. (2021) 'Children's learning and development in conflict- and crisis-affected countries: Building a science for action', *Development and psychopathology* 33(2), pp. 506–521.

Adukia, A. (2017) 'Sanitation and education', *American Economic Journal: Applied Economics* 9(2), pp. 23–59.

Afteb, M. (2019) 'Decentralization and the provision of public services: A Case study of Khyber Pakhtunkhwa, Pakistan'. (Thesis). University of Connecticut.

Agarwal, S., Kayina, A., Mukhopadhyay, A., and Reddy, A. N. (2018) 'Redistributing teachers using local transfers', *World Development* 110, pp. 333–344.

Akmal, M., Hares, S., and O'Donnell, M. (2020). 'Gendered impacts of COVID-19 school closures: Insights from frontline organizations', Center for Global Development: Washington, DC, USA.

Alexander, J. (2011) 'Education cluster in Pakistan, lessons learned: Flood response', Islamabad: Global Education Cluster.

Allen, N., Grigsby, B., and Peters, M. L. (2015) 'Does leadership matter? Examining the relationship among transformational leadership, school climate, and student achievement', *International Journal of Educational Leadership Preparation* 10(2), pp. 1–22.

Alur, M., and Timmons, V. (2009) *Challenging the Barriers: Inclusive Education in India and the United States,* Sage Publications, New Delhi.

Amin, S., and Suran, L. (2005) 'Program efforts to delay marriage through improved opportunities: Some evidence from rural Bangladesh', Population Council, New York.

Anandajayasekeram, P. (2016) 'Scaling up and scalability: Concepts, frameworks and assessment' (Vuna Research Report), Vuna, Pretoria.

Andrabi, T., Daniels, B., and Jishnu, D. (2020) 'Human capital accumulation and disasters: Evidence from the Pakistan earthquake of 2005' (RISE Working Paper Series. 20/039).

Andrabi, T., Das, J., Khwaja, A. I., Vishwanath, T., and Zajonc, T. (2007). 'Learning and educational achievements in Punjab schools (LEAPS): Insights to inform the education policy debate', World Bank, Washington, DC.

Androniceanu, A., and Ristea, B. (2014) 'Decision making process in the decentralized educational system', *Procedia-Social and Behavioral Sciences* 149, pp. 37–42.

Angrist, N., and Meager, R. (2023) 'Implementation matters: Generalizing treatment effects in education', Blavatnik School of Government, University of Oxford.

Ansari, A. H. (2023) 'Evaluating Public–Private Partnership Schools in Punjab, Pakistan'. (Working Paper). Columbia University.

Arain, M. A., and Fakir, R. (2023) 'Decentralization in Education System: Outcomes and Challenges', *Journal of Development and Social Sciences* 4(1), pp. 273–279.

Arakelyan, S., and Ager, A. (2021) 'Annual research review: A multilevel bioecological analysis of factors influencing the mental health and psychosocial well-being of refugee children', *Journal of Child Psychology and Psychiatry* 62(5), pp. 484–509.

Asad, S., Habib, M., Karachiwalla, N., Kosec, K., Leaver, C., and Rehman, A. U. (2020). 'Reforming educator accountability systems: Evidence from Pakistan' (Policy Brief. 37404). International Growth Center.

ASER Pakistan. (2021) 'Annual status of education report: ASER-Pakistan 2021', ASER Pakistan Secretariat and Idara-e-Taleem-o-Aagahi.

ASER Pakistan. (2022) 'Annual status of education report: ASER-Pakistan 2022', ASER Pakistan Secretariat, Idara-e-Taleem-o-Aagahi

ASER Pakistan. (2023) 'Annual status of education report: ASER-Pakistan 2023' ASER Pakistan Secretariat, Idara-e-Taleem-o-Aagahi.

Aslam, M., Malik, R., Rawal, S., Rose, P., and Vignoles, A. (2019) 'Do government schools improve learning for poor students? Evidence from rural Pakistan', *Oxford Review of Education* 45(6), pp. 802–824.

Aslam, M., and Rawal, S. (2023) 'The climate crisis: Education is critical for building resilience to vulnerabilities', *Annual status of education report: ASER Pakistan 2023*. ASER Pakistan Secretariat, Idara-e-Taleem-o-Agahi.

Aslam, M., Rawal, S., and Saeed, S. (2017) Public Private Partnerships in Education in Developing Countries: A Rigorous Review of the Evidence, Ark Education Partnerships Group.

Aziz, M., Bloom, D. E., Humair, S., Jimenez, E., Rosenberg, L., and Sathar, Z. (2014). 'Education system reform in Pakistan: why, when, and how?' (IZA policy paper No. 76).

Banerjee, A., Andrab, T., Banerji, R., Dynarski, S., Glennerster, R., Grantham-McGregor, S., Muralidharan, K., Piper, B., Chanduvi, J. S., and Yoshikawa, H. (2023) 'Cost-effective approaches to improve global learning – What does recent evidence tell us are smart buys for improving learning in low-and middle-income countries?', World Bank Group.

Bari, F. (26 November 2023). Evidence Gap Map: 'An analytical overview of the education system and service delivery in Pakistan' [Unpublished manuscript].

Bari, F., Choudhary, N., Khan, A., and Tariq, M. (2018) 'Promoting inclusive education in Pakistan: Learning from global experience', Idara-e-Taleem-o-Aagahi, Karachi, Pakistan.

Bari, F., Raza, R., Khan, B. H., Aslam, M., and Maqsood, N. (2015), 'An investigation into teacher recruitment and retention in Punjab', Institute of Development and Economic Alternatives (IDEAS).

Bari, F., Zulfiqar, R., Richards and Farid, S. (2019) 'Evaluation study on Punjab Education Endowment Fund', Evaluation of the Punjab Education Sector Programme (PESP 2). E-Pact.

Barón, J. D., Bend, M., Roseo, E., and Farrakh, I. (2022) 'Floods in Pakistan: Human development at risk', World Bank, Washington, DC.

Barrera-Osorio, F., Blakeslee, D.S., Hoover, M., Linden, L., Raju, D. and Ryan, S.P. (2022). Delivering education to the underserved through a public-private partnership program in Pakistan. *Review of Economics and Statistics*, 104(3), pp.399-416.

Barrera-Osorio, F., Galbert, P. D., Habyarimana, J., and Sabarwal, S. (2020) 'The impact of public–private partnerships on private school performance: Evidence from a randomized controlled trial in Uganda', *Economic Development and Cultural Change* 68(2), pp. 429–469.

Barrera-Osorio, F., and Raju, D. (2017) 'Teacher performance pay: Experimental evidence from Pakistan', *Journal of Public Economics* 148, pp. 75–91.

Basuel, N., Carter-Rau, R., Curtiss Wyss, M., Elliot, M., Olsen, B., Olson, T. and Rodriguez, M. (2024) 'The role of research for and about scaling education innovations: ROSIE thematic reflection brief', Center for Universal Education at Brookings, Brookings Institution.

Bau, N., and Das, J. (2020) 'Teacher value added in a low-income country', *American Economic Journal: Economic Policy* 12(1), pp. 62–96.

Beames, J. R., Spanos, S., Roberts, A., McGillivray, L., Li, S. P., Newby, J. M., and O'Dea, B. (2023) 'Intervention programs targeting the mental health, professional burnout, and/or wellbeing of school teachers: Systematic review and meta-analyses', *Educational Psychology Review* 35(1), p. 26.

Beg, S., Habib, M., and Irfan, A. (2024) 'Data availability for improved education accountability systems in Pakistan' [Unpublished manuscript].

Bengali, K. (1999) 'History of educational policy-making and planning in Pakistan' (Working Paper Series # 40). Sustainable Development Policy Institute (SDPI).

BESP (2020), 'Balochistan Education Sector Plan 2020–2025', Secondary Education Department, Government of Balochistan.

Bhai, M., and Horoi, I. (2019) 'Teacher characteristics and academic achievement' *Applied Economics* 51(44), pp. 4781–4799.

Bhutta, S. M., and Rizvi, N. F. (2022) 'Assessing teachers' pedagogical practices and students' learning outcomes in science and mathematics across primary and secondary school level: A nationwide study (2018–21)', Aga Khan University, Institute for Educational Development, Karachi, Pakistan.

Blase, J., and Blase, J. (1999) 'Principals' instructional leadership and teacher development: Teachers' perspectives', *Educational Administration Quarterly* 35(3), pp. 349–378.

Blatchford, P., and Russell, A. (2021) Rethinking Class Size: The Complex Story of Impact on Teaching and Learning (p. 328), UCL Press, London.

Borkum, E., He, F., and Linden, L.L. (2012) 'The effects of school libraries on language skills: Evidence from a randomized controlled trial in India' (No. w18183). National Bureau of Economic Research.

Brinkerhoff, D. W., Watson, D., and Khan, A. Q. (2010) 'Capacity development for education service delivery in Pakistan: Top-down devolution', *Public Administration & Development* 30(1), pp. 11–26.

Bronfenbrenner, U., and Morris, P. A. (2007) 'The bioecological model of human development', in *Handbook of Child Psychology: Theoretical Models of Human Development* (Vol. 1, p. 793). Wiley Online Library.

Bruggencate, G., Luyten, H., Scheerens, J., and Sleegers, P. (2012) 'Modeling the influence of school leaders on student achievement: How can school leaders make a difference?', *Educational Administration Quarterly* 48(4), pp. 699–732.

Burde, D., and Linden, L. L. (2013) 'Bringing education to Afghan girls: A randomised controlled trial of village-based schools', *American Economic Journal: Applied Economics* 5(3), pp. 27–40.

Burde, D., Kapit, A., Wahl, R. L., Guven, O., and Skarpeteig, M. I. (2017) 'Education in emergencies: A review of theory and research', *Review of Educational Research* 87(3), pp. 619–658.

Bureau of Statistics, Planning & Development Board, Government of Sindh. (2021) 'Sindh Multiple Indicator Cluster Survey 2018–19: Survey Findings Report', Karachi, Pakistan: Bureau of Statistics, Planning & Development Board, Government of Sindh.

Bureau of Statistics, Planning & Development Department, Government of Khyber Pakhtunkhwa. (2021) 'Khyber Pakhtunkhwa Multiple Indicator Cluster Survey 2019: Survey Findings Report', Peshawar, Pakistan: Bureau of Statistics, Planning & Development Department, Government of Khyber Pakhtunkhwa.

Busemeyer, M. R. (April 2012); 'Two decades of decentralization in education governance: Lessons learned and future outlook for local stakeholders', in a presentation delivered at an OECD conference, on 'Effective local governance in education'.

Busemeyer, M. R. (April 2012) 'Two decades of decentralization in education governance: Lessons learned and future outlook for local stakeholders', in a Presentation delivered at an OECD conference on 'Effective local governance in education'.

Bush, T. (2011) Theories of Educational Leadership and Management. Sage Publications: London.

Cairns, D. (2019) 'Investigating the relationship between instructional practices and science achievement in an inquiry-based learning environment', *International Journal of science education* 41(15), pp. 2113–2135.

Caleon, I. S., Ilham, N. Q. B., Ong, C. L., and Tan, J. P. L. (2019) 'Cascading effects of gratitude: A sequential mediation analysis of gratitude, interpersonal relationships, school resilience and school well-being', *The Asia-Pacific Education Researcher* 28, pp. 303–312.

Callen, M., Gulzar, S., Hasanain, A., Khan, M. Y., and Rezaee, A. (2023) 'The political economy of public sector absence', *Journal of Public Economics* 218, Article 104787.

Calo, M., Peiris, C., Chipchase, L., Blackstock, F., and Judd, B. (2019) 'Grit, resilience, and mindset in health students', *The Clinical Teacher* 16(4), pp. 317–322.

Calvert, L. (2016) 'Moving from compliance to agency: What teachers need to make professional learning work', Oxford, OH: Learning Forward and NCTAF.

Carneiro, P., Das, J., and Reis, H. (2024) 'The value of private schools: Evidence from Pakistan', *Review of Economics and Statistics* 106(5), pp. 1301–1318.

Chaudhry, A. G., and Parveen, A. (2018) 'Girls' education in Pakistan: An analysis of socio-cultural and economic factors', *International Journal of Social Economics* 45(9), pp. 1322–1334.

Cheema, I., Farhat, M., Hunt, S., Javeed, S., Pellerano, L., and O'Leary, S. (2014) 'Benazir Income Support Programme: First follow-up impact evaluation report', Oxford Policy Management. Oxford.

Cheema, A., Khwaja, A. I., and Qadir, A. (2006) 'Local government reforms in Pakistan: Context, content, and causes', in P. Bardhan and D. Mookherjee (Eds.), *Decentralization and Local Governance in Developing Countries: A Comparative Perspective* (pp. 167–178), The MIT Press.

Cheema, A., and Mohmand, S. (2007) 'Decentralisation and inequality in Pakistan: Bridging the gap that divides', in M. A. Saqib (Ed.), *Devolution and Governance: Reforms in Pakistan* (pp. 167–178). Oxford University Press, Karachi.

Child Rights Resource Centre (2021) 'COVID's Educational Time Bomb: Out of school children global snapshot'. Save the Children International (online)

Chin, A. (2005) 'Can redistributing teachers across schools raise educational attainment? Evidence from operation blackboard in India', *Journal of Development Economics* 78(2), pp. 384–405.

Chuang, E., Pinchoff, J., and Psaki, S. (2018) 'How natural disasters undermine schooling'. (Commentary). Brookings [online].

Cicchetti, D., and Aber, J. L. (1998) 'Contextualism and developmental psychopathology', *Development and Psychopathology* 10(2), pp. 137–141.

Cipriano, C., Strambler, M. J., Naples, L. H., Ha, C., Kirk, M., Wood, M., Sehgal, K., Zieher, A. K., Eveleigh, A., McCarthy, M., Funaro, M., Ponnock, A., Chow, J. C., and Durlak, J. (2023) 'The state of evidence for social and emotional learning: A contemporary meta-analysis of universal school-based SEL interventions', *Child Development* 94(5), pp. 1181–1204.

Collins, L. M., Baker, T. B., Mermelstein, R. J., Piper, M. E., Jorenby, D. E., Smith, S. S., Christiansen, B. A., Schlam, T. R., Cook, J. W., and Fiore, M. C. (2011) 'The multiphase optimization strategy for engineering effective tobacco use interventions', *Annals of Behavioral Medicine* 41(2), pp. 208–226.

Colquhoun, H., Griffiths, S., Atherton, P., Mackintosh, A., Tangpornpaiboon, S., Valdes Aspillaga, N., Ramirez, A. P., Zubairi, A., Allroggen, H., and Cathro, L. (2024) 'Independent evaluation of the Girls' Education Challenge Phase II: Value for money of educating the most marginalised girls through the GEC', Tetra Tech International Development. (online)

Cooley, L., and Howard, J. (2019) *Scale Up Sourcebook,* Purdue University.

Cooley, L., and Linn, J. F. (2014) 'Taking innovations to scale: Methods, applications and lessons', Results for Development Institute (R4D). Management Systems International (MSI).

Creemers, B. P., and Kyriakides, L. (2008) The Dynamics of Educational Effectiveness: A Contribution to Policy, Practice and Theory in Contemporary Schools, Routledge. London.

Cuartas, J., McCoy, D. C., Torres, I., Burghardt, L., Shonkoff, J. P., and Yoshikawa, H. (2024) 'The developmental consequences of early exposure to climate change-related risks', *Child Development Perspectives* 18(3), pp. 145–154.

Cummings, E. M., Merrilees, C. E., Taylor, L. K., and Mondi, C. F. (2017) 'Developmental and social– ecological perspectives on children, political violence, and armed conflict', *Development and Psychopathology* 29(1), pp. 1–10.

Dahlin, L., and Barón, J. D. (2023) 'Children and their families six months after Pakistan's floods', World Bank, Washington, D.C.

Darling-Hammond, L., Hyler, M. E., and Gardner, M. (2017), 'Effective teacher professional development', Palo Alto, CA: Learning Policy Institute.

Day, C., Sammons, P., Hopkins, D., Harris, A., Leithwood, K., Gu, Q., and Brown, E. (2009) 'The impact of school leadership on pupil outcomes: Final report. London, England: UK Department for Children, Schools and Families Research.

De Ree, J., Muralidharan, K., Pradhan, M., and Rogers, H. (2018) 'Double for nothing? Experimental evidence on an unconditional teacher salary increase in Indonesia', *The Quarterly Journal of Economics* 133(2), pp. 993–1039.

De Souza, A., Samuel, M., and Atkins, L. (2019) 'Understanding barriers to inclusive education for children with disabilities in low-income countries: The case of children with visual impairments in the Masindi district of Uganda', *International Journal of Inclusive Education* 23(3), pp. 257–272.

De Talance, M. (2017) 'Better teachers, better results? Evidence from rural Pakistan', *The Journal of Development Studies* 53(10), pp. 1697–1713.

Dryden-Peterson, S. (2016) 'Policies for education in conflict and post-conflict reconstruction', in K. Mundy, A. Green, B. Lingard, and A. Verger (Eds.), *Education in Conflict and Post-Conflict Reconstruction* (pp. 189–205). John Wiley & Sons, Ltd. (online)

Duflo, E., Dupas, P., and Kremer, M. (2012) 'School Governance, teacher incentives, and pupil–teacher ratios: Experimental evidence from Kenyan primary schools', *Journal of Public Economics* 123, pp. 92–110.

Duflo, E., Hanna, R., and Ryan, S. P. (2012) 'Incentives work: Getting teachers to come to school', *American Economic Review* 102(4), pp. 1241–1278.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., and Schellinger, K. B. (2011) 'The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions', *Child Development* 82(1), pp. 405–432.

Earley, P. and Weindling, D. (2004) *Understanding School Leadership*, SAGE Publications. London.

Ebbeler, J., Poortman, C. L., Schildkamp, K., and Pieters, J. M. (2016) 'Effects of a data use intervention on educators' use of knowledge and skills', *Studies in Educational Evaluation* 48, pp. 19–31.

Eckstein, D., Künzel, V., and Schäfer, L. (2021). *The global climate risk index 2021*, Germanwatch, Bonn, Germany.

Embry, D. D. (2004) 'Community-based prevention using simple, low-cost, evidence-based kernels and behavior vaccines', *Journal of Community Psychology* 32(5), pp. 575–591.

Emezue, C., Pozneanscaia, C., Sheaf, G., Groppo, V., Bakrania, S., and Kaplan, J. (2022) 'The impact of educational policies and programmes on child work and child labour in low- and middle-income countries: A rapid evidence assessment', UNICEF Office of Research – Innocenti.

Ersado, L., Hasan, A., Geven, K. M., Kathuria, A. K., Baron, J., Bend, M., and Ahmed, S. (2023) 'Pakistan – Human capital review: Building capabilities throughout life', World Bank Group.

Estrada, R. (2019) 'Rules versus discretion in public service: Teacher hiring in Mexico', *Journal of Labor Economics* 37(2), pp. 545–579.

Falk, D., Varni, E., Johna, J. F., and Frisoli, P. (2019) 'Landscape review: Teacher well-being in low resource, crisis, and conflict-affected settings', Education Equity Research Initiative. (online)

Farley-Ripple, E., MacGregor, S., and Mazal, M. (2023), 'Knowledge mobilization in the production of education research: a mixed methods study', Centre for Research Use in Education: . Newark, DE.

FCDO (8 December 2022), 'Addressing the climate, environment, and biodiversity crises in and through girls' education', Foreign, Commonwealth and Development Office.

Fraser, N. (2008) 'Social justice in the age of identity politics: Redistribution, recognition, and participation' in G. Henderson and M. Waterstone (Eds.), *Geographic Thought: A Praxis Perspective* (pp. 72–89), Routledge: London.

Freeman, M. C., Greene, L. E., Dreibelbis, R., Saboori, S., Muga, R., Brumback, B., and Rheingans, R. (2012) 'Assessing the impact of a school-based water treatment, hygiene and sanitation programme on pupil absence in Nyanza Province, Kenya: A cluster-randomised trial', *Tropical Medicine & International Health* 17(3), pp. 380–391.

Fullan, M. (2014) The Principal: Three Keys to Maximizing Impact. Wiley: San Francisco, CA..

GADRRRES (2022) 'Comprehensive school safety framework 2022 – 2030 for child rights and resilience in the education sector', Global Alliance for Disaster Reduction and Resilience in the Education Sector.

Geven, K., and Hasan, A. (2020) 'Learning losses in Pakistan due to COVID-19 school closures: A technical note on simulation results', The World Bank Group.

Ghouri, A. M., Abrar, N., and Baloch, A. (2010) 'Attitude of secondary schools' principles & teachers toward inclusive education: Evidence from Karachi, Pakistan', *European Journal of Social Sciences* 15(4), pp. 573–582.

Girls Education Challenge (GEC) (2022) 'Access and learning during Covid-19', Tetra Tech International Development: Brighton, UK.

Girls Education Challenge (GEC). (2022) 'Learning brief: Pakistan', Foreign, Commonwealth and Development Office.

Glennerster, R., Kremer, M., Mbiti, I. M., and Takavarasha, K. (2011) 'Access and quality in the Kenyan education system: A review of the progress, challenges, and potential solutions', prepared for the Office of the Prime Minister of Kenya.

Glewwe, P., and Muralidharan, K. (2015) 'Improving school education outcomes in developing countries' (RISE Working Paper Series No. 15/001).

Glewwe, P. W., Hanushek, E. A., Humpage, S. D., and Ravina, R. (2014) 'School resources and educational outcomes in developing countries: A review of the literature from 1990 to 2010' in G. Paul (Ed.), *Education Policy in Developing Countries* (pp. 218–252), University of Chicago Press: Chicago.

Government of Pakistan, Asian Development Bank, European Union, United Nations Development Programme, and World Bank. (28 October 2022), 'Pakistan floods 2022: Post-disaster needs assessment', United Nations Development Programme.

Government of Pakistan (2017), 'Pakistan Climate Change Act, 2017'.

Government of Pakistan. (29 December 2022), 'Pakistan floods 2022: Resilient recovery, rehabilitation, and reconstruction framework (4RF)', United Nations Development Programme.

Graham, L., and Slee, R. (2008) 'An illusory interiority: Interrogating the discourse/s of inclusive education', *Educational Philosophy and Theory* 40(2), pp. 277–293.

Gulzar, S., Ladino, J. F., Mehmood, M. Z., and Rogger, D. (2023) 'Command and can't control: An evaluation of centralized accountability in the public sector', DeliverEd Initiative Working Paper.

Habib, M. (2010) 'The impact of 2002 National Teacher Contract Policy reform on teacher absenteeism in Lahore, Pakistan' [Doctoral dissertation, The George Washington University].

Habib, M. (2015) 'Teacher and school administrator incentives for improved education delivery in Khyber Pakhtunkhwa Province, Pakistan', Consortium for Development Policy Research.

Halai, A., and Durrani, N. (2017) 'Teachers as agents of peace? Exploring teacher agency in social cohesion in Pakistan', *Compare: A Journal of Comparative and International Education* 48(4), pp. 535–552.

Hallfors, D., Cho, H., Rusakaniko, S., Iritani, B., Mapfumo, J., and Halpern, C. (2011). 'Supporting adolescent orphan girls to stay in school as HIV risk prevention: evidence from a randomised controlled trial in Zimbabwe', *American Journal Of Public Health* 101(6), pp. 1082–1088.

Hallinger, P. and Heck, R.H. (1996a) 'Reassessing the principal's role in school effectiveness: A review of empirical research, 1980–1995', *Educational Administration Quarterly* 32(1), pp. 5–44.

Hallinger, P., and Heck, R. H. (1996b) 'The principal's role in school effectiveness: An assessment of methodological progress, 1980–1995' in K. Leithwood, J. Chapman, P. Corson, P. Hallinger, and A.

Hart (Eds.), *International Handbook of Research in Educational Leadership and Administration* (pp. 723–783), Kluwer Academic Publishers: Dordrecht, Netherlands.

Hallinger, P. and Heck, R. H. (1998) 'Exploring the principals' contribution to school effectiveness: 1980–1995', *School Effectiveness and School Improvement* 9(2), pp. 157–191.

Hallman, K., and Roca, E. (2011) 'Siyakha Nentsha: Building economic, health, and social capabilities among highly vulnerable adolescents in KwaZulu-Natal, South Africa', Population Council.

Hameed, A., and Manzoor, A. (2019) 'Defeating inequalities in school access: A case of children with disabilities in Pakistan', *Journal of Research in Special Educational Needs* 16, pp. 345–350.

Hamilton, A., and Hattie, J. (2022) The Lean Education Manifesto: A Synthesis of 900+ Systematic Reviews for Visible Learning in Developing Countries, Routledge: London.

Hanif, M., and Zubair, A. (2018) 'Governance and management issues of education system in Pakistan: A way forward', *Journal of Research & Reflections in Education* 12(1), pp. 47–58.

Hanushek, E. A., Kain, J. F., and Rivkin, S. G. (2019) 'Understanding and improving teacher effectiveness: The relevance of research', *Journal of Policy Analysis and Management* 38(1), pp. 260–279.

Hanushek, E. A., and Woessmann, L. (2020) 'The economic impacts of learning losses', Organisation for Economic Co-operation and Development (OECD).

Hardman, F., Ackers, J., Abrishamian, N., and O'Sullivan, M. (2011) 'Developing a systemic approach to teacher education in Sub-Saharan Africa: Emerging lessons from Kenya, Tanzania and Uganda', *Compare: A Journal of Comparative and International Education* 41(5), pp. 669–683.

Harris, D. N., and Sass, T. R. (2008) 'Teacher training, teacher quality and student achievement', National Center for the Analysis of Longitudinal Data in Education Research (CALDER).

Harris, L. R., and Brown, G. T. (2013) 'Opportunities and obstacles to consider when using peer-and self-assessment to improve student learning: Case studies into teachers' implementation', *Teaching and Teacher Education* 36, pp. 101–111.

Hartmann, A., and Linn, J.F. (2008) 'Scaling Up: A framework and lessons for development effectiveness from literature and practice', (Working Paper 5). Wolfensohn Center for Development, Brookings Institute.

Hess, F. M., and Petrilli, M. J. (2007) *No Child Left Behind: Primer*, Peter Lang International Academic Publishers.

Hickey, S., and Hossain, N. (2019) Politics of Education in Developing Countries: From Schooling to Learning (p. 256). Oxford University Press, Oxford.

Hoglund, W. L. G., Klingle, K. E., and Hosan, N. E. (2015) 'Classroom risks and *resources*: Teacher burnout, classroom quality and children's adjustment in high needs elementary schools', *Journal of School Psychology* 53(5), pp. 337–357.

Holcombe, S. (2012) 'Lessons from practice: assessing scalability agriculture and rural development', The World Bank.

IDDC (2023) 'Towards COP28: Key advocacy message to include persons with disabilities', International Disability and Development Consortium.

INEE (2021) 'A guidance note for teacher wellbeing in emergency settings', The Inter-agency Network for Education in Emergencies (INEE).

IIRR (2000) 'Going to scale: Can we bring more benefits to more people more quickly? Conference highlights, April 10–14', International Institute of Rural Reconstruction.

Islam, A. (2019) 'Parent–teacher meetings and student outcomes: evidence from a developing country', *European Economic Review* 111, pp. 273–304.

Jackson, C. K. (2013) 'Match quality, worker productivity, and worker mobility: Direct evidence from teachers', *Review of Economics and Statistics* 95(4), pp. 1096–1116.

Jamal, H. (2021) 'Educational status of Pakistan: Pre and post 18th amendment scenario' (MPRA Paper No. 106274), University Library of Munich, Germany.

Javed, N., and Hanif, M. (2017) 'Factors affecting teacher motivation in public sector schools of Pakistan: An empirical study', *Journal of Educational Research & Practice* 7(2), pp. 112–123.

Javid, H. (2019) 'Democracy and patronage in Pakistan', in M. McCartney and S. A. Zaidi (Eds.), *New Perspectives on Pakistan's Political Economy: State, Class and Social Change* (pp. 216–240), Cambridge University Press, Cambridge.

Jensen, B., Sonnemann, J., Roberts-Hull, K., and Hunter, A. (2016), 'Beyond PD: Teacher professional learning in high-performing systems', National Center on Education and the Economy.

Jones, S., Bailey, R., Brush, K., and Kahn, J. (2017), 'Kernels of practice for SEL: Low-cost, low-burden strategies', The Wallace Foundation.

Kabay, S. (2021) 'Access, Quality, and the Global Learning Crisis: Insights from Ugandan Primary Education', Oxford University Press, Oxford.

Kabay, S., Brown, L., and Yoshikawa, H. (Under advanced review). 'Competing or complementary goals for primary education: Social-emotional learning across the Nigerien education system', *Compare: A Journal of Comparative and International Education.*

Kaffenberger, M., and Spivack, M. (2022) 'System coherence for learning: Applications of the RISE education systems framework' (RISE Working Paper Series No. 22/086).

Kakar, R., Saleem, M., and Sarwar, B. (2022) 'The political economy of school education in post-18th amendment Balochistan', Pakistan Institute of Development Economics, Islamabad.

Kalyanpur, M., and Harry, B. (2012) Culture in Special Education: Building Reciprocal Family–Professional Relationships, Paul H. Brookes Publishing: Baltimore, MD.

Karim, D. (2015) 'Managing conflict by school leadership: A case study of a school from Gilgit-Biltistan', *International Journal of Innovation and Research in Educational Sciences* 2(5), p. 340.

Katz, D. A., Greenberg, M. T., Jennings, P. A., and Klein, L. C. (2016) 'Associations between the awakening responses of salivary α-amylase and cortisol with self-report indicators of health and wellbeing among educators', *Teaching and Teacher Education* 54, pp. 98–106.

Kennedy, M. M. (2016) 'How does professional development improve teaching?' *Review of Educational Research* 86(4), pp. 945–980.

Khaki, J. (2006) 'Effective school leadership: Can it lead to quality education?' in *Quality in Education: Teaching and Leadership in Challenging Times* (Vol. 1, pp. 206–217). Aga Khan University-IED Publications: Karachi, Pakistan.

Khalid, S., and Nadeem, M. (2020) 'Teacher accountability in public and private schools of Pakistan: A comparative analysis', *International Journal of Comparative Education and Development* 22(1), pp. 43–58.

Khan, Q., and Hussain, K. (2023) 'Gone with the flood: Natural disasters and children's schooling in Pakistan', *The BE Journal of Economic Analysis & Policy* 23(1), pp. 271–283.

KESP (2020) 'Khyber Pakhtunkhwa Education Sector Plan 2021 – 2024/25', Elementary and Secondary Education Department Government of Khyber Pakhtunkhwa.

Kim, H. Y., Brown, L., Tubbs Dolan, C., Gjicali, K., Deitz, R., Prieto Bayona, M. del S., and Aber, J. L. (2023), 'Testing the impact of a skill-targeted social and emotional learning curriculum and its variation by pre- and postmigration conflict experiences: A cluster randomized trial with Syrian refugee children in Lebanon', *Journal of Educational Psychology* 115, pp. 502–522.

Kim, H. Y., Brown, L., Tubbs Dolan, C., Sheridan, M., and Aber, J. L. (2020) 'Post-migration risks, developmental processes, and learning among Syrian refugee children in Lebanon', *Journal of Applied Developmental Psychology* 69, 101142.

Kim, H. Y., Deitz, R., and Aber, J. L. (2024) 'Social and emotional learning in countries affected by armed conflicts and protracted crises', in J. A. Durlak, C. E. Domitrovich, and J. L. Mahoney (Eds.), *Handbook of Social and Emotional Learning (2nd ed.).* Guilford Press: New York, NY.

Kim, H. Y., Tubbs Dolan, C., and Aber, J. L. (2022) 'A conceptual framework for education research in conflict and protracted crisis' (ERICC Working Paper No. 1). ERICC.

Kingdon, G. G., Little, A., Aslam, M., Rawal, S., Moe, T., Patrinos, H., Beteille, T., Banerji, R., Parton, B., and Sharma, S. K. (2014) 'A rigorous review of the political economy of education systems in developing countries' (Final Report). Education Rigorous Literature Review. Department for International Development. EPPI-Centre reference number 2203. http://r4d.dfid.gov.uk/.

Kirillova, E. A., Kurbanov, R. A., Svechnikova, N. V., Zul'Fugarzade, T. E. D., and Zenin, S. S. (2017) 'Problems of fighting crimes on the internet', *Journal of Advanced Research in Law and Economics* 8(3), pp. 849–856.

Kremer, M., Brannen, C., and Glennerster, R. (2013) 'The challenge of education and learning in the developing world', *Science* 340(6130), pp. 297–300.

Kwon, H. (2016). 'Effect of middle school students' motivation to learn technology on their attitudes toward engineering'. *Eurasia Journal of Mathematics, Science and Technology Education*, *12*(9), pp.2281-2294.

Lall, M. (2008) 'Educate to hate: the use of education in the creation of antagonistic national identities in India and Pakistan', *Compare: A Journal of Comparative and International Education*, 38(1), pp. 103–119.

Leithwood, K., Day, C., Sammons, P., Harris, A., and Hopkins, D. (2004) 'Successful school leadership: What it is and how it influences pupil learning' (Research Report RR800), National College for School Leadership.

Leithwood, K., Harris, A., Hopkins, D., Christopher, D. and Sammons, P. (2008) 'Seven strong claims about successful school leadership', *School Leadership & Management* 28(1), pp. 27–42.

Leithwood, K. and Jantzi, D. (2000) 'Principal and teacher leadership effects: A replication', *School Leadership and Management* 20(4), pp. 415–434.

Leithwood, K., Sun, J., and Schumacker, R. (2019) 'How school leadership influences student learning: A test of "the four paths model"', *Educational Administration Quarterly* 56(4), pp. 570–599.

Lerner, R. M. (1998) 'Theories of human development: Contemporary perspectives', in W. Damon and R. M. Lerner (Eds.), *Handbook of Child Psychology: Theoretical Models of Human Development* (5th ed., pp. 1–24). John Wiley & Sons, Inc.: Hoboken, NJ.

Linn, J., and Kohl, R. (2022) 'Scaling principles and lessons: A guide for action to achieve sustainable development impact at scale', a position paper of the Scaling Up Community of Practice.

Kohl, R., Linn, J., Cooley, L., ExComm, and Woltering, L. (2022) 'Scaling principles and lessons: A guide for action to achieve sustainable development impact at scale', Wolfensohn Center For Development at Brookings.

Loh, J., and Hu, G. (2014) 'Subdued by the system: Neoliberalism and the beginning teacher', *Teaching and Teacher Education* 41, pp. 13–21.

Lokshin, M., and Yemtsov, R. (2004) 'Combining longitudinal household and community surveys for evaluation of social transfers: Infrastructure rehabilitation projects in rural Georgia', *Journal of Human Development* 5(2), pp. 265–277.

Malik, A. B. (2010) 'Public–private partnerships in education: Lessons learned from the Punjab Education Foundation' (Vol. 309), Asian Development Bank.

Malik, R., and Bari, F. (2022) 'Improving service delivery via top-down data-driven accountability: Reform enactment of the Education Road Map in Pakistan', working paper.

Malik, R., Bari, F., and Aslam, A. (2017) 'School management systems in Punjab: Evidence from a study of government and NGO schools', Institute of Economic Development and Alternatives (IDEAS).

Manan, S. A., David, M. K., and Dumanig, F. P. (2017) 'Ethnolinguistic dilemma and static maintenance syndrome', *Language Problems and Language Planning* 41(1), pp. 66–86.

Mangham, L. J., and Hanson, K. (2010) 'Scaling up in international health: What are the key issues?' *Health Policy and Planning* 25(2), pp. 85–96.

Mansoor, Z., and Akhtar, R. N. (2015) 'The paradigm shift: Leadership challenges in the public sector schools in Pakistan', *Journal of Education Practice* 6, pp. 203–211.

McLean, L., and Connor, C. M. (2015) 'Depressive symptoms in third-grade teachers: Relations to classroom quality and student achievement', *Child Development* 86(3), pp. 945–954.

Mendenhall, M., Cha, J., Falk, D., Bergin, C., and Bowden, L. (2021) 'Teachers as agents of change: Positive discipline for inclusive classrooms in Kakuma refugee camp', *International Journal of Inclusive Education* 25(2), pp. 147–165.

Ministry of Human Rights (MoHR) – Government of Pakistan (2023). Accessed on 7 December 2023 from https://mohr.gov.pk/.

Ministry of Planning, Development & Special Initiatives (MPDSI). (2022) 'Pakistan floods 2022: Post-disaster needs assessment – Main report', Islamabad, Pakistan.

Morgan, P. J., Baser, H., and Morin, D. (2010) 'Developing capacity for managing public service reform: the Tanzania experience 2000–2008', *Public Administration and Development: The International Journal of Management Research and Practice* 30(1), pp. 27–37.

Munna, A. S., and Kalam, M. A. (2021) 'Teaching and learning process to enhance teaching effectiveness: a literature review', *International Journal of Humanities and Innovation (IJHI)* 4(1), pp. 1–4.

Muralidharan, K., and Sundararaman, V. (2015) 'The aggregate effect of school choice: Evidence from a two-stage experiment in India', *Quarterly Journal of Economics* 130(3), pp. 1011–1066.

Murphy, J. (1988) 'Methodological, measurement and conceptual problems in the study of instructional leadership', *Educational Evaluation and Policy Analysis* 4(4), pp. 290–310.

Mutch, C. (2015) 'Leadership in times of crisis: Dispositional, relational and contextual factors influencing school principals' actions', *International Journal of Disaster Risk Reduction* 14, pp. 186–194.

Najam, A. (26 July 2017) 'Living in the age of adaptation', IIASA Nexus, International Institute for Applied Systems Analysis (IIASA).

Najam, A. (2023) 'Foreword' in M. Ahmad (Ed.), *Water Policy in Pakistan: Issues and Options* (pp. vii–viii), Springer Nature: Cham, Switzerland.

Najam, A., and Bari, F. (2017) 'Pakistan national human development report 2017: Unleashing the potential of a young Pakistan', United Nations Development Programme Pakistan (UNDP Pakistan).

National Disaster Management Authority (NDMA). (2017a) 'National disaster risk management framework Pakistan', Government of Pakistan.

National Disaster Management Authority (NDMA). (2017b), 'Pakistan school safety framework', Government of Pakistan.

National Disaster Management Authority (NDMA) (2022). 'NDMA floods' 2022 Government of Pakistan.

National Education Management Information System (NEMIS). (2021) 'Pakistan education statistics 2020–21' (PIE Publication No. 296), [ISBN: 978-967-444-119-1].

Nawab, A. (2020) 'Monitoring and accountability in professional development *of* teachers in rural Pakistan', *Journal of International and Comparative Education* 9, pp. 77–89.

Neumann, K., Kind, V., and Harms, U. (2018) 'Probing the amalgam: the relationship between science teachers' content, pedagogical and pedagogical content knowledge', *International Journal of Science Education* 41, pp. 847–861.

Newman, J., Pradhan, M., Rawlings, L. B., Ridder, G., Coa, R., and Evia, J. L. (2002) 'An impact evaluation of education, health, and water supply investments by the Bolivian Social Investment Fund', *The World Bank Economic Review* 16(2), pp. 241–274.

Ngozi, E., and Emeka, L. (2021) 'Influence of teachers' qualifications on academic performance of students in mathematics', *Journal of Education and Training* 5, pp. 39–46.

Nicolai, S., Hine, S., and Wales, J. (2015) 'Education in emergencies and protracted crises: Toward a strengthened response', Overseas Development Institute.

Nicolai, S., Sarwar, M. B., and Kosbar, Y. (2023) 'Digitally powered 'learning to earning' for displaced young people and adolescent girls and young women', UNICEF.

Niyozov, S., and Lalani, M. (2019) 'Peace education in Pakistan: Challenges and possibilities', in M. Drinkwater, F. Rizvi, and K. Edge (Eds.), *Transnational Perspectives on Democracy, Citizenship, Human Rights and Peace Education* (pp. 237–260), Bloomsbury Publishing London, UK.

Novelli, M., Lopes Cardozo, M. T. A., and Smith, A. (2017) 'The 4Rs framework: Analyzing education's contribution to sustainable peacebuilding with social justice in conflict-affected contexts', *Journal on Education in Emergencies* 3(1), pp. 14–43.

Olsen, B. (2021) 'Scaling education innovations for impact in low-and middle-income countries during COVID: Reflections on key themes', Center for Universal Education at The Brookings Institution.

Organisation for Economic Co-operation Organisation for Economic Co-operation and Development (OECD) (2019), 'PISA 2018 results (Volume I): What students know and can do', OECD Publishing.

Pakistan Bureau of Statistics. (2017) 'Pakistan education statistics 2016–17', Government of Pakistan.

Pakistan Bureau of Statistics. (2021) 'Pakistan social and living standards measurement survey (2019–20): District level survey', Government of Pakistan.

Pakistan Institute of Education (PIE). (2022) 'Pakistan education statistics 2021–22' (Publication No. 300). Government of Pakistan. ISBN: 978-969-444-121.

Pakistan Institute of Education (PIE) (2024) 'National Achievement test 2023. Government of Pakistan'.

Pakistan Learning Poverty Brief. (2019), EduAnalytics World Bank.

Peek, L., Abramson, D. M., Cox, R. S., Fothergill, A., and Tobin, J. (2018) 'Children and disasters', *Handbook of Disaster Research*, pp. 243–262. Springer: New York, NY.

Peña, R., Quintanilla, M., Navarro, K., Martinez, J., Castillo, V., Pérez, W., and Källestål, C. (2008) 'Evaluating a peer intervention strategy for the promotion of sexual health-related knowledge and skills in 10-to 14-year-old girls. Findings from the "Entre amigas" project in Nicaragua', *American Journal of Health Promotion* 22(4), pp. 275–281.

Penninckx, M. (2017) 'Effects and side effects of school inspections: A general framework', *Studies in Educational Evaluation* 100(52), pp. 1–11.

PESP (2019) 'Punjab Education Sector Plan 2019/20 – 2023/2024', School Education Department (SED), Government of the Punjab.

Petal, M., and Izadkhah, Y. O. (May 2008), 'Concept note: Formal and informal education for disaster risk reduction', in *Proceedings of the International Conference on School Safety* (Vol. 1416). Islamabad, Pakistan.

Pherali, T. (2019) 'Theories and conceptual frameworks in education, conflict, and peacebuilding' [Whole issue], *Education and Conflict Review* 2.

Pherali, T. (2024) 'Education: Cultural reproduction, revolution and peacebuilding in conflict-affected societies', in O. P. Richmond, S. Pogodda, and J. Ramović (Eds.), *The Palgrave Handbook of Disciplinary and Regional Approaches to Peace* (pp. 193–205). Palgrave Macmillan: Cham, Switzerland.

Polat, F. (2011) 'Inclusion in education: A step towards social justice', *International Journal of Educational Development* 31(1), pp. 50–58.

Potter, P. D., Pavlakis, A. E., and Roberts, J. K. (2021) 'Calming the storm: Natural disasters, crisis management, and school leadership', *Journal of Cases in Educational Leadership* 24(2), pp. 96–111.

Pritchett, L. (2013) The Rebirth of Education: Schooling Ain't Learning, CGD Books.: Washington, DC.

Pritchett, L. (2015). Creating education systems coherent for learning outcomes (RISE Working Paper Series No. 15/005).

Pritchett, L., Newman, K., and Silberstein, J. (2022). *Focus to flourish: Five actions to accelerate progress in learning*. Research on Improving Systems of Education (RISE).

Rahim, B. (2019) 'Decentralized decision making and educational outcomes in public schools: Evidence from Pakistan', *International Journal of Educational Management* 33(7), pp. 1625–1640.

Rahman, T. (2011) 'Images of the 'other' in school textbooks and Islamic reading material in Pakistan', in L. Yates and M. Grumet (Eds.), *World Yearbook of Education 2011* (pp. 181–198). Routledge, Taylor and Francis Group.: Abingdon, UK.

Rawal, S., Aslam, M. and Jamil, B., (2013e), 'Teacher Characteristics, Actions and Perceptions: What Matters for Student Achievement in Pakistan?', CSAE Working Paper WPS/2013-19, University of Oxford.

Rawal, S., Aslam, M., Sabates, R., and Cashman, L. (2020) 'Evaluation of the Siyani Sahelian (SS) programme in South Punjab: Empowering adolescent girls through post-primary opportunities for

learning gains, TVET, livelihoods, and life skills', Oxford Partnership for Education Research and Analysis.

Reed, R. V., Fazel, M., Jones, L., Panter-Brick, C., and Stein, A. (2012) 'Mental health of displaced and refugee children resettled in low-income and middle-income countries: risk and protective factors', *The Lancet* 379(9812), pp. 250–265.

Rizwan, M., and Taniguchi, K. (2023) 'ADB briefs: Strengthening School Teaching in Pakistan' (No. 283). Asian Development Bank.

Robinson, V., Lloyd, C. and Rowe, K. (2008) 'The impact of leadership on student outcomes: An analysis of the differential effects of leadership types', *Educational Administration Quarterly* 44 (5), pp. 635–674.

Rus, C.M., Radu, L.E., Vanvu, G.I. (2016) 'Motivation for participating to sports competitions in school', *Revista de Cercetare si Interventie Sociala* 52, pp. 195–203.

Saenz, M. B., Nandakumar, V., and Adamuti-Trache, M. (2023) 'A comparative study of high school students' math achievement and attitudes: Do math teacher qualifications matter?', *International Journal of Education in Mathematics, Science, and Technology (IJEMST)* 11(2), pp. 304–322.

Saigol, R. (2014) 'The making of the Pakistani citizen: Civics education and state nationalism in Pakistan', in E. Vickers and K. Kumar (Eds.), *Constructing Modern Asian Citizenship* (1st ed., pp. 175–195). Routledge: London.

Sancar, R., Atal, D., and Deryakulu, D. (2021) 'A new framework for teachers' professional development', *Teaching and Teacher Education* 101, 103305.

Sarwar, M. B. (2023) 'Towards a resilient education recovery from Pakistan's floods: A Malala Fund Pakistan rapid response research report', Pakistan Coalition for Education.

Sarwar, M., Homonchuk, O., and Nicolai, S. (May 2024) 'Drivers of (in)coherence in the delivery of education in Northeast Nigeria', Education Research in Conflicted and Protracted Crisis (ERICC).

Say, S. and Bag, H. (2017) 'The Evaluation of the effect of a newly designed computer game on 7th grade students' motivation towards science and aggression', *Eurasia Journal of Mathematics, Science and Technology Education* 13(8), pp. 5379–5393

Sen, A. (1999) *Development as Freedom.* Oxford University Press: Oxford.

Sergiovanni, T. (2001) Leadership: What's in it for schools? Routledge: London.

SESP and R. (2019) 'School Education Sector Plan & Roadmap for Sindh (SESP&R) 2019–2024', School Education and Literacy Department Government of Sindh.

Setty, R., Iyengar, R., Witenstein, M. A., Byker, E. J., and Kidwai, H. (Eds.). (2019) *Teaching and Teacher Education: South Asian Perspectives*. Springer Nature: Cham, Switzerland.

Shafa, M. D. (2011) 'Role of head teachers in managing the forces emanating from the external world of schools in Gilgit-Baltistan of Pakistan', *American International Journal of Contemporary Research* 1(2), p, 66.

Shah, D., Haider, G., and Taj, T. (2019) 'Causes of dropout rate at primary level in Pakistan', *International Journal of Curriculum and Instruction* 11(2), pp. 38–74.

Shah, S. (2023) 'Navigating gender stereotypes as educational leaders: An ecological approach', *Management in Education* 37(3), pp. 140–149.

Shahzad, S., Abbas, M., Aziz, R., and Javed, B. (2019) 'A conceptual framework for effective school leadership in Pakistan*:* A systematic review', *Journal of Educational Leadership, Policy and Practice* 34(2), pp. 67–86.

Shaukat, S. (2015) 'Student teachers' attitudes towards inclusion in Pakistan', *Bahria Journal of Professional Psychology* 14(1), pp. 72–89.

Shcherbakov, V. S., Ashmarina, S. I., Suraeva, M. O., Kurbanov, R. A., Belyalova, A. M., Gurbanov, R. A., and Torkunova, J. V. (2017) 'Iteration as a regulatory function of education management', *Eurasian Journal of Analytical Chemistry* 12(7), pp. 1211–1219.

Shiwaku, K., and Shaw, R. (2016) 'Introduction: Disaster risk reduction and education system' in K. Shiwaku, A. Sakurai, and R. Shaw (Eds.), *Disaster Resilience of Education Systems: Experiences from Japan* (pp. 1–10), Springer: Tokyo, Japan.

Siddiqi, S. (2022) 'Contested identities; competing accountabilities: The making of a 'good' public schoolteacher in Khyber Pakhtunkhwa, Pakistan' (Research on Improving Systems of Education, No. PE02).

Siddiqui, N., and Shaukat, S. (2021) 'Teacher mobility in Punjab, Pakistan: Stayers *and* movers within the public and private schools', *Education Sciences* 11(7), p. 358.

Siddiqui, S., Singh, S., and Hassan, N. (2018) 'Barriers to accessing education for children with disabilities in Pakistan: A qualitative study', *Disability, CBR & Inclusive Development* 29(1), pp. 49–63.

Singal, N., Niaz, L., Gupta, R., Bligh, L., Ogando-Portela, M., Aslam, M., and Rawal, S. (2023), 'Independent evaluation of the Girls' Education Challenge Phase II: Evaluation study 4: Educating girls with disabilities in GEC II' (Final Report*).* Tetra Tech International Development.

Singal, N., Sabates, R., Aslam, M., and Saeed, S. (2018) 'School enrolment and learning outcomes for children with disabilities: findings from a household survey in Pakistan', *International Journal of Inclusive Education* 24(13), pp. 1410–1430.

Tadesse, S., and Muluye, W. (2020) 'The impact of COVID-19 pandemic on education system in developing countries: A review', *Open Journal of Social Sciences* 8(10), p. 159.

Tamim, T. (2014 a). 'Languages in education and symbolic violence in Pakistan', in M. Solly and E. Ersch (Eds.), *Language and Globalization* (pp. 111–134). Cambridge Scholar Publications: Newcastle upon Tyne, UK.

Tamim, T. (2014b) 'The politics of languages in education: Issues of access, social participation and inequality in the multilingual context of Pakistan', *British Educational Research Journal* 40(2), pp. 280–299.

Thakur, I., and Abbas, F. (2017) 'Inclusive education in Punjab: Challenges and way forward', *Journal of Inclusive Education* 1(1), pp. 15–26.

Tseng, V., and Seidman, E. (2007), 'A systems framework for understanding social settings', *American Journal of Community Psychology* 39(3–4), pp. 217–228.

Tubbs Dolan, C. (2017a) 'Accelerating progress towards a coordinated and evidence-based education in emergencies field: A roadmap for research–practice partnerships' [Doctoral dissertation, New York University].

Tull, H. (2019) 'India and Beyond: Vedism, Hinduism, and the continuity of culture', *International Journal of Hindu Studies 23*(3), pp. 325–330.

Tursunovich, R. I. (2022) 'Guidelines for designing effective language teaching materials', *American Journal of Research in Humanities and Social Sciences* 7, pp. 65–70.

United Nations. (2006) 'Convention on the rights of persons with disabilities'.

United Nations. (2015) 'Transforming our world: The 2030 agenda for sustainable development'.

United Nations. (2018) 'Universal declaration of human rights and the rights of religious minorities'.

United Nations Entity for Gender Equality and the Empowerment of Women (UN Women). (2023) 'National report on the status of women in Pakistan', Pakistan Country Office.

United Nations Office for Disaster Risk Reduction (UNDRR). (2022) 'Technical guidance on comprehensive risk assessment and planning in the context of climate change'.

United Nations Office for the Coordination of Humanitarian Affairs (OCHA). (2023) 'Pakistan: 2022 monsoon floods situation report No. 13 as of 6 January 2023'.

UNESCO (2017a) 'A guide for ensuring inclusion and equity in education'.

UNESCO (2017b), 'Education for people and planet: Creating sustainable futures for all'.

UNESCO (2019a) 'Strengthening the education workforce: Training teachers to deliver inclusive education'.

UNESCO (2019b) 'UNESCO Pakistan country strategic document 2018–2022'.

UNESCO (2021). 'Global education monitoring report 2021: Inclusion and education'.

UNESCO (2023) 'Global education monitoring report 2023: Education and climate change – Learning to act for people and planet'.

UNICEF (2017) 'Situation analysis of children in Pakistan'.

UNICEF (2020) 'Building resilient education systems beyond the COVID-19 pandemic: Considerations for education decision-makers at national, local, and school levels', UNICEF Europe and Central Asia.

UNICEF (2022) 'Schools for more than 2 million children in Pakistan remain inaccessible due to devastating floods', UNICEF Press Release, 3 November 2022.

UNICEF and Viamo (2021) 'Brief on learning continuity amidst COVID-19 school closures in Pakistan'.

Urquiola, M. (2006) 'Identifying class size effects in developing countries: Evidence from rural Bolivia', *Review of Economics and statistics* 88(1), pp. 171–177.

Van de Grift, W. and Houtveen, A. A. M. (1999), 'Educational leadership and pupil achievement in primary education', *School Effectiveness and School Improvement* 10(4), pp. 373–389.

Wang, T.S., Hsieh, S.W. (2015), 'An assessment of individual and technological factors for computing validation: Motivation and social processes', *Revista de Cercetare si Interventie Sociala* 50, pp. 156–171.

Warwick, D. P., McGinn, N. F., and Reimers, F. (1991) 'The implementation of educational innovations in Pakistan: Cases and concepts', Harvard University, USA.

Waters, T., Marzano, R. J., and McNulty, B. (2018) 'School leadership that works: From research to results', Association for Supervision and Curriculum Development (ASCD).

Watson, D., and Khan, A. Q. (2005) 'Capacity Building for decentralised education service delivery in Pakistan', *European Center for Development Policy Management. Discussion Paper* (57G).

Witziers, B., Bosker, R.J. and Kruger, M.L. (2003) 'Educational leadership and *student* achievement: The elusive search for an association', *Educational Administration Quarterly* 39(3), pp. 398–425.

Wolf, S., Torrente, C., Frisoli, P., Weisenhorn, N., Shivshanker, A., Annan, J., and *Aber*, J. L. (2015), 'Preliminary impacts of the "Learning to Read in a Healing Classroom" intervention on teacher well-being in the Democratic Republic of the Congo', *Teaching and Teacher Education* 52, pp. 24–36.

World Bank Group (2024), 'Pakistan – Learning poverty brief 2024' (English), World Bank Group, Washington, D.C.

World Bank (2005), 'Reducing poverty, sustaining growth: Scaling up poverty reduction. A global learning process and conference in Shanghai, May 25–27, 2004. Case study summaries', World Bank. (2018) 'World development report 2018: Learning to realize education's promise', World Bank.

World Bank (2019) 'Learning Poverty Brief'.

World Bank (2019) 'World Development Report 2019: The Changing Nature of Work'.

World Bank (2022a) 'Pakistan: Country climate and development report', World Bank.

World Bank (2022b) 'The state of global learning poverty: 2022 update', World Bank Group.

World Food Programme (WFP). (2022) 'WFP Pakistan situation report: September 19, 2022'.

Young Lives (2021) 'Demonstrating the overlooked impact of climate change on education and skills development'. University of Oxford.

Yu, R., and Singh, K. (2018) 'Teacher support, instructional practices, student motivation, and mathematics achievement in high school', *The Journal of Educational Research* 111(1), pp. 81–94.

Zaidi, Y., Mumtaz, K., Farooq, S., et al. (2020) 'Young women in Pakistan: Status report', Islamabad: UN Women Pakistan.