Durham University Evidence Centre for Education

Does school matter for early childhood education?

Assessing cognitive and wider development of children in the Province of Punjab, Pakistan and State of Gujarat, India

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Foreword
By
Ziauddin Yousafzai

As a father of three children, and a schoolteacher and headteacher for 18 years, I can fully appreciate the incredible value and scope of this report. I am a strong believer in the power of education. I grew up in a small village in Shangla Swat in the northwest of Pakistan. I was brought up in a typical patriarchal family where, as a boy, I had the opportunity to go to school while my five sisters stayed home. This difference between my sisters and I made a huge difference in our lives to come.

I wish my sisters could have attended school so they would have seen and experienced a better quality of life. Their isolation from education made me very keen and committed to my daughter's education, and the schooling of all other girls in my community. Our organisation, the Malala Fund, works for a world where every child can learn at school. Our goal is that all girls can access free, safe and quality education.

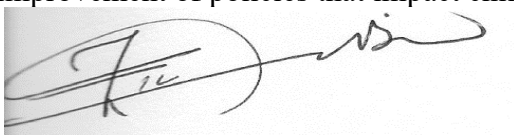
I am delighted to see that this report on early childhood education in Pakistan and India has highlighted the challenges of access to school with a particular focus on the advantages of school for children. It is heart-wrenching to read in this report how children who do not attend school are missing so much learning, and most importantly are deprived of the experience of growing up in an environment of safety, friendship, and support from teachers. As a school leader in Swat, Pakistan I have witnessed with my own eyes how the school environment can bring out the best potential in our children and give them a path towards success and happiness in life. This journey is much more than just getting good marks or paper certificates. Learning to read and write is important but school education is about becoming a person who can think and make the right choices. This process starts in early childhood and is the foundation on which schools and teachers need to build.

Poverty is too often the enemy of children's growth and academic potential. Schooling is under-funded in both India and Pakistan. And in any natural calamity or man-made disaster children are often the first to suffer. School closures due to COVID 19 have badly affected our kids in India and Pakistan. Pakistan in particular has become more vulnerable to terrorism, conflict, earthquakes and floods, coupled with political instability and a weakened economy. More people are living in poverty line which affects the health and education of our children.

Pakistan is going through very hard times. The recent floods have been the worst in the country, destroying our homes, demolishing schools and taking so many lives. Poverty will be worse in the near future, and a large number of children will never be able to return back to education. The report clearly draws our attention to instances where children's links to school are weakened by poverty and it just needs one disturbance in life that takes away children's access to school education. On the basis of the evidence in this report, I urge the Government to restore and strengthen the school systems as a priority, especially in the areas where floods have caused damage at any level.

Many countries have overcome gender disparities in access to education and that is what I wish we can achieve in India and Pakistan soon. I am also pleased to read in this report that in the early years girls and boys perform equally well in academic attainment. This means, the attainment gap widens at a later stage in education when girls experience disadvantage worse than boys. I believe education is the most powerful equaliser, and if girls and boys are given equal opportunities to learn, grow and thrive, we will see more equality in our societies. I hope that policy-makers can understand these issues of inequalities of access to education and realise that the policies and infrastructure must address gender inequalities at a strategic level, by following evidence-led approaches.

I congratulate the authors of this report for presenting this important body of evidence that provides so much food for thought and content for strategic policy actions. Even more, it is encouraging to see that this project was successfully conducted and completed as a collaboration between academics in India, Pakistan and the United Kingdom. There is so much we can do together for the promotion of knowledge and sharing best practices for early childhood education. Academics in India and Pakistan have a key role to play in the universal improvement of policies that impact children's lives beyond borders.



Co-Founder and Board Member
Malala Fund
Author of *Let Her Fly: A Father's Journey*

Comments on this report:

Miss Erum Naz
Primary School Teacher
Government Girls Primary School
Abid Colony, Punjab, Pakistan

I am an experienced schoolteacher for the last six years. I have read this report with great interest and these findings resonate with my experience of working in a school where children come from very poor families. We see that parents from this community enrol their children with great aspirations, but multiple factors become hurdles at the later stages which affect their child's schooling. Financial constraints, lack of parents' awareness about importance of literacy, health and poor nutrition are the main hurdles for children to continue their schools. We, as government schoolteachers, get very limited funding for assistance and that can only be spent on needs such as a school bag or books. The poverty at home is much adverse and bigger than a child's need for a school bag or books and pencils. These items are one time purchase while feeding hungry children in school needs consistent funding and support from the government. Our schools do not get any financial assistance for supporting children from poor families and without sufficient financial aid we cannot retain children from poor families. I agree with the findings where it says that children's numeracy and literacy is slightly better if they attend school while their outdoor activities are limited because school education is always classroom based and continuous four to five hours a day in five days a week. Another thing which we experience as teachers is that the early years curriculum has hardly any emphasis on children's social emotional health and wellbeing. The report findings show that school can be more effective on social emotional wellbeing and if curriculum can focus on social emotional learning more than literacy and numeracy then we can improve children's general experience of life at school. In early years education we need to change our focus of the curriculum where children are given more resources for their physical and emotional growth and they experience learning in natural settings instead in small classrooms.

Mrs Zarish Farhan
Instructional Coach for Primary Teachers
Beaconhouse School System, Lahore, Pakistan

I am a trained and experienced teacher in a private school. Early years and primary phase are given a lot resources and emphasis here. We get structured curriculum for teaching, and we have set literacy and numeracy targets for each child to achieve. It is really hard to divert from focus on literacy and numeracy stuff because teachers' success and failures are judged on children's attainment. This is what parents know as the purpose of school and this is why they pay their children's school fees. Teachers are under huge pressures and there is no teaching assistance provided in the class which can make a huge difference. I agree with the findings that learning at school is important but not more than their general life experience and emotional well-being. I also know that the education system we follow has this perception that foundation level literacy and numeracy make the strong base for children academic attainment. This perception does not give any importance to children's outdoor experience, need to have free time, play, and experience nature or make friends. Sometimes all these good things are known as harmful for children's academic achievement. I am glad to say that this research done in the context of Pakistan and India will help us change our perception, behavior and school policies towards understanding the purpose of school for children.

Dr Sadia Shaukat
Associate Professor Education
University of Education, Lahore, Pakistan

Pakistan and India are a bit behind in raising the bar for achieving SDG 4 of quality education for all. I am glad that the current study provides useful comparisons between India and Pakistan which the policy makers can seriously consider for practical actions. Ensuring provision of early childhood education is a significant move in reducing the next stage of children's drop out at primary and secondary level. The study is a natural experimental design and has generated a very important dataset by assessing a large sample of children in Pakistan and India and provided linked household data. This data can be a useful resource for policymakers and researchers. The report highlighted that the education policies need to adopt data driven approaches. The report draws our attention to a dire need for official government database for children's data as it is important for their safety, health, education and wellbeing. One of the messages from this study can be that the education experts and child protection activists should increase demands from the governments in setting up local measures for registering children's birth and school entry officially. Children's right to education depends on such measures. The last chapter gives lots of practical suggestions for policy and practice implications. I really hope that the governments in India and Pakistan can take these report findings on board and make local investments in research and development of early years education sector.

Dr Tomas Zelinsky
Associate Professor
Technical University of Kosice, Slovakia

Though we can observe considerable improvements in addressing children's educational needs around the world, millions of school-age children have never been enrolled in school. Conducting a natural experiment in Punjab (Pakistan) and the State of Gujarat (India), this report provides numerous compelling findings. Using a rigorous research methodology, the authors, for example, show that school attendance had the most considerable effect on children's social-emotional learning. One of the most critical takeaways from this report is related to parents' engagement in children's education. Some parents need state intervention and support in fulfilling their commitment towards children's education. To sum up, the report offers exciting evidence on the role of school for early childhood education and should be regarded as "compulsory reading" for policymakers dealing with education in the region. In addition, researchers from other provinces of Pakistan or other states of India can build on the present report and produce similar studies considering the cultural contexts of their particular regions.

Zubair Faisal Abbasi
Policy Analyst
Executive Director
Impact Research International, Pakistan

It is an impressive piece of research that uses mix methods approaches to data collection and analysis of findings. The research, as compared to traditional researches, does not end at the identification of areas of further research rather it recommends policy actions, too. The main research finding revolves around the centrality of school in multi-dimensional development of children through a socialising experience. It lays stress on the role of schools in enhanced cognitive development of children in numeracy and social emotional learning, although the research brings out evidence, "The most interesting finding of the study is that all children gained improvement in learning outcomes despite they attended school or not." The research has also collected and interpreted empirical evidence on the gendered impact of children getting out of school, and what role do they play when they leave the school. It shows that girl child is comparatively worse off than

the boy where she has to cut her off from mainstream social activities and stay confined to homes and help their mothers while boys can still enjoy going out and playing with peers or learning income generating skills from fathers. Apart from many interesting insights which this research reveals, let me repeat a sentence from the research that "the most important and the biggest effect of school was on children's social emotional learning." So, it is not only literacy, it is not only numeracy, but it is social emotional learning which schools can potentially provide. Therefore, effort should be made to make schools centres of emotional excellence for children, and curriculum as well as faculty must be designed and equipped with resources to execute such cognitive development of children.

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Executive summary

School is a long-term intervention in children's lives. Children spend many hours in school where the expectation is that the activities will boost their natural growth and academic potential in the most receptive years of development. However, learning a combination of cognitive and non-cognitive skills is also a natural process. Assuming that these only or even mostly occur at school could be a fallacy. How can we "partition" the effect of schooling?

Schools also provide a social service in developing economies and emerging modern labour markets where household income needs, social progress and economic well-being demands workforce participation from parents, and sometimes children. State level investment in the school infrastructure builds a compelling case to investigate the efficacy of school as a policy level intervention. The existing evidence on school effect on children's learning remains unclear because of methodological limitations of clear comparisons of children exposed to school with their counterparts never exposed to school. Moreover, it is not feasible to allocate children to school or not as a long-term intervention. However, as here, a quasi-experiment based on naturally occurring comparisons is possible and ethical.

This study looks at the impact of school on children's learning and general life experiences in early years of childhood (at age 3 to 8 years of age) by drawing a comparison with children who never or briefly attended school. The study is an opportunity to assess the importance and function of school in children's lives in two largest regions of Punjab, Pakistan and State of Gujarat, India. Not all children attend school in these two regions. The natural settings gave access to a sufficient number of cases for a reasonable calculation of effect sizes that are meaningful for interpretation. We assessed 1,123 children regardless of their school attendance status, on tasks of basic numeracy, literacy, and social-emotional learning using a standardised measure of assessment, implemented at two points in time with a gap of 12 months. The learning attainment comparisons accounted for family socioeconomic status, family size, parental education, access to schools and regional characteristics. The analyses of these factors gave us an indication of differences among children's learning patterns and how much school intervention in early years can assist children's cognitive and non-cognitive learning. The study also collected in-depth and narrative data from parents and children which provided context and valuable understanding of the role of school and sometimes the benefits of the absence of school in children's life.

Key findings

1) Children showed evidence of learning whether they attended school or not. Learning at this life stage is a natural process and all children can gain basic aspects of literacy, numeracy and social emotional skills.
2) The amount of learning, on average, by children who attended school was substantially larger than by children who dropped out of school and those who never attended school.
3) Attending school made a bigger difference in numeracy skills, less so in literacy skills.
4) The most important and the biggest difference was in children's social emotional learning. Children who attended school compared to those who never attended school were more self-aware, had more of friends to play with and could recognize emotions like empathy better.
5) Attainment does not show any substantial gender gap in early childhood years. To some extent girls show slightly better performance than boys.
6) School attendance (or not) seems to be partly determined by children's age and family socioeconomic background and this can further account for children's attainment.
7) Most children attended school and this number increased in the second wave of data collection. There is no clear cut-off point in children's age between 3 to 8 when they start attending school. In the second year of the study some children also dropped out while some were never exposed to school.

8) Children's access to play and engagement in outdoor activities are curtailed if they attend school. Activities in schools are mainly classroom based.

9) Dropped out children consistently reported that their life at school was stressful and boring, and they had more fun and enjoyment after leaving school.

10) Parents need a long-term commitment to their children's education. Parents' reported views showed that lack of state level assistance is a major barrier in fulfilling their commitment.

11) Financial barriers, circumstantial disruptions, concerns for children's safety, travel, access to school and teachers' lack of cooperation when children struggle at school, gradually make some families withdraw their children from school education.

12) Natural calamities such as pandemic, floods and earthquakes also disrupted some children's access to school and there was no mechanism or intervention reported to bring dropped out children back to school.

Chapter 1: Does school matter for early childhood education?

1.1 Introduction

According to estimated figures from UNESCO, 6 million children in India and 5 million in Pakistan in the age group of 5-9 years have never been enrolled in school, and the dropout even for those in school gradually increases after primary-school age. Some indicators of early childhood development draw attention to the importance of school enrolment and attendance in the early years of childhood. Children's early school enrolment and attendance show some promising impacts on subsequent retention in education.

The new research reported here involved a natural experiment with a sample of 1,123 children (aged 3 to 8 years) from the Punjab, Pakistan, and the State of Gujarat, India. It assessed the impact of early childhood school attendance for 12 months on children's cognitive and other learning outcomes. We present the findings of two data sweeps a year apart, demonstrating the difference in children's cognitive learning, and other factors, in relation to their school attendance. Four groups were compared in the main analysis: those who attended school in first data sweep, those who only attended in the second data sweep, those who stopped attending in the second data sweep, and those who never attended school.

The results show that cognitive learning outcomes naturally progressed for all children, including for those who never attended school. Those attending schools in both years were always clearly ahead of counterparts who never attended school, and the overall learning gap remained wide after a year, especially in numeracy and social emotional learning outcomes. Those who stopped attending in the second year showed a decline in learning. The findings of our regression models show that children's age and family background characteristics are strong predictors of children's cognitive learning. After controlling for children's age and household assets, school attendance shows a small advantage in progress for the school attenders (R square =0.02, coefficient of 0.17).

School provides environment for learning where educational resources, social interaction with peers and teachers play important role towards learning and attainment. Children not attending school cannot meet the same level of attainment in literacy and numeracy because these skills need to be taught regularly through structured coaching, implementation of impactful learning approaches, opportunities of practice, and feedback. The attainment gap widens as children grow up because children not in school do not have any other alternatives in catching up skills for literacy and numeracy.

The narrative interviews were recorded for a deeper understanding of the role of school. We collected information from parents and children who were regular school attenders, school dropouts, and those who never attended school. Children's views explained that school is much more than attainment. Most important aspect of school experiences is how they perceive their treatment by the teachers. Children attending school liked school because the school is playing an important role in their life, and they feel included in the school community. Children's retention in school is associated with their overall school experience. Children who dropped out from school had some common explanation and reasons where experiences at school made them leave education. Poverty was another dominant factor that stopped children from attending school even where school education was free. The associated cost of attending school regularly was hard to afford for many disadvantaged families. In some cases, the incident of dropout was followed by adversity in life such as death or sickness in the family. Natural calamities such as pandemic, floods and earthquakes also disrupted some children's access to school and there was no mechanism or intervention reported to bring dropped out children back to school. Most unfortunate reasons that could be easily prevented were unfair teacher treatment and punishments that children experienced in school which ultimately influenced parental decision to withdraw children from education. Children who never attended school and specifically girls from disadvantaged families were clearly at risk and most who were interviewed were involved in child labour.

1.2 Background

In 1948 United Nations recognised children's rights as human rights education was accepted as one of the children's rights in 1959. These are post-world war decades which greatly influenced human values and recognition of women's participation in the workforce above and beyond their childbearing role and responsibilities. School systems evolved in response to protecting children's rights from workforce participation in the industrialised economies. The historical development in the education policies are driven by a general realisation of children's right to live a safe life, free from fear of hunger, poverty and other forms of abuse. Moreover, the modern education systems have evolved from the economic needs where adults were required for the delivery of industrial work and social services whereas child's participation in economic labour and workforce were seen as exploitation and abuse. The emergence of compulsory school attendance increased women's labour force participation, making the role of school essential in a socially and economically expanding societies. The other social benefits of universal school provisions are shown in the form of increasing fairness, justice and opportunities for all but specially for the children facing socioeconomic poverty at the household level (Cornelissen, et al. 2018, Raudenbush and Eschmann 2015). Children's learning and academic attainment during the time spent in school somehow has been the most important indicator of measuring the school impact (Morton et al. 2022, Downey and Condron 2016, Ceci 1991).

School is introduced in children's life when they develop some independency from parents/ carers and can adapt in an environment mainly intended to accelerate their development in early years of life. In the last decade, exposure to early childhood learning has achieved a worldwide policy focus leading to the development of provisions and programmes (Richter et al. 2019). Education systems have adopted different policies for school starting age but usually the expected range of starting a formal school is between five to seven years of age (Sharp 2002). The evidence is inconclusive on the most appropriate starting age of school and if early start led to academic attainment outcomes in later key stages in education (Hoskovcová and Sikorska Iwona 2014, Burger 2010). However, the evidence suggests some beneficial impact for disadvantaged children if they start school earlier in life (Downey et al. 2004, Heckman 2006, Berlinksi et al. 2008). The philosophy and practice of early childhood education promote pre-school programmes and school readiness interventions targeting children's preparedness in the domains such as health, self-regulation, social and emotional development, language development, cognitive development, and attitudes to learning (Pan et al. 2019).

There is a consistent and large body of evidence on socioeconomic poverty and life adversities in early years of life having negative and lifelong impact on the development of brain and cognition process (Shonkoff and Garner 2012). Therefore, exposure to healthy nutrition and educational treatments between 3 to 8 years of age can prevent cognitive loss due to malnutrition and socioeconomic adversities (McCoy et al. 2018, Li et al. 2003). The existing evidence has shown that pre-school interventions which are combination of nutrition and educational programmes have a positive impact on children's school readiness, retention in primary school and leading to higher academic performance (OECD 2018, Nores and Barnett 2010). School is the biggest and long-term intervention introduced systematically in children's life with pre-specified aims and objectives. Introducing school in children's life is mainly to stimulate and accelerate the cognitive learning process in early development years in life (Black et al. 2017, Marcovitch et al. 2015, Weaver 2014, Noble et al. 2015). Schools also act as a buffer zone against life adversities and provide a safe place to vulnerable children facing challenges in homes such as poverty, neglect and family chaos impacting negatively on children's development and educational outcomes (Volpi 2002, Taggart 2010).

Schools perform several roles in children's life above and beyond education. However, this does not suggest that schools are the only places for learning and development. In countries where attendance at school is not enforced by state laws, many children do not attend school and still they learn to survive in a given social environment (Amury and Komba 2010, Ennew 2003). International comparisons of children's learning also shows that attending schools is not making much difference on learning levels of millions of children (UNESCO 2017). Children leaving schools after completing compulsory education without achieving minimum learning levels is a persistent problem even in OECD countries where school systems are highly established and sufficiently resourced (Thomson 2019). The evidence

also suggests that universal education provisions which are of low-quality and poor monitoring standards have a negative impact on children's social emotional well-being, lower life satisfaction, and higher crime rates later in life (Baker et al. 2019). Despite the failure of school education not showing impact on children's learning or high resilience of children out-of-school living on streets does not negate the importance of school as a desirable and relatively safe environment for children's learning and development. Children out-of-school are at high risk of abuse, poor health, violence, and participation in labour force (UNICEF 2018).

There are several associated benefits of children's school attendance such as parental participation in the workforce (Morrissey 2017), women's participation in the labour market (Dahl and Lochner 2012). Tsai et al. 2009), prevention of child labour force participation (Berlinski and Galiani 2007, Canelas and Niño-Zarazúa 2019), delay in early child marriage and teenage pregnancy (Birchall 2018). Schools may also be impactful in overcoming social and economic inequalities especially followed by periods of wars, natural disasters, and economic adversities (Hermanussen et al. 2018). Despite all these social and economic benefits of an established school systems, children's gain in academic attainment are the measures of school impact. Non-cognitive skills development receive less importance while judging the role of school and that is mainly due to complex nature and limitations of measuring these soft outcomes (Siddiqui et al. 2019). Evidence also suggests that teachers, especially practitioners in the early childhood education, find implementing the pedagogy of non-cognitive skills more difficult than teaching basic literacy and numeracy skills (Burchinal et al. 2015). Moreover, literacy and numeracy skills are easier to assess for determining the differences among groups or intervention impact with a higher confidence in the validity of assessment measures whereas non-cognitive skills cannot be judged to a high level of confidence in the validity of measures (Staats 2016).

In the current knowledge driven economies, school has sustained its importance and redefined its purpose to increasing human skills and capabilities so that the economies can survive through independent means and self-efficiency (Blunkett 2001). Children's growth in learning during the time spent in school has become more important than before because the performance at school is the major determinant of access to further education studies, labour market opportunities and jobs with higher wages.

1.3 Why invest in early childhood education?

Children are most vulnerable and receptive in early childhood years. These are developmental years in which children need to be prevented from harm and at the same time maximising the opportunities for their social and cognitive development. Investment of resources in early child education is a justifiable argument (Gorard et al. 2022, Campbell-Barr 2012). Establishing a school system inclusive of early childhood education can bare cost on the public purse if funded by the state government (Levin and Schwartz 2012). On average, the Department of England spends £7,000 per child annually which gives 15 hours of universal access and free meal (DfE 2020). In Punjab, Pakistan government on average spent Rs 18,000 (Rs 1= $0.004, if converted less than $100) per child annually on pre and primary education and this is excluding free meal for children in school. In Gujarat, India the government spends ₹ 39,000 (₹1 = $ 0.013, if converted $511) per child annually which includes provision of free meal in Anganwadi Centres. Despite the financial cost associated with early childhood education, there is a worldwide recognition that exposure to early childhood education in the form of school or formalised education provisions can prevent the later costs on the public welfare system. The economic cost effectiveness has been judged in relation to short to medium-term benefits gained by children from disadvantaged backgrounds (Lynch and Vaghul 2015, Krueger and Card 1994). The evidence has suggested that early education can improve outcomes such as attainment, retention in education, completion of compulsory school, and transition to non-compulsory education, which in return also prevents the state expenditure on health and medical cost, use of welfare benefits, and state cost on crime and legal system (Hillman and Williams 2015).

The evidence is clear that credit constraints faced by parents prevent children from accessing school (Lochner and Monge-Naranjo 2012), more so early childhood educational provisions as they are not compulsory and universally available in many countries (Tran et al. 2016). The studies have evaluated

that universal childcare programmes and early childhood education centres increase women's employment rates and earnings (Baker et al. 2008). Investment has been assessed in terms of cost returns which estimated that $1 spent by the state on early childhood education saved the future government spent of $3.69 (Reynolds and Temple 2008).

There is abundance of research available on the effectiveness of school in children's early years. The evidence can be synthesised in terms of geographical contexts, study designs, and models of early years of schooling implemented. A state-funded school system has an indirect cost on public purse therefore accountable to stakeholders in terms of purpose, impact, and quality of education delivered. The question regarding the impact of school in early years is relevant and has been investigated in countries where school is a universal provision and compulsory for attendance (Tymms et al. 1997, Reynolds and Teddlie 2001). The effectiveness of school is judged on relative differences on the basis of school types or controlling for age differences (Luyten 2006, Blatchford et al. 2002). Even in these contexts, the existing evidence is oddly mixed regarding the cognitive learning impact of school attendance (Huizen and Plantenga 2018, Melhuish and Gardiner 2020).

For assessing the impact of school, complex design approaches have been used in existing studies. Cognitive learning as the main outcome of the school has been examined in relation to quantity (Cliffordson and Gustafsson, 2008), regularity (Sheldon 2007, Gottfried 2010), disruption (Grigg 2012), age on entry (Dobkin and Ferreira 2010) and early or delayed schooling (Bedard and Dhuey 2006, Fredriksson and Ockert 2005). In evaluating the school impact on cognitive learning using different research designs, the evidence so far suggests no straightforward answer.

1.4 The context of Early Childhood Education in Gujarat, India and Punjab, Pakistan

Article 45 of the Constitution of India suggests providing free and compulsory education for all children, until they attain the age of 14 years. The 86th amendment of the Constitution of India recognizes the right to education as one of the fundamental rights of the citizens of India. The Right to Education Act (RTE) has been revised a couple of times since the independence; the Act (2010) provides for making education accessible to poor children by mandating all private schools to reserve 25 per cent of their seats to poor children and those from socially and economically deprived sections of the society. This provision of the RTE Act, at least in official documents, makes the private schools accountable to the state in terms of enrolments, progression and drop-out. This is over and above the right of children to get enrolled into government schools, which not only provide free education but also free lunch, known as mid-day meals to address the nutritional needs of the children. Free mid-day meals also encourage parents to get their children enrolled into the schools and ensure their attendance. However, the implementation of mid-day meal programme faced several challenges due to lack of infrastructure at school and community level.

Types of schools categorised broadly on the basis of ownership are: (1) government, (2) local body, (3) private, with government-aid, (4) private, without any aid from the government. At state-level the details of all these categories of schools are maintained by the Gujarat Council of Primary Education, Gandhinagar (also known as the office of the *Samagra Shiksha Abhiyan*). Samagra Skhiksha Abhiyan was launched by the Government of India in the year 2018-19 by combining the erstwhile *Sarva Shiksha Abhiyan*, *Rashtriya Madhyamik Shiksha Abhiyan* and *Teachers Education*, each focusing on free and compulsory education in primary school, secondary school and preparing teachers respectively. *Samagra Shiksha Abhiyan* ensures free and compulsory school education, right upto class 12, the highest level of schooling in India. In 2018-19, the number of primary (including upper primary, which includes standard 1 to 8), were 45, 315 schools, of which 2,227 are government schools, 31,502 are local body schools and 11,586 are private (government aided and non-aided). Out of these 45,315 schools, 1,392 are exclusively girls' schools. Total students enrolled in these schools during the same year were 8,675,000, out of which 40,61,000 were girls. Thus, there the sex ratio of students studying in primary schools work out to: 1:1.14 for girls-to-boys, which shows that there are equal number of girls and boys enrolled in primary schools. Dropout rates is less among girls (1.37 per cent) as compared to boys (1.42 per cent). These statistics on schools are given in the socioeconomic review of Gujarat state (2020).

Pre-school education is state funded in India in which provisions adopt the framework of holistic development of children through its Integrated Child Development Scheme (ICDS). Primary focus of ICDS is to ensure health of children (also of adolescent girls, pregnant women and lactating mothers), one component focuses on pre-school, non-formal education and preparing children for school, when they attain the age of six years. The educational component of ICDS is operated through National Early Childhood Care and Education (NCCE) policy, implemented in India in 2013, with an objective to promote "inclusive, equitable and contextualised opportunities for promoting optimal development and active learning capacity of all children below six years of age"; the education of children aged six years and above is addressed by the *Samagra Shikhsha Abhiyan* initiative. The Policy envisages for preparing children, in the age of 5 to 6 years of age, for their readiness to school, with first five years focused on survival, health and nutrition.

NCCE aims at holistic development of children by ensuring their nutrition and healthcare needs, and early learning by setting up centres, which are equipped for the same. These centres are called Anganwadi Centres (somewhat similar to Head Start in USA and Sure Start in the UK). The policy specifies for the infrastructure requirements for setting up and Anganwadi Centres and also the adult / caregiver to children ratio: It is 1:20 for children aged 3 to 6 years and 1:10 for children below 3 years of age. There are total of 53, 029 functional Anganwadi Centres in Gujarat during 2019-2020, out of which 13, 333 are in tribal areas, 4,541 in rural areas and 35,155 in rural areas. During the year 2019-2020, 152, 0000 children in Anganwadi were examined on various health parameters, under the school health programme, implying there are at least 152,0000 children registered in the Anganwadi Centres across Gujarat. Learning and interaction with children in Anganwadi Centres take place in their mother tongue / local language / local vernacular (Government of Gujarat 2020).

The monitoring of functioning of Anganwadi Centres is done online and through regular visits of officials from the Women and Child Development department of the Government of Gujarat. Private play schools / preschools, which are set up to impart education to children in the age of three to six years, are regulated by the Private School Education Act of the Government of Gujarat. The Act provides for registration and licensing of the play schools. Until now, the number of children attending private preschools was not directly available. However, the National Family Health Survey – 5(NFHS-5) 2019-2020 has recorded for the first time, the data on children attending pre-schools. According to NFHS -5, 51 per cent of children in the age-group of 2-4 years were found to attend preschools in rural areas and 52 per cent in the same age-group in urban areas (International Institute for Population Sciences, 2021)

In Pakistan, the term Early Childhood Education (ECE) has traditionally been synonymous with 'katchi', a grade prior to the first year of formal primary schooling (Grade 1), and typically aimed at children aged 3-5 years (UNESCO 2006). Currently, katchi classes are an established, yet irregular part of government primary schools. They are pushed more from the demand side by parents wanting to enrol children earlier and prepare them for primary school. To some extent, childcare needs are also catered by these schools considering that in urban setting more women are joining the workforce. The implicit assumption is that these programmes provide some early learning readiness and preparatory opportunities for their children. However, there have been efforts to gradually replace the katchi classes with more formally recognized and organised ECE programme and classrooms in public sector schools. Over time, ECE has become embedded in Pakistan's education policies, laws, sector plans and the implementation landscape. The National Education Policy (NEP 1998 – 2010) acknowledging the widespread presence of young children in schools, provisioned for ECE as a formal sub-sector. This was subsequently reinforced in the NEP 2009 which shifted the age band of primary education from 5 to 6 years, regularizing at least one year of ECE class. The formal policy accommodation of ECE in NEP 1998 was strengthened by the Education Sector Reforms (ESR) Action Plan (2001 – 2005) and the EFA National Plan of Action (NPA 2001 – 2015), incorporating targets and modest resource allocations for all provinces and areas throughout the country to support ECE as an innovation (Government of Pakistan 2020). This coincided with the first ever National Curriculum on ECE (2002), its subsequent updating in 2007 and formulation of Early Learning Development Standards (ELDS) in

2009. The NPA was developed for achieving the six EFA goals, with priority to primary education, adult literacy, and early childhood education (Khan et al. 2017).

In 2010, with the passing of the 18th Amendment to the Constitution, authority in the Pakistan education system ceased to be concurrent (federal and provincial); it was decentralized to the provinces. This long route to ECE found space in government policy, planning, budgets and governance from 2011 onwards, albeit at an uneven pace of commitment and financing. Subsequent provincial Education Sector Plans (2013/2014 – 2018, 2019-24) further deepened the ownership of ECE by including a dedicated chapter on ECE with a threefold focus: wider participation, better quality and improved governance. The two recent Punjab School Education Sector Plans (PSESP 2013-2017, 2019-24) have also shown clear commitment to ECE (with a section of both the documents devoted to ECE). The goal was reported as the need to "establish quality early childhood programmes in all primary schools in the province" vis-à-vis an institutionalization of pre-primary ECE, awareness and ECE teacher training, and expansion of ECE service provision (Government of Punjab 2014). Since 2015 the global, national and provincial endorsement of the Sustainable Development Goals (SDGs) has further deepened the ownership of the sub-sector reflected in SDG target 4.2 for early childhood education and its indicators as an intrinsic part of SDG 4 dedicated to education which is of high quality, equitable, inclusive and committed to lifelong learning.

Other efforts have also been made, illustrating a comprehensive commitment by the government. For example, the Punjab Free and Compulsory Education Act (2014) passed by the Assembly to implement Article 25-A of the Pakistani Constitution (Right to Education) for all children 5-16 years of age includes exclusive provisions for pre-school education and ECE for children aged 3 and older who are not yet enrolled in school. A key outcome of these cumulative efforts has meant that the School Education Department (SED), the key Govt. of Punjab department defining the legislation and formulating policies at primary, middle, secondary and higher secondary levels within the province has also become the apex institution for implementing ECE services in the province, as per the Punjab ECE Policy 2017. Moreover, the development of a detailed curriculum—first in 2017 in Punjab followed by the Single National Curriculum 2020—has given shape to a structured approach towards ECE pedagogy in the province. The New Deal 2018-2023 for education announced in December 2018 and launched in February 2019 by the School Education Department (SED), Government of Punjab, has dedicated a section to pre-primary education. The New Deal 2018-2023 is a landmark document for the ECE sector in Punjab, to implement the ECE Policy 2017 and upgrade the sector for predictable and improved financing. It focuses on improving institutional structures, human resources and governance systems. Therefore, in policies, sector plans and other institutional documents, there has been increasing recognition of the value of ECE and the concurrent desire to provide institutional support by the School Education Department (SED) to achieve ECE provision in the province at scale.

On the implementation side, there is a gradual shift from traditional Katchi classes to the official ECE classrooms. The clearest shift with regards to ECE can be witnessed in the newest iteration of the Pakistan Education Policy (PEP), currently being drafted. The current documentation on the forthcoming policy and the discussions surrounding it recognize ECE as one of the four key pillars of education across the country. Moreover, there is a clear-cut delineation of what is to be part of ECE and for what specific age group it exists. Thus, the age-wise ambiguity and the uneven trend of ECE programme duration are expected to be addressed in this policy.

Within Punjab, the ongoing enrolment campaigns for bringing children to school first target children in early years and expect children to first attend 1 or 2 years of ECE programming before being considered ready for primary education. Moreover, as part of a larger drive to improve the human capital potential of Punjab, the World Bank has recently launched the Human Capital Investment (HCI) Project in partnership with Punjab Social Protection Authority (PSPA). This initiative covers 11 districts, mostly spread in the South of the province, including two of the districts covered in this study. The initiative also has an ECE-specific arm, spearheaded by SED, which aims to strengthen and improve the quality of existing 3,400 ECE schools in the targeted districts, with a particular focus on improving early literacy and numeracy through reading/library corners in pre-primary - Grade 3. This further involves

leadership training of Assistant Education Officers (AEOs) and head teachers as well as engagement and training with caregivers/communities.

The HCI project is also actively engaged with the implementation of the SNC. This involves engagement with relevant stakeholders and institutions, development of a media strategy, creation of a positive and conducive environment for ECE classrooms (such as through Creating Learning Corners, providing age- appropriate infrastructure, learning materials, and other resources for early years. A variety of stakeholders are engaged to implement these new priorities. ECE service-provision, implementation, reforms, and monitoring are divided across various institutional actors in the province who consolidate and coordinate together for early years.

1.5 Who is included in the data?

Information on children's learning is mainly collected from school clusters. In countries where children's registration is ensured and enrolment is practised by law, education data is fully maintained. However, children in private schools and those excluded from state-schools are counted with sparse information (Shafeeu 2019, Thomson and Russell 2009). One of the bias in evidence on school impact is reliance on these datasets generated for administrative reasons, management of school education systems, and drawing international comparisons (Torney-Purta and Amadeo 2013). Children not attending school or excluded from schools are missing from these datasets (Goodnight and Bobde 2018). Not only children's data is incomplete, existence of many private and charity-based schools is not recognised and therefore not included in the official datasets (Goyal and Pandey 2012). Ghost schools exist as state schools which are non-existent but included as functional schools in the official records (Latif 2009).

Data digitalisation reforms in South Asian countries have made tremendous improvement in the quality of available datasets on schools and teachers (Chaudhry and Tajwar 2021). In Punjab, Pakistan School Education Department (SED) has regularised the implementation of annual school census and the aggregated school data is regularly published (Annual School Census 2021) and updated on the government websites (https://www.pesrp.edu.pk/publications). Gujarat, India does not seem to face the issue of ghost schools, as the system of school census is introduced by the Government of India with the objectives (Government of India 2020). However, information on children out-of-school, dropped out or excluded is only estimated and found in the World Bank funded projects (Siddiqui 2019, Mughal 2018). Children’s birth registration has been implemented and made mandatory in Gujarat, India and the data is linked so that children can benefit from the state-funded provisions (Government of Gujarat 2020). However, in Punjab, Pakistan children’s birth registration has been implemented in 2004 by the National Database and Registration Authority (NADRA) (UNHCR 2005) but it is not a mandatory requirement for admission to state-funded school or seeking free health/medical provisions. In absence of official data on children’s birth it is not possible to ensure that all children are enrolled in school and accessing education along with other state-funded provisions (Siddiqui 2019). A mandatory requirement to register children’s birth/death is perhaps the fundamental gap in achieving the target of primary education for all.

Summary

Schools provide a social service in the developing economies and emerging modern labour markets where household income needs, social progress and economic well-being demands workforce participation. A state level investment in the school infrastructure builds a compelling case to investigate the efficacy of school as a policy level intervention. The existing evidence on school effect on children’s learning remains unclear because of methodological limitations of clear comparisons of children exposed to school with their counterparts never exposed to school. Moreover, school as a long-term intervention cannot be distributed among selected children while their counterparts are controlled or awaited from this opportunity. There are ethical implications of setting-up a randomised control experiment. However, a quasi-experiment based on naturally occurring comparisons is possible and ethical. The natural settings give access to sufficient number of cases in each comparison bucket for a reasonable calculation of effect sizes that are meaningful for interpretation.

This study is using the opportunity of such natural comparisons in the districts of Gujrat, India and Punjab Pakistan. India and Pakistan have a shared history as one region. In year 1947, the independence movement resulted in the partition of this region in two independent countries. There has been a continuous social, political and economic struggle of existence which have delayed the focus and investment on the development of education system and infrastructure. It has been 75 years of independence and the countries have not fully met the standards and provisions for protecting children's rights to education. There have been some policies implemented to make education free of cost and accessible to all children but still a large population of children from socioeconomically disadvantaged families are not attending schools and those who are enrolled in school are likely to drop out before they complete primary school education. In Gujarat, India pre-primary and early childhood education centres have achieved a great success in setting foundations for the readiness of children's transition to formal school. The groups of disadvantaged children who are most at risk of failing the opportunity of school education are girls, disabled, living in rural settings and from ethnic or religious minority groups. Therefore, the countries have implemented measures of developing digital information and databases for schools and children.

Chapter 2: What is this new study?

This study assessed the impact of school by comparing existing samples in naturally occurring settings where children were attending school while the comparison groups included children who were naturally not attending school or were dropped out from school. This natural disruption in school attendance led to including an additional objective of assessing the amount of loss in learning for children who were previously attending schools. The recent evidence of learning loss due to school closure is inconclusive because the studies are not based on consistent learning assessments data captured at the time of school closures and reopening. However, this study has captured information on children's learning at the exact time point of school closures and re-opening.

The research questions are:

a) What is the impact of school on children's learning?
b) What level of progress in cognitive development is made by children who attend one year of formal pre-primary schooling (Kindergarten, Nursery, Reception, Grade 1) compared to those who do not?

Research questions involve the survey, measurements and interviews in the Punjab province of Pakistan, and estate of Gujarat in India. The sampling included 12 districts of Punjab and 6 from Gujarat. From each districts, 2 villages were selected and from each village 10 volunteering households were invited to participate. The enumerators were recruited from the local communities who had access to households and could follow the participants after 12 months for the second data sweep. The enumerators recruited households which have children of age 3 to 8. This study involved 90 trained and highly experienced enumerators leading to the initial sample of 1,129 children by involving 700 households (360 from selected districts in Punjab, Pakistan and State of Gujarat, India), depending on the size and population of the village. Children aged 4 to 6 (according to parental reports of children's age) were assessed and parents were interviewed regarding household socioeconomic conditions, reasons for school choice, children's general health and interest in attending school, and experience of access to their children's education during lockdown.

Children's assessment selected for this study is International Development and Early Learning Assessment (IDELA) which is developed by the organization Save the Children. IDELA has been adopted in 32 countries for assessing children's learning and development. The test has been translated in several languages. There are nearly 12 studies published in which this instrument has been used. The nature and research design of studies vary. However, there is evidence that showed IDELA was successfully implemented on children, and the items in the four major learning domains clearly demonstrate children's early years of development and learning profile (Halpin et al. 2019). We piloted IDELA face-to-face and as well as remotely through mobile video call. We selected the most appropriate features of the assessments that could be implemented remotely using mobile phone and internet technologies.

2.1 The study design

This project was an opportunity for us to investigate the importance and function of school in children's life in two largest regions of Punjab, Pakistan and State of Gujarat, India. The study is a comparative investigation of children's learning outcomes at age 3 to 8 years of age. We assessed children in this study regardless of their school enrolment status so that we can compare the learning levels and gains of children who attended schools with those who had not attending any school. This comparison carefully matched children based on their family socioeconomic status, family size, parental education, access to schools and regional characteristics. The analysis of these factors gave us indication of differences among children and their learning patterns and how much early years school education can determine children's cognitive and social emotional learning.

This is a natural experimental design where children included in the sample are of comparable age and household socioeconomic characteristics in both categories of 'enrolled in school' and 'not enrolled in

school'. This unique and naturally occurring phenomenon of not enrolled and/or dropped out from school exists in poor countries. For the research purpose children who were not enrolled in school were considered to have never experienced any formal learning environment and they form a clean group for comparison. Children enrolled in school were considered attending school and have experienced formal learning while children who dropped out from school discontinued formal learning. The sample included from both countries gives us a reasonable number of cases for assessing if enrolment (attendance) in school contributes any gains in children's learning. The analysis estimated the effect of formal school attendance and identified the determinants in school enrolment status, school types, and family characteristics, which control children's cognitive and social learning outcomes.

This study is a longitudinal design in which same households were followed and children assessed at the baseline and after the gap of 12 months. All children were assessed on a standardized measure, irrespective of their school enrolment status. As a natural experiment there were no controlled conditions introduced and in each data sweep we recorded the changes as they naturally occurred or changed with time. For example, some children who were not enrolled in school in the first data sweep were found attending school in the second data sweep after 12 months. This was a natural change of status recorded as truthfully as possible and an important information for analyzing the patterns of access to school and perceived appropriate age of a child when their parents decide to enroll their children to school.

A natural disruption in this study was the school closure due to Covid-19 global pandemic. School closures in both countries were announced in the last week of March 2020. The state governments imposed strict lockdowns with travel restrictions and gradually social distancing measures were imposed. We developed new protocols for children's assessment using mobile phone technologies and after seeking advice from the advisory committee, the project leads in Gujarat and Punjab conducted a new cycle of pilot tests. The pilots were successful in using the mobile and internet technology. We found that access to internet connection did not really pose any major challenge to our modified remote assessment and household plans. The internet coverage was very good in Gujarat, India and Punjab, Pakistan. However, access to mobile devices was a barrier because very poor families sometimes do not possess a smart phone.

We formally recruited and trained enumerators in Gujarat, India (N=12) and Punjab, Pakistan (N=30) and conducted two online workshops providing training to the enumerators for collecting data using the mobile technology (instead of face to face). This was a careful selection of people who had access to a wide range of populations in their communities and could conduct this data collection exercise using mobile and internet technology. Most of the enumerators were highly skilled in conducting surveys and had prior experience of collecting research data from children. The data collection process did not require any prolonged visit to households or face-to-face interaction with parents and children (there were brief contact visits with social distancing just to recruit disadvantaged participants with not mobile phones). This process mitigated the high risk to health. However, to ensure that the enumerators were secure from catching or spreading infection we have taken additional measures of providing extra mobiles with internet connection so that the enumerators could temporarily share this hotspot with the households who did not possess mobile and internet. Moreover, we provided hand gloves and face masks / the PPE kit for all enumerators, in case they had to reach a community or household with limited mobile and internet access. The enumerators agreed to these protocols whenever they contacted hard to reach communities. We used Whats App mobile applications as an additional tool to maintain contact and communication with our trained enumerators. There were two Whats App groups where the enumerators were in touch with us and could ask and share information remotely and while they were on the site for data collection.

Timeline

January-February 2020:	Pilots in India and Pakistan
March 2020:	Pandemic leading to school closures in India and Pakistan
April 2020:	New phase of pilots assessing the feasibility of remote assessments methods
May to June 2020:	Online workshop for enumerators. First data sweep in India and Pakistan. Schools were close during this time
September to December 2020:	Schools opened in Pakistan for two months but remained close in India.
January to March 2021:	Children in both countries attended online learning wherever possible
April 2021:	Online workshop for enumerators. Chasing the households and sample recruited in the first wave
May to June 2021:	Second data sweep using mix of online and face-to-face assessment methods

2.2 Child assessment measures

International Development and Early Learning Assessment (IDELA) is a standardised assessment tool widely used for assessing learning development of children 3 to 8 year old. The study modified the assessment measures under extra ordinary circumstances during COVID 19 lockdown restrictions. We curtailed the assessment by eliminating the exercises which required the child to perform physical activities such as completing jigsaw puzzles, sorting shapes, writing their names, drawing, and hopping. The loss of construct validity of the instrument was inevitable in the changed circumstances, but we minimized the impact. The abridged version reduced the assessment time by 10 minutes. We encountered various stages in the decision-making process, beginning from delaying the activity for a few weeks, to giving up the whole project in the third week of lockdown, and then to restarting the project with all new plans and procedures. We invested a lot of care, planning, discussion with advisory committee and piloting of our current plan. We introduced measures of protection against health risk. We provided a lot of support to our enumerators in the fieldwork process and made the process flexible and easy for data entry. The test is individual administration for each child. The original test has 22 items, which cover the following four domains of learning and development in early years.

Table 2.1: IDELA domains and subdomains

Emergent Literacy and Language	**Emergent Numeracy**	**Social-emotional Development**
*Print awareness	Comparison by size and length	Peer relations
Expressive vocabulary	Number identification	Emotional awareness
Letter identification	Classification/ Sorting	Empathy
*Emergent writing	Shape identification	*Conflict resolution
Initial sound discrimination	Simple operations One-to-one correspondence	Self-awareness
Listening comprehension	addition and subtraction	
	*Jigsaw	
*Executive Function (short-term memory and inhibitory control)		
*Approaches to learning		

Note: Domains marked with * were excluded from the assessment due to remote implementation methods.

We assessed the feasibility of implementing IDELA on children aged 4 to 8 years. This involved administering the test on individual children and assessing the following measures:

- Average time to administer the test per child
- Level of difficulty for each item
- Suitability of sequence for the items and sections
- Feasibility of using materials
- Children's level of engagement in the test
- Any implementation challenge or barrier for parents, children and assessor

The test administration involved the following steps in the same sequence:

1. Test was one-to-one administration in which individual child was assessed.
2. Test could be administered remotely and face-to-face in home settings.
3. Test administration involved an assessor, a scorer and the identified child.
4. The assessor interacted with the child throughout the process while the scorer observed and scored each item.
5. The assessor recorded the time spent on individual test administration.

The test materials were already prepared and packed in a small test-kit, which included the following items.

1. Original copy of the test
2. Score sheets for 10 tests
3. Two cards for size comparison
4. One card for shape identification
5. One card for number identification
6. Two cards for addition and subtraction
7. A picture card of a child with crying face
8. A card with printed story text so that the assessor could read it to the child (only for the assessor)
9. A card with numbers printed to test child's term memory (only for the assessor)

The tests were prepared well before time and the assessor practiced the activity on four adults (who pretended to be 5 years old) before the test was administered on children. This practice session on adults helped the assessor in familiarising with the test content and be able to implement each item with sequence and fluency as expected in a standardised protocol. In the actual training of assessors and scorers, this practice were followed on colleagues or volunteering adults. We implemented these steps using remote means using mobile video calls and zoom sessions.

The test administration was not interrupted at any stage and sequence in the sections and items was followed according to the standardised test protocol. No child showed any sign of boredom with test activities, which could have interrupted the test. In one case, the identified child showed lack of engagement earlier on and after initial five minutes of our efforts for engagement in the test activities, we stopped the activity. The pilot phases identified that the children with difficulties in speech, language and communication and had a delayed start in speaking since enrolled in the nursery. In home settings, we obtained this from parents who could give indication of children's ability to communicate clearly or face difficulty.

2.3 Literacy and Language

In the original test this domain includes six activities (subdomains): Print awareness, expressive vocabulary, letter identification, emergent writing, first letter sound identification, and listening comprehension. We excluded print awareness for this pilot in order to reduce the test administration time.

Expressive vocabulary: This is one-to one correspondence in which the child was asked to tell names of items, as many as they can, we buy from grocery shops. Children were also asked to tell names of animals as many as they know. The frequency of grocery items and names of animals told by each child were recorded.

Letter identification: Each child was shown a grid of print letters in English on an A4 size card sheet. There were 20 capital alphabets. The assessor asked each child to say the letter, which the assessor pointed. The sequence of letters were right to left (E to I). For each correct identification of the letter (sound or name of the letter) score 1 was given. Where the child wrongly identified the score of 0 was recorded. If the child refused to tell said, "I don't know" 999 was recorded.

E	T	A	N	I
O	S	H	R	D
L	C	U	M	F
G	W	B	Y	P

This letter identification chart was adapted according to Gujarati and Urdu.

First letter sound identification: This item was one-to-one correspondence. The activity involved saying a word involved and asking a child identifying the initial sound by matching with three other words said by the assessor. There was one example activity for practice and three actual sound identification tasks. The scoring was 1 (for correct identification), 0 (for incorrect identification), and 999 (for refused or I don't know).
We did not face any problem in conducting this item. The assessor gave clear instructions and used one practice to model sound. Sometimes children rushed to identify the first sound without listening to the three words carefully. The assessor asked children to stop and wait for words to match initial sound.

Listening comprehension: The mouse and the cat story was read from the story card. The story was read as it is written in the test. The assessor added emotions to make the story interesting for children. There was no change in wording. The questions were also read as they were written in the test. In the Guajarati and Urdu version, the story and the following comprehension questions were literally translated and read to the child. There was no problem in conducting this activity. Children enjoyed listening to the story and most of them were very good with listening comprehension. The scoring was 1 (for correct answer), 0 (for incorrect answer), and 999 (for refused or I don't know). The test required to score children's persistence and engagement this activity, which the scorer did instantly as she observed.

2.4 Numeracy

In the original test this domain includes six activities: Comparison by size and length, number identification, simple operations, classification/ sorting, shape identification, and addition and subtraction. There was no change implemented in this section of the test.

Comparison by size and length: This item has two picture cards (as in stimulus file). We used the coloured prints of shapes as available in the pack of stimulus and laminated the prints as two separate cards.

The child was first shown the card with three sticks and the assessor asked to point finger at the longest stick and then asked pointing finger at the shortest. Once the child answered, we showed the second card with three circles. The assessor asked to point finger at the biggest circle and then asked pointing finger at the shortest circle.

The scoring for both items was 1 (for correct answer), 0 (for incorrect answer), and 999 (for refused or I don't know).

Shape identification: This item involved identifying shapes printed on a card (as in stimulus file). The assessor asked child to identify circle, rectangle, triangle, and square on the card. The child was given instruction to point finger as they were asked.

There was no example activity for this practice. The scoring was 1 (for correct count of number), 0 (for incorrect count of number), and 999 (for refused or I don't know).

We found that the assessor conducted this activity slightly different from the instruction given in the test. The assessor pointed finger at shapes, one after the other, and asked the child to say names of the four shapes. This was a mistake. In the second pilot, we will be careful and will strictly follow the instructions as given in the test.

Number identification: Each child was shown a grid of print numbers in English on an A4 size card sheet. There were 20 numbers in a random order. First two lines of number were single digit and the last two were double digits. The assessor asked each child to say the number, which the assessor pointed. The sequence of numbers were right to left (2 to 7). For each correct identification of the number, score 1 was given. Where the child wrongly identified, the score of 0 was recorded. If the child refused to tell said, "I don't know" 999 was recorded.

2	4	10	5	7
9	6	8	3	1
13	17	14	19	16
15	18	11	12	20

The number identification would remain the same in the Urdu version, but the Gujarati version had digits in Gujarati language. The digits and their sequencing remained the same as in the original test.

Simple operations: This item was one-to-one correspondence. The activity required small objects for counting. We used a set of 50 small balls kept in a box. Children were asked to pick balls from the box according to the number said by assessor and put them aside. Three times the assessor asked to pick balls and each time it was a number according to the test. We used exactly the same numbers (3, 8, 15) in our instructions as mentioned in the original test. There was no example activity for practice. The scoring was 1 (for correct count of number), 0 (for incorrect count of number), and 999 (for refused or I don't know). The test required to score children's concentration and motivation in this activity, which the scorer did instantly as she observed.

Addition and Subtraction: This item has two picture cards (as in stimulus file). We used the coloured prints of shapes as available in the pack of stimulus and laminated the prints as two separate cards.

The child was first shown the card with two bikes and was asked if you put two more bikes in the picture how many would there be altogether? Once the child answered, we showed the second card with three apples and asked what you take one apple away how many apples would be left? The scoring for both items was 1 (for correct answer), 0 (for incorrect answer), and 999 (for refused or I don't know).

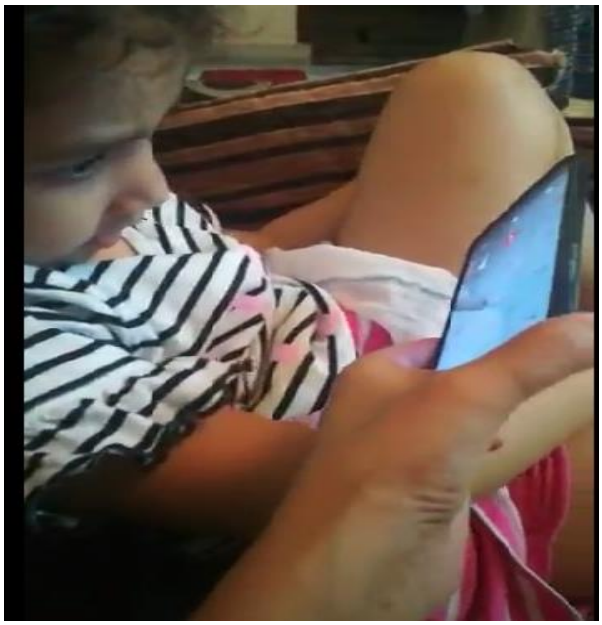
2.5 Social emotional development

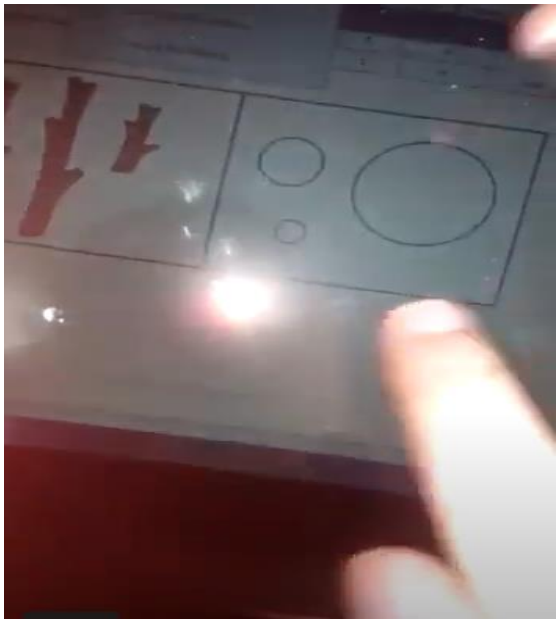
Social emotionald development was assessed in three sub-domians of self-awareness, social bonding, and recogntion of emotions. The items for these three sub-domains were implemented according to the test protocol guidelines.

Self-awareness: The test started with the items of self-awreness and provided an opportunity of a child's introduction with simple questions. This was a one-to-one correspondence asking direct questions about children's self-awreness about their name, age, gender, closest relationship, name of their city/village and country they live in. The child response was recorded as right, wrong or no answer.

*Social bonds (friends):*This item measures social bonding of children with ther age equivalent peers. This gave an indication of children's social behaviour with peers as who they consider their friends and like to play with. Children were asked to name their friends and the assessors simply counted the number of friends named.

Recognition of emotions (empathy): A sketch of a child crying was shown and the assessor asked a child how this child is feeling in this picture. The test guidelines were followed in accepting the correct response where a child clearly identify the feeling or emotion (sad, unhappy, gloomy, painful, hungry, worried, scared etc.). If a child said 'crying', 'screaming,', 'laughing' etc. it was marked as a wrong answer because these indicate actions rather than recognition of emotion or feeling. The child response was recorded as right, wrong or no answer.





2.6 General behaviour

The assessors scored child's general behaviour after the completion of the test. This was assessor's observation of child's attention to the test activties, confidence in responding to the questions, concentration given to the instructions and tasks, engagement, interest and motivation throught the test activity. This was mainly the assessment of children's attitude towards learning activties as observed during the test.

2.7 Household indicators

The household context of children's early years life provides a broad range of factors that show important links to their development and life-long outcomes. We consulted existing literature on early childhood development studies conducted in LMICs (Barid et al. (2011), Baker, et al. (2019), Fleisch, and Shindler (2007), Liu et al. (2010) Girard and Farkas (2019), Albagli and Rau (2019), Abufhele, et al. (2021), Narea, et al. (2020) Thiveos (2014) and Man and Cao (2021). We screened a wide range of household factors that were found as key determinants of children's access to school and cognitive

learning. We also consulted household factors and instruments from ongoing Annual Survey of Education Research (ASER) which are standardized surveys of data collection on children's learning outcomes and family background characteristics. In the second stage, we narrowed our selection of factors based on feasible measures that can generate most accurate information in the least amount of time and resources.

The study used the following factors in the household category:

- Socioeconomic factors (per capita household income, household assets, state-benefit allowance, employment status, family size)
- Parental factors (age, nutrition during pregnancy, medical drugs intake during pregnancy, literacy and numeracy ability, number of children, pre-term birth, years of schooling, working status in first year of child's birth, hours worked)
- Demographic factors (indigenous descent, urban/ rural, language spoken at home, migrant status, religion, ethnicity/ caste, family unit (single or joint)
- Child factors (sex, age, disability, live with both parents, birth weight, months breast-fed, nutrition, attend school, school type attended, measure of infant health at birth, home/hospital birth, inoculation at birth)

The first household survey collected a larger set of data while in the second wave we recorded information that could have change and influenced children's learning outcomes in 12 months. For example, school enrolment, school type, and parental occupation status, parental income could vary and determine our outcomes of interest. We selected the following household factors and the measures.

Table 2.2: Household measures

		Measures		Records	
		Categorical	Numerical	Wave 1	Wave 2
Demographic factors	Household minority status in religion, ethnicity, tribe or caste	✓		✓	
Parental factors (both parent/carer)	Age in years	✓		✓	
	Total number of children (ever had) between age 0 to 16 years		✓	✓	
	Ever attended school?	✓		✓	
	Highest class attended		✓		
	Working Currently	✓		✓	✓
	Occupation Category	✓		✓	✓
	If employed, then monthly income in Rupees	✓		✓	✓
	Parental awareness about children's learning			✓	✓
Family assets	House ownership	✓		✓	
	Type of House	✓		✓	
	Type of Floor	✓		✓	
	Toilet Facility	✓		✓	
	Electric connection	✓		✓	
	Solar Panels	✓		✓	
	TV	✓		✓	
	Refrigerator / Fridge	✓		✓	
	Gas Cylinder	✓		✓	

	Electric Fan (Pedestal / Ceiling)	✓		✓	
	Computer / Tablet / Laptop	✓		✓	
	Internet Connection	✓		✓	
	Mobile Phone	✓		✓	
	Telephone	✓		✓	
	Car	✓		✓	
	Motorbike	✓		✓	
	Cycle	✓		✓	
	Livestock, family animals, poultry	✓		✓	
Child factors	Child's Date of Birth		✓	✓	
	Child's Age		✓	✓	
	Does the child have any known disability	✓		✓	
	Sex of the child	✓			
	School Enrolment Status	✓		✓	✓
	Reasons for drop out / never enrolled	✓		✓	✓
	Class / Grade currently enrolled	✓		✓	✓
	Institute Type	✓		✓	✓
	Medium of Instruction			✓	

2.8 Narrative interviews and observations

All data are collected in homes of volunteering respondents. The enumerators and country lead researchers collected observations and interviews with children and parents. The home observations were recorded as field notes in which researchers informed their general perceptions of home environment, living conditions, response of parents to children's assessments and school education.

We interviewed 55 parents in the household samples. We followed general guidelines on interviews of parents in which we focused parents' feedback on children's school attendance or lack of it. We allowed parents to give in-depth details on the challenges barriers and facilitators they experienced in accessing education for their children. We were aware and very careful in discussing sensitive topics. Opening details of financial, social and cultural challenges in life can be difficult topics in conversation. The choice of sending a child to school or not is mainly determined by socioeconomic barriers. Parents accepting that poverty implies their lack of ability to provide best for their child and enforced them to send children for work rather than to school can be embarrassing. We approached these discussions very carefully and only where there was a mutual trust of sharing information with the interviewers.

We interviewed a sub-sample of 30 volunteering children aged 4 to 8 years old (18 girls and 12 boys). This group included 10 children who were school dropped out or never attended school and 20 children were attending school. These short interviews were conducted whenever there was an opportunity talk to a child with consenting parent. These interviews were informal conversations with children asking them friendly questions on their experiences of life and school. Children dropped out or not in school were asked about their awareness of school and their general life experiences. These narrative interviews are not representative of all children's views about school, but they indicate children's interesting understanding of learning, school, and success in life.

2.9 Enumerator Testimonials

I conducted surveys through WhatsApp video call and in-person at some places in rural areas where internet was not available. Children were able to understand and concentrate on the assessment both

virtually and in-person. They particularly enjoyed the game-like questions such as letter identification, shape identification and were thoroughly engaged. Some parents were hesitant in the start. They were reluctant to share household information so I explained the role of the survey and promised them confidentiality. However, most parents were cooperative with us during the survey and also encouraged their children to take the assessment.
Muhammad Saleem
Enumerator, Bahawalpur District

I took assessments from children mainly through Whatsapp in my community. Only in a couple of cases where I had to find out-of-school children, I did in-person surveys while following strict SOPs. Children enjoyed doing the assessment and were quick to understand questions. Except in a couple of cases, I did not have to repeat the questions. Parents were cooperative as well, but I had to explain the survey to them first and why this data was collected. I also noticed that parents in the city were keeping children busy during the lockdown phase with the schools closed. As per instructions, I also covered equal number of girls and boys.
Umar Anjum
Enumerator, Multan District

I took a few virtual pilot surveys in Bahawalpur and Lahore and monitored the entire survey remotely in all three districts. Overall, majority of the surveys were conducted through Whatsapp call. The stimulus cards and the short length of the assessment were effective in keeping children engaged. Most children were able to do well on the literacy and numeracy sections as this is also covered in ECE curriculum. Children in general were not shy towards the enumerators as they often belonged to the same community and that lead to a generally friendly environment. Similarly, while some parents were initially hesitant about sharing household information, they cooperated with the enumerators and actively encouraged the process.
Hamza Sarfraz
Field Supervision, Pakistan

The AESAS survey has set a positive precedent for education assessments for early years to be conducted via WhatsApp video call. Contrary to our apprehensions and concerns, the children demonstrated ability and willingness to participate in this mode of assessment which is particularly interesting as children from this age group (3-8 years) are not generally easy to engage. With the support of their parents, children sat through the entire assessment and responded to the enumerators as they saw the items appearing on their mobile screens. Given that AESAS is a longitudinal research, it would be exciting to go back to the surveyed children and households one year later and track any measurable differences in their outcomes. I am sure the children will be equally excited to have us back!
Saba Saeed
Program Co-Investigator, Pakistan

I undertook the survey work during June – July 2020. Largely, the assessments were done in Anand district, rural areas. Most of my assessments were face-to-face. My experience of working with children reveal that initially, children exhibit slight hesitation but once a rapport is developed, they show very good involvement in the activities. They seemed to exhibit better cognition about subtraction rather than addition. Children had a very good clarity about the food items brought by their mother from the market. Children showed good involvement in story activity. When I would visit the same locality to assess other children, the ones whom I had already assessed would recognize me and ask me for more stories.
Arti Parmar
Enumerator, Anand District, Gujarat, India

I conducted assessments of using WhatsApp video calls in Surat city. Online assessment proved quite convenient – both to me as well as to the parents of the children. My sample being from the urban area and that too, a large cosmopolitan city, all households were equipped with mobile phones and computers / laptops. All the children assessed by me were already attending online classes because of the pandemic. Children exhibited interest in activities involving the use of play cards. However, it was

challenging to hold child's interest till the last activity of story-telling. Moreover, they seem to lose their concentration while talking with them about their friends, names of animals, food items etc.
Tasneem N
Field Supervisor and Enumerator, Surat District, India

Assessment of children was a very interesting activity. I undertook assessment largely in Bharuch rural but also did a few in other districts. Use of WhatsApp video call helped in assessing children all across Gujarat, irrespective of physical distance. Children enjoyed most activities and showed great enthusiasm in listening to stories and answering questions. However, it was observed that because of the lockdown, children were not attending school and hence they were gradually losing interest in studying. However, parents were putting in their efforts in keeping their child abreast with the curriculum of the school. In most of the cases, both – children and parents felt that the assessment got over too soon and asked "just this? We want you to do more such activities with the children". Children enrolled in Gujarati medium were found to identify alphabets both in English and Gujarati. Rural households were reluctant to get the assessment done over a video call.
Pathin Majmudar
Field Supervisor and Enumerator, Gujarat, India

I undertook assessments in Surat district – both rural and urban. Urban children were found to be relatively less hesitant to talk with strangers compared to the rural ones. Nature of their house and number of family members influenced the concentration of children while taking the assessments. Children in rural area gave names of locally found animals and vegetables / fruits / food items, implying better cognition whereas urban children had a wide vocabulary. Most children had difficulties understanding the sad feeling but were very clear about how to make a crying baby laugh. Children showed interest and exhibited concentration in the story-based activity. Retention of interest and concentration was a challenge in hyperactive children, more so in video assessments. By the end of assessment, children would get so comfortable that a couple of them even asked "will you come again tomorrow?".
Dr Smruti Bulsari
Project Co-Investigator, Gujarat, India

Summary

The study design is a natural experiment, and no intervention or controls are introduced. We assessed the impact of school by comparing existing samples in naturally occurring settings where children were attending school while the comparator groups elected children who were naturally not attending school or were dropped out from school. The individual child assessments were administered during home visits and video conference calls. Children's assessments and household surveys were rigorously monitored by the research teams in the two countries. Our purpose was to assess children's learning. Therefore, we used translated versions of the assessments and survey and given clear instruction to the enumerators to be flexible in adopting local language dialects in the process of data collection. Trained enumerators were local community members and they used local language while administering the test and household survey.

Wherever we had the opportunity to involve consented parents and children in the interviews we recorded their narratives for understanding the purpose of school, challenges and barriers of access to school and how learning is conceptualised with or without attending school. The analysis of this narrative data is described in broad theme and this rich thematic analysis informed our main findings from children's assessment results.

For the promotion of research evidence and maximum utility of secondary data analysis, the data generated from this study will be anonymised and made accessible on UKDS. Please contact nadia.siddiqui@durham.ac.uk for more details.

Chapter 3: Who participated in the study?

This study recruited urban and rural household samples from Gujrat, India and Punjab, Pakistan. This study involved trained and highly experienced enumerators leading to the initial sample of 1,129 children by involving 783 households from selected districts in Punjab, Pakistan and Gujarat, India depending on the population dynamics of the village and enumerators' access to the households. Table 3.1 provides descriptive statistics of the sample from both regions.

3.1 The study sample

The study was designed as an opt-in consent of parents after receiving an invitation from the trained enumerators. Parental consent included sharing information on their household characteristics and children's participation in the assessment activity. The household and children recruitment period was 12 months for which participant households consented to track them for a second data sweep. No household members received incentive in-kind or financial while the enumerators received payments and acknowledgement certificates for their contribution.

The sample from first data sweep in June 2020 achieved 1,129 children from 783 households. In the second data sweep, June 2021 we could not track 106 children as the enumerators lost contact with 53 households. The attrition constitutes 9% of the initially recruited sample. The analysis presents characteristics of the missing cases to understand if attrition leads to any threats to the findings of the study.

Children aged 3 to 8 (according to parental reports of children’s age) were assessed and parents were interviewed regarding household socioeconomic conditions, reasons for school choice, children's general health and interest in attending school, and experience of access to their children's education during lockdown.

The study sample representing two countries is presented in Table 3.1.

Table 3.1: Characteristics of the sample

Characteristics	Punjab (Pakistan)	Gujarat (India)
Households		
Urban	158	237
Rural	164	224
Total No.	322	461
Children		
Boys	307	249
Girls	309	264
Total No.	616	513
Enumerators		
Male	15	7
Female	10	13
Total	25	20

The sample is large but not truly representative of the two countries or regions because only volunteering households participated in the study. However, the number of cases in each category of the sample characteristics are sufficient for meaningful analyses.

3.2 Parents

The information obtained from household is self-reported by the participants or recorded as observation of the enumerator. Table 3.2 presents descriptive comparison of the household characteristics drawing attention to differences and similarities across two regions.

Table 3.2: Household characteristics

Characteristics	Punjab (Pakistan)	Gujarat (India)
Parents age		
Mother (average age in years)	32	31
Father (average age in years)	37	34
Parents education		
Mother	322	459
Attended school	172	424
Never attended school	150	35
Qualification		
Completed school (14 years)	130	238
Attended higher education	31	167
Missing information	160	54
Father	322	454
Attended school	254	442
Never attended school	68	12
Qualification		
Completed school (14 years)	167	279
Attended higher education	51	159
Missing information	104	16
Parents employment status		
Data sweep 1 (2020)		
Mother	322	459
Father	322	450
Mother employed	71	103
Father employed	314	448
Both parent employed	66	94
Data sweep 2 (2021)		
Mother	258	433
Father	258	422
Mother employed	18	85
Father employed	170	416
Both parent employed	13	75
Household Income Monthly		
Average (data sweep 1)	Rs 38,787	₹50, 231
Average (data sweep 2)	Rs 62,180	₹ 70,393

As shown in Table 3.2 parents from Gujarat, India have higher school attendance and completion rates as compared to parents in Punjab, Pakistan. The education gap between parents in Gujarat, India is also smaller than the education gap between parents in Pakistan. In both the countries, parental employment status drastically dropped down in 2021 due to pandemic. Household Income increased in the second data sweep in 2021 but this could be due to enumerators recording this information more rigorously than in the previous data sweep. Household income is self-reported by the participants in both data sweeps. The response rate to actual household income information is low.

3.3 Children

The study sample included a balanced sample of girls and boys from both countries. Table 3.3 presents descriptive characteristics of children. School attendance status changed from 2020 to 2021 but still 151 children remained out of school who form the basis of comparison in this study.

Table 3.3: Children's characteristics

Characteristics	Punjab, Pakistan	Gujarat, India
Children		
Boys	307	249
Girls	309	264
Children living (not living) with both parents (data sweep 1)	523 (41)	495 (18)
Children living (not living) with both parents (data sweep 2)	456 (29)	472 (15)
School enrolment status		
Attended school (data sweep 1)	436	395
Not attended in school (data sweep 1)	180	118
Attended school (data sweep 2)	487	385
Not attended school (data sweep 2)	56	95
Total	616	513

3.4 Dropouts from the study

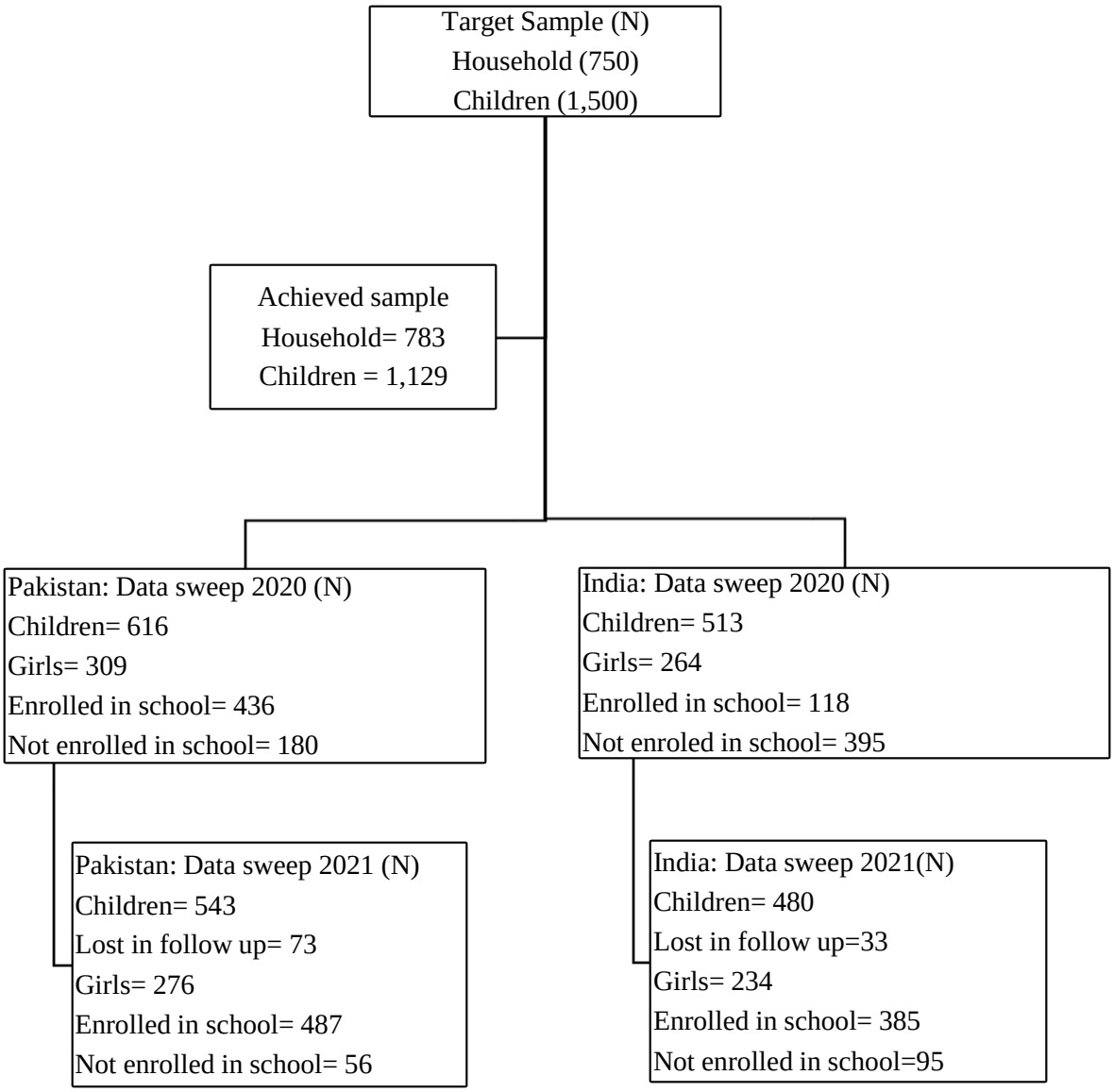
Children who could not be followed for assessment in the second data sweep 2021 were recorded as dropouts from the study which is 9% of the initially recruited sample. Table 3.4 presents characteristics of the dropouts. These children are clearly from disadvantaged families according to the average household income which is below average income for the full sample (See table 3.2).

Table 3.4: Dropped out children's characteristics

	Dropped out
Girls	51
Boys	55
Rural	34
Urban	72
Average age in months 2020	59
Disability	9
Children involved in house work	20
Average household assets (Maximum 14)	7
Average household income Punjab, Pakistan	Rs 29,000
Average household income Gujarat, India	₹ 41,500
Total	106

In the following chapter 4, we present further analyses of the obtained information. The attainment outcomes of children have been presented followed by complex analyses of regression models in predicting children attainment accounting for family background and children's characteristics.

PRISMA flowchart



Chapter 4: Analyses and findings

In this chapter we consider some aspects of the sample, and how certain background characteristics of children are related to school attendance, or not. The achieved sample consisted of 1,023 cases who took part in the first survey and assessment in 2020 and were retained in the second round in 2021.

4.1 School attendance

In two data sweeps we recorded children's school attendance as reported by their parents. There were changes to children's school attendance status in the second year when many not attending school started to attend and some dropped out from school. This change in patterns of school attendance is associated with children's background characteristics. Table 4.1 shows that children's age in years and family socioeconomic conditions can be important determinants of children's school attendance.

Table 4.1: Children characteristics by school attendance

	Attending schools	Not attending school
Girls	425	74
Boys	447	77
Rural	435	437
Urban	96	55
Average age in months 2021	77 (6 years)	63 (5 years)
Disability	40	4
Children involved in housework	191	14
Average household assets (Maximum 14)	9	8
Average household income Punjab, Pakistan	44,796	28,000
Average household income Gujarat, India	73, 352	44,143
Total No	872	151

Note: 26 missing urban/rural status

Of these, 72.8% were recorded as attending school in 2020, and 85.2% in 2021. However, this was not a simple increase in attendance over one year. A further 180 children were reported as attending school in 2021, but 53 of those who had attended in 2020 no longer did (See table 4.2). Children who stopped attending school were included in the analyses as school dropouts.

Table 4.2: School attendance in each year of the study

	School 2021	Not school 2021	Total
School 2020	692	53	745
Not school 2020	180	98	278
Total	972	151	1,023

Table 4.3 shows that children who consistently attended school were girls and older in age by months. Due to missing data on geographical settings the rural/urban patterns remain unclear. However, children who never attended school are largely from rural settings.

Table 4.3: Children's characteristics by groups

	Attended both years Group	Attended First year only	Attended Second year only	Stopped attending in the second year	Never attended school
Girls	352	377	86	25	49
Boys	340	368	84	28	49
Age in months	77	67	69	70	59
Rural	344	380	91	36	60
Urban	327	344	84	17	38
Total No	692	745	180	53	98

Overall, 49.1% of the sample were boys, and 50.9% girls – a reasonable balance. Of these, 73.5% of the boys went to school in 2020, and 72.2% of girls did (Table 4.4). Again, this is reasonably balanced. In 2021, boys' attendance had increased, with age presumably, to 84.7%, and girls' attendance had overtaken them at 85.8% (Table 4.5). Girls attending school more than boys shows that the consistent patterns of prioritizing boys' education might be changing in India and Pakistan.

Table 4.4: School attendance in 2020, by sex

	Boys	Girls	Total
School 2020	369	376	745
Not school 2020	133	145	278
Total	502	521	1,023

Table 4.5: School attendance in 2021, by sex

	Boys	Girls	Total
School 2021	425	447	872
Not school 2021	77	74	151
Total	502	521	1,023

4.2 School attendance by children's age

As expected by the nature of the household sampling, the children ranged in age from 3 to 8 at the outset, with most being aged 5 (Table 4.6).

Table 4.6: Frequency of age in years

Age	Frequency	Percentage
3	17	1.7
4	281	27.5
5	288	28.2
6	237	23.2
7	107	10.5
8	93	9.1

Children's age is clearly linked to whether they are reported as attending school (Table 4.7). Those attending school tend to be up to a year older on average. This difference will be taken into account in the multivariate analyses that follow.

Table 4.7: Mean age of school attenders in 2020 and 2021

	2020	2021
Attending school	5.6	6.6
Not attending school	4.8	5.6

Of the 14 assets such as mains electricity or a computer that children's homes could have had, some homes had as few as two, and some all 14 (Table 4.1). Most homes had 7 such assets, and the overall mean was 8.6. Given incomplete data on parental education and occupation, this is a feasible measure of socio-economic status. Those attending school had more assets on average, but the difference was minimal by 2021. But assets (as well as age) will be taken into account in our multivariate analyses.

Table 4.8: Mean number of household assets in 2020 and 2021, by attendance at school

	2020	2021
Attending school	9.0	8.7
Not attending school	7.6	8.3

Children who were reported as attending school in 2020 were ahead on those not attending school on all five of our measured outcomes. The same is true for 2021. And both groups of children, attending

school or not, improved their average outcome scores over time from 2020 to 2021. It is important to recall this. Children learn and develop both inside school and outside. Our question is - can we assess to what extent school makes a difference over and above development simply through getting older, and above what is learnt at home and from family and friends? For this purpose, we will present the results for those attending school or not in 2021.

Summary

School attendance (or not) seems to be determined by children's age and family socioeconomic background and this can further account for children's attainment. Children who never attended school are younger in age and from most disadvantaged families. This indicates that the attainment outcomes could be the results of socioeconomic differences rather than the impact of school attendance at this age of children. In the following chapters the analyses will clarify the differences in attainment and how far attainment can be attributed to school attendance once controlled for family socioeconomic status. The role of school is much more than attainment in literacy and numeracy. The next few chapters present complex analyses of the impact of school attendance (or not) on cognitive and wider outcomes.

Chapter 5: How does attending school impact on learning?

The study is a natural experiment assessing the learning outcomes in literacy, numeracy, social-emotional awareness and general behavior of children. The comparison is drawn between children who attended school against those who never attended school. The conditions were recorded at two points in time with a gap of 12 months. As a natural experiment design no manipulation was introduced for measuring the change or balancing the nature of sample. Attending school as intervention was recorded as happened (or did not) naturally and was reported in the data collection process.

At the initial stage there is a noticeable imbalance in learning of children who attended school and those who never attended school. This wide gap is associated with socioeconomic disparities in access to school which we have explored further using multivariate analysis and narrative data analysis. In the section, we report the effect sizes of the scores in 2020 and in 2021 clearly demonstrating the difference at two points in time. We report the impact of school by the effect size (Hedges' g) in four outcomes of analysis including 1,023 cases.

The results indicate a natural progress in all children's learning as they age with time, despite attending school or not attending school. In this analysis children not in school consistently progressed more than children who attended school which is the most interesting finding of this study. However, we have also discussed these effect sizes in terms of extent of which attending school impact on learning and if the gap between these two group narrows or widens over time.

5.1 Literacy

In literacy outcomes, the effect size shows that those attending school and those not attending improved their scores over time. However, the children not attending school improved their scores by more (with a standardised difference or "effect" size of 0.70 in 2020, growing to 0.75 in 2021) (Table 5.1).

The children at school in 2020 were ahead at the outset, and pulled further ahead over one year (despite COVID disruptions). The initial gap between the two groups of children widened slightly over one year.

Table 5.1: Literacy scores by school attendance or not

	Literacy score 2020	Standard deviation	"Effect" size	Literacy score 2021	Standard deviation	"Effect" size
Attending school 2021	50.69	28.88	**0.70**	63.33	25.69	**0.75**
Not attending school 2021	30.31	22.38		41.98	27.72	
Total	47.68	28.94		60.17	28.45	

5.2 Numeracy

The gap is bigger in terms of numeracy, and it grows more over time from an "effect" size of 0.79 in 2020 to 1.04 in 2021 (Table 5.2). Children attending school were ahead at outset and improved further over one year.

Table 5.2: Numeracy scores by school attendance or not

	Numeracy score 2020	Standard deviation	"Effect" size	Numeracy score 2021	Standard deviation	"Effect" size
Attending school 2021	72.27	25.79	**0.79**	81.96	21.83	**1.04**
Not attending school 2021	51.62	21.92		56.95	25.73	
Total	69.22	26.29		78.27	24.13	

5.3 Social-emotional development

The pattern continues for social and emotional development. Children attending school in 2021 are more developed in these respects than non-attenders and have made more progress since 2020 (Table 5.3).

Table 5.3: Social emotional scores by school attendance or not

	Social emotional score 2020	Standard deviation	"Effect" size	Social emotional score 2021	Standard deviation	"Effect" size
Attending school 2021	53.50	20.12	**0.37**	62.15	19.22	**0.68**
Not attending school 2021	46.00	19.60		48.61	20.78	
Total	52.40	20.21		60.15	20.03	

5.4 General behavior

The scores in Table 5.4 are somewhat subjective, based on the enumerators' judgements about the behaviour, motivation and attention of the child during the test.

Table 5.4: Observation scores by school attendance or not

	Observation score 2020	Standard deviation	"Effect" size	Observation score 2021	Standard deviation	"Effect" size
Attending school 2021	74.28	21.46	**0.09**	75.69	24.19	**0.48**
Not attending school 2021	72.28	22.57		64.85	21.74	
Total	74.44	21.64		74.09	22.43	

5.5 Overall test scores

Finally, we look at the overall IDELA test score (combining literacy, numeracy and social and emotional development, but not the observation scores). As expected from the foregoing the pattern is the same. The 2021 school attenders are ahead on test scores at the start ("effect" size 0.73), and have pulled further ahead after one year (Table 5.5).

Table 5.5: Total IDELA scores by school attendance or not

	Total IDELA score 2020	Standard deviation	"Effect" size	Total IDELA score 2021	Standard deviation	"Effect" size
Attending school 2021	58.82	21.79	**0.73**	69.15	20.13	**0.93**
Not attending school 2021	42.64	18.16		49.18	21.52	
Total	56.43	22.05		66.20	21.53	

However, before we can conclude that school is responsible for either the initial gap or the differential progress over time, we need to take the previously noted differences between the two groups into account. In particular, we need to allow for the fact that those attending school are somewhat older, on average.

5.6 Modelling the results

We created linear regression models for each of the four outcomes and the IDELA test total. Each model is used to predict or explain the 2021 result for each child using known characteristics, the 20020 result, and whether the child was reported as attending school in 2020 and again in 2021. In the first step we added the sex, age in years and sum of household assets for each child, using forward entry. In the second step for each model we added the prior score for that element of the test. Finally we added whether the child went to school in 2010, and in 2021.

The most important part of the model for observation scores is shown in Table 5.6 – how much of the variation in the outcome measure is linked to each predictor when entered in the order shown. Putting school attendance last allows it to be considered net of the impact of the other factors. As expected from the descriptive findings, the strongest predictor of the observation scores is the age of the child (R square =0.27, explaining over 7% of the variation in the outcome). SES, as estimated by the sum of household assets, plays a smaller role in the prediction. The sex of the child is not relevant to any of the models. This is not apparently a gendered issue at this age of children. Unsurprisingly, the 2020 score in the equivalent test adds to the prediction (R square =0.09). Net of these factors, school attendance (reported in 2021) is positively linked to the outcome score but only by a very small amount. Most of the differences in outcomes shown above are created by differences between the kinds of children who attend school or not, and are not chiefly associated with school attendance itself. This pattern, with slight variations, appears for all five models

Table 5.6: Model for Observation score, 2021

Step	R square	Increase in R square
Age in years	0.27	-
Sum of assets	0.32	0.05
Observation score 2020	0.41	0.09
Child went to school 2020	0.41	0
Child went to school 2021	0.43	0.02

Sex is not relevant to this model

The model creates a coefficient for every variable in it, regardless of the amount of variation it explains/predicts. This is why the first table is the more important in each model (it gives the best idea of the "effect" size, which is the square of the R value). Nevertheless, we report the coefficients for completeness (Table 5.7). Older children with more assets and higher prior scores tend to have higher outcomes. The standardised coefficient for being reported as attending school at the outset is near zero, and for being reported as attending after one year the coefficient is 0.12 – again suggesting a very small benefit from school attendance for this outcome.

Table 5.7: Coefficients for model of Observation score, 2021

Variable	Unstandardised coefficient	Standardised coefficient
Age in years	3.47	0.20
Sum of assets	1.04	0.11
Observation score 2020	0.30	0.29
Child went to school 2020	-1.82	-.004
Child went to school 2021	7.44	0.12

The picture is very similar for literacy (Tables 5.8 and 5.9). Once age has been accounted for, there is a role for SES and prior literacy score. After this there is a very small benefit from attending school at the end of the year. This shows several important things. As already explained in Chapter 4, children can learn in any context, in school or outside. In fact, much or indeed most of the progress that children make happens with age and experience, and is not related to school attendance at all (Luyten et al. 2020). The explicit teaching and directed learning that take place at school are meant to enhance this natural early progress, but may not always do so to the extent that educators fondly imagine.

Table 5.8: Model for Literacy score, 2021

Step	R square	Increase in R square
Age in years	0.35	-
Sum of assets	0.46	0.11
Literacy score 2020	0.58	0.12
Child went to school 2020	0.58	0
Child went to school 2021	0.59	0.01

Table 5.9: Coefficients for model of Literacy score, 2021

Variable	Unstandardised coefficient	Standardised coefficient
Age in years	3.42	0.15
Sum of assets	1.90	0.16
Literacy score 2020	0.41	0.42
Child went to school 2020	-1.37	-0.02
Child went to school 2021	9.87	0.12

As perhaps predictable from the "effect" sizes in the last section, the potential role of school is slightly greater for numeracy than literacy (R=0.03). This may be because the role of SES is slightly less in this model (Table 5.8 and 5.9). The coefficient for school attendance in 2021 is correspondingly higher (0.21). Two further points are methodological here. The non-school attenders were at a low level in both literacy and numeracy – a position that it might be easier to show progress from. And the tests were relatively simple, and this might mean that the more advanced learning that could be taking place in school might not be registered by the test. It may be, of course, that other factors are in play including other differences in the types of children attending and not attending school.

Table 5.10: Model for Numeracy score, 2021

Step	R square	Increase in R square
Age in years	0.44	-
Sum of assets	0.50	0.06
Numeracy score 2020	0.61	0.11
Child went to school 2020	0.61	0
Child went to school 2021	0.64	0.03

Table 5.11: Coefficients for model of Numeracy score, 2021

Variable	Unstandardised coefficient	Standardised coefficient
Age in years	3.80	0.20
Sum of assets	0.89	0.09
Numeracy score 2020	0.39	0.42
Child went to school 2020	-2.22	-0.04
Child went to school 2021	14.34	0.21

The only real difference in the model for social and emotional development is that there is a tiny benefit for those reported as attending school in 2020 as well as 2021 (Table 5.12 and 5.13). Schools are places where children learn to socialise. It is worth emphasising at this stage, school is a lot more than attainment. They are where children might learn to interact with others, including adults. Otherwise, the model and coefficients are similar to those for literacy.

Table 5.12: Model for Social emotional score, 2021

Step	R square	Increase in R square
Sum of Assets	0.24	-
Age in years	0.34	0.10
Social emotional score 2020	0.54	0.20
Child went to school 2020	0.55	0.01
Child went to school 2021	0.56	0.01

Table 5.13: Coefficients for model of Social emotional score, 2021

Variable	Unstandardised coefficient	Standardised coefficient
Sum of Assets	0.87	0.11
Age in years	1.58	0.10
Social emotional score 2020	0.43	0.43
Child went to school 2020	2.11	0.05
Child went to school 2021	7.70	0.14

The final model is for the IDELA test combined total (Tables 5.14 and 5.15). In many ways, this is the headline result. Age matters, SES matters (to some extent non-attendance at school is a result of poverty), and as in all such educational predictions prior attainment matters. Over and above those factors there is a small advantage in progress for the school attenders (R=0.02, coefficient of 0.17).

Table 5.14: Model for Total IDELA score, 2021

Step	R square	Increase in R square
Age in years	0.38	-
Sum of Assets	0.49	0.11
Total IDELA score 2020	0.65	0.16
Child went to school 2020	0.65	0.00
Child went to school 2021	0.67	0.02

Table 5.15: Coefficients for model of Total IDELA score, 2021

Variable	Unstandardised coefficient	Standardised coefficient
Age in years	2.31	0.14
Sum of Assets	1.01	0.11
Total IDELA score 2020	0.50	0.51
Child went to school 2020	-1.99	-0.04
Child went to school 2021	10.42	0.17

To understand these data better, it is interesting to see how the four patterns of school attendance (both years, first year only, second year only and never) are related to test scores in each year. Unsurprisingly the children who attended school in both years have the highest scores in all five outcomes (Table 4.16). The lowest outcomes are for the children who went to school in the second year but not the first. This probably is relevant with their age at the time showing lower average attainment. This may also explain why the premium for school attendance is rather low in terms of improved attainment, especially in 2020 (see above).

Table 5.16: Outcomes 2020 by patterns of school attendance

	Attended both years	Attended first year	Attended second year	Did not attend
Observation score	78.27	73.79	61.55	71.47
Literacy score	57.05	33.40	26.22	28.63
Numeracy score	79.81	63.81	43.26	45.03
Social emotional score	56.27	50.55	42.85	43.54
IDELA score Girls	64.70	51.80	37.96	38.56
IDELA scores Boys	64.03	46.98	36.85	39.57
IDELA total score	64.38	49.25	37.44	39.07

A year later the situation has been transformed (Table 5.17). Although the children attending school for two years clearly still have the highest scores in all five outcomes, those who attended for the second year only have the second highest scores. This is perhaps the most obvious benefit of schooling. This group of 180 children have gone from easily the lowest scoring in 2020 to the second highest in one year and are catching up with the children who attended school from the outset. Unfortunately, those who attended only first year and stopped attending in the second year lag behind those who continued

but just above those never attended school. Those who have never attended school now generally have the lowest scores. School matters.

Table 5.17: Outcomes 2021 by patterns of school attendance

	Attended both years	Attended first year	Attended second year	Did not attend
Observation score	77.31	64.13	69.46	65.25
Literacy score	66.89	43.49	49.64	41.16
Numeracy score	85.28	61.54	69.20	54.46
Social emotional score	64.39	51.67	53.53	46.95
IDELA score Girls	73.50	50.32	57.56	49.56
IDELA score Boys	70.82	53.94	57.33	45.48
IDELA total score	72.19	52.23	57.46	47.52

5.7 Are children learning equally in Punjab, Pakistan and Gujarat, India?

The study included samples from Punjab, Pakistan and Gujarat India where provincial governments have taken policy initiatives for the improvement of early childhood and primary education. The cross-country comparison needs to be interpreted with great caution because the samples are not random or true representation of the populations. Moreover, the baseline characteristics do not match in terms of children's age and family socioeconomic status. See table 5.18.

Table 5.18: Country comparison

	Gujarat, India	Punjab, Pakistan
Girls	247	275
Boys	233	268
Rural	253	278
Urban	227	239
Average age in years 2021	5.35	6.14
Children enrolled in school 2021	385	487
Children not in school 2021	95	56
Average IDELA score 2020	60.97	52.42
Average IDELA score 2021	71.50	61.51
Average household assets (Maximum 14)	9.7	6.9
Average household income Pakistan (Indian rupees)	44,796	28,000
Average household income India (Pakistan rupees)	73, 352	44,143
Total No	480	543

In the cross-country comparison we select overall IDELA score for only those children who attended school both years (N=692). This effect size shows learning at two points in time with a gap of 12 months for those who attended school throughout this period.

Table 5.19: Country comparison overall IDELA scores

	IDELA 2020	Standard deviation	"Effect" size	IDELA 2021	Standard deviation	"Effect" size
Gujarat, India	65.87	18.04	**0.15**	77.87	16.61	**0.59**
Punjab, Pakistan	63.00	18.79		66.97	18.26	
Total	64.37	18.44		72.18	18.30	

It is clear from the differences in the effect sizes that children in Gujarat, India have progressed in learning more than children in Punjab, Pakistan. During the period of pandemic, children in pre-primary school experienced a great disruption in attending school. In Punjab, Pakistan schools were closed and

remote education was implemented through online classes and TV educational programmes. Pre-primary education initiatives were not rigorously implemented in Punjab, Pakistan. However, in Gujarat, India early childhood center workers continued home visits and weekly meetings with children and families. In the rural areas of Gujarat, India the early childhood centers continued providing health and nutrition provisions at a community level.

In the regression model children's age in years, sum of assets and prior attainment explained later attainment. Adding country does not explain any variation in the attainment outcome (R=0.00, coefficient of 0.30). The surface differences between India and Pakistan are all explained by background.

Table 5.20: Country as a predictor in the model for Total IDELA score, 2021

Step	R square	Increase in R square
Age in years	0.30	
Sum of Assets	0.36	0.06
Total IDELA score 2020	0.43	0.07
Country	0.44	0.00

Table 5.21: Coefficients for model of Total IDELA score, 2021

Variable	Unstandardised coefficient	Standardised coefficient
Age in years	4.62	0.33
Sum of Assets	0.48	0.07
IDELA total score 2020	0.39	0.40
Country	12.14	0.30

Descriptive analysis of outcomes from 2020 clarify if exposure to school by attendance show any meaningful patterns. Children who attended school both years were clearly ahead in Gujarat, India and Punjab, Pakistan. The lowest outcomes are for the children in Punjab, Pakistan who went to school in the second year but not the first. This probably is relevant with their age at the time showing lower average attainment.

Table 5.22: Outcomes 2020 by patterns of school attendance

	Attended both years	Attended first year	Attended second year	Did not attend
Gujarat, India	65.87	50.71	54.26	45.79
Punjab, Pakistan	63.00	45.87	30.23	29.31
IDELA total score	64.37	49.25	37.44	39.06

In the second year the situation transformed for these four groups in the two countries (Table 4.23). Although the children attending school for two years clearly still have the highest scores in all five outcomes, those who attended for the second year only have the second highest scores. This is perhaps the most obvious benefit of schooling. This group of 180 children have gone from easily the lowest scoring in 2020 to the second highest in one year and are catching up with the children who attended school from the outset. Unfortunately, those who attended only first year and stopped attending in the second year lag behind those who continued but just above those never attended school. Those who have never attended school now generally have the lowest scores. The patterns are consistent in both countries.

Table 5.23: Outcomes 2021 by patterns of school attendance

	Attended both years	Attended first year	Attended second year	Did not attend
Gujarat, India	77.87	55.56	62.47	53.69
Punjab, Pakistan	66.97	44.53	55.30	38.58
IDELA total score	72.18	52.23	57.45	47.52

Summary

The main outcomes of the study are children's literacy, numeracy, social emotional and enumerator's observed learning. IDELA scores present combined calculation of all these four outcomes. In all four outcomes and IDELA scores, we presented effect size differences between two groups who attended school and those who never attended school.

Descriptive findings showed that a majority of children attended school and this number increased in the second wave of data collection. There is no clear cut-off point in children's age between 3 to 8 years when they start attending schools. As the children's age advanced in months majority of children were attending school. In the second year some children also dropped out while some were never exposed to school.

The most interesting finding of the study is that all children gained improvement in learning outcomes despite they attended school or not. This means learning at this life stage is a natural process and all children can gain basic aspects of literacy, numeracy and social emotional skills. This is good news because it shows that early years of delaying exposure to school for a few months or even a year would not do much harm. However, the relative differences in the amount of learning that happened for children attended school was substantially large when compared to children who dropped out of school and those who never attended school. The effects sizes were consistently positive in all skills for children who attended school.

The findings show that attending school made a bigger difference in numeracy skills and smaller impact on literacy skills. It is perhaps that literacy skills measured in the form recognition of alphabets and sounds, vocabulary development, and story comprehension can be learned by children even if they are not taught in schools. However, children who attended school are slightly ahead in literacy and there are beginning signs when literacy gap emerges. The difference is large in numeracy skills and school effect is clear on numeracy skills. It is perhaps that numeracy skills measured in the form of recognition of numbers, comparing sizes and lengths, digit memory, addition, subtraction, names of shapes are more complex need to be taught. School in the years of development matters more for learning numeracy skills as compared to literacy skills.

The most important and the biggest effect of school was on children's social emotional learning. Children who attended school compared to those who never attended school were more self-aware, had more number of friends to play with and could recognize emotions of empathy. This shows that schools are much more than attainment and the impact of school is substantial on children's social emotional skills.

The impact of school in one year of attendance was analyzed in multiple regression models controlling for their children's age and family socioeconomic status. The results showed children's age matters, family socioeconomic status matters (to some extent non-attendance at school is a result of poverty), and as in all such educational predictions prior attainment matters. Over and above those factors there is a small advantage in progress for the school attenders

Chapter 6: What do the participants say?

A common observation was that children who had a delay in language development, sometimes struggled to communicate and engage in activities. There could be several reasons of this delay. Children from families with a high level of poverty clearly had limited opportunities for verbal engagement with parents. Many migrant workers' native language or dialect is different from what people usually speak in urban areas, including the language of instruction in schools, of the Punjab, for example. Some children who were not attending school in the daytime when both parents were working, spent long hours without the presence of an adult in the house every day. We asked parents how their children spend their time if they do not attend school. Most common activities reported by their parents were - they play in the street with other children or stayed at home locked inside spend time watching TV or looking after, or being looked after other by, siblings. This was observed in rural areas and where immigrant workers moved from rural to urban settings and lived in temporary accommodation or rented servant quarters. Most immigrant women worked as domestic helpers while men worked as security guards, drivers or domestic helpers. There were few opportunities for verbal interaction between such parents and children. When we asked a mother as a domestic helper working in 10 different homes, how she spends time with her children, she said:

> When I come back home after a long day of working in homes, I am too tired to talk with anyone. I can't talk and it is just so difficult. I can just make dinner and make sure they have eaten enough, and they have some food for breakfast in the morning as I leave home very early. On weekends I have so much cleaning and work at home.

Another said:

> There is so much to do at home. I spend all my day in cleaning, cooking and doing laundry. Children just play on their own.

We observed that many children not in schools struggled with the language of emotions and feelings. This was not because they had no empathy or sense of feeling for pain, happiness and sadness but due to lack of vocabulary to name the emotions and feelings. Most children could identify what is happiness and what makes them happy, but identifying or recognising sadness and pain was difficult for many children not attending school. However, those who attended school attributed sadness to experiences at school such as, 'when teacher shouts at me', 'my friend hit me', 'when no one plays with me'. We asked one such child what makes them sad and he said:

> My mother does not live with us here. She has left us and now gone to another city and this makes me sad. I want her to come back home.

The home environment of children from above average income groups had learning resources and materials and there was attention from parents to help doing learning activities in addition to attending school. Mothers' (usually) engagement in this process was in the form of reading stories, helping with homework, attending parent teacher meetings, and studying together. Many families also had grandparents living in the household. Grandparents were helpful for working women as they provided support for childcare when mothers were working outside. Children had stronger a social network in presence of grandparents and more opportunities for language development.

6.1 Support for schooling

Unsurprisingly perhaps, many families and children expressed support for schooling. Sending a child to school is a choice and it remains a parents' choice even after early years. However, a large number of children are now attending schools which shows that more parents are choosing school for their children. More women are joining the labour workforce in both countries which is also the reason that more children are attending school, as a kind of child-care if nothing else.

Schools provide more than learning experiences and tuition. Children can enjoy the social interactions. One girl aged 6 said:

> I had lots of friends. I used to go to school. I had many cousins to play with. When we came in the city it is better, but I don't go to school anymore and I miss all my friends and cousins who I used to play with. Here we have a TV only and I just spend all day watching dramas. There is no one to talk. School is so much fun. I have friends and we play. At home it is nice but boring.

Several families discussed the importance of formal education during the COVID lockdown. A father said:

> For very young children schools could not do much because it was difficult to use online methods for this age group. Schools are open since last five months and I have seen that children are catching up now. It is just that parents have to be consistent in sending children to school. I think that is the most important thing at the moment.

A mother said:

> I tried to keep my youngest daughter and son engaged in learning but it is very hard. I don't know the syllabus. I don't know what school wanted us to teach. They sent us things to teach but it is very hard to keep up the same way as done by school teachers. Now proper school has started.

Disruption in attending school can disconnect children and families from accessing school and leads to a permanent drop out. Most common disruption were school closure due to lockdown, mobility specially from rural to urban region, disruption in income flow, transitions in school phase, trauma/ accident or death in family, children's long term sickness.

One parent said:

> Lockdown was a big change in our lives. Our younger daughter was 3 years old and we wanted to start school but then schools were closed for new enrolments were made. My older children continued whatever form of schooling was available at that time but the younger one has not seen school and she is five now. We have applied to the nearest school and we are waiting for the invitation letter now. She will start from March session. Lockdown has delayed her school admission but I think it is for all children in the world. Children catch up very quickly. I think if all children had experienced the same then it will not just effect my child only.

A mother expressed support for schools, even in some adversity:

> In pandemic and lockdown by children really suffered. We had our family problems as well. My husband lost his job and we moved from Karachi to Islamabad. Schools were closed and were not taking new admissions. Education was disrupted. We are now very close to getting children enrolled in new school here in Islamabad but these last few months have been very difficult. I hope that children will catch up as they will start school in the March session.

Another father said:

> We got a private tutor for our children. The youngest one just continued Quran but not school learning. The older children in primary and secondary were taught by tutor during the lockdown. It is not the same as school because school has a proper structured learning. Tutoring is better for revision exercise but not for new learning. My youngest is in nursery but children in this age were not learning as they could have learned in school. Tutors don't know how to teach children as young as my daughter.

Most of these families are from urban areas, and many are of average income or above.

6.2 No support for schooling

Even in urban settings, the lowest income group who are mostly daily wage earners, immigrants from rural areas without any qualification or even school education, and those who have no stable source of income, often choose not to send children to schools. Low income can be a barrier for cheap private schools, another is the distance to primary government schools. The safety of children was a concern when free school provision was not available near home. Children's education is not a priority when income resources are very limited and there is no government provision to support children's enrolment in school. Parents expressed the following views:

> I can't leave my younger child alone at home. She is a toddler. Her elder sister looks after her. I can't afford to send them to school unless both go to school. I know my elder daughter is missing school but there is no other way. None in our family have ever gone to school. There is a school but we just don't bother. Children are happy like this.

> I have a 12 year old daughter who works now. When my husband lost job in the pandemic we had no means to support our family. He worked in the city and we were in the village where there was no work for him. We were in real difficult times after a few months and then someone asked if we could send our elder daughter to work as house cleaner and helper for a family in the city. We had no choice. I went with my daughter at first to see the family and I was very satisfied to know that they were kind people. She was not going to school anyways so living in that big city house with educated people would give her some skills. She lives in that house and we get her monthly salary in the village. This is our only means of survival. She is happy there because she is looked after well by that family. Her education finished then but at least she is happy and safe there. That's more important for me than her school education.

> School is for people who understand its value. No one in our family have gone to school and children just help their parents in farming, construction, fields and house work. Our children grow up learning these skills. We see school education is relevant for jobs in the city. Our children will never do those jobs. We don't get anything from that education from school. Our children learn from doing things with elders and then they take up those tasks themselves.

Some families, especially in rural areas, justify their decision not to use schools because they feel that what children learn in school will be of no value. These families seem to assume that their children's future will be the same as their present.

> I want my son to become a carpenter and this is how he is going to support himself and our family. School cannot help him learn any such thing. A lot of labour migrants go to middle-east on skilled jobs. No one asks if they completed school or not. We have progressed financially by working on construction sites. I want my son to join that workforce as it brings good amount of money. They ask what we know in construction of houses and buildings. These skills are learned as we saw our parents doing and this is how our children will learn. School education is for people who will work in offices.

> I am a refugee from Afghanistan. My family came to Pakistan and the only thing that helped me to survive in the construction sites was skill as plumber. As a child I worked with my father's friend and slowly I learned this work. This is not what school had taught me. I wasted my time in school whatever years I spent. I want my son to learn skills as early as possible so that he becomes financially independent. School wastes our time. I know that school opens opportunities for children but we are not in that race.

6.3 School not for all children

Parents reported several school practices and teachers' behavior which impacted on children's school attendance, ultimately dropping out of school. According to parents school and teachers encouraged children who were good in learning and therefore easier to teach while those who struggled in learning and had a challenging behavior were not supported in the school.

Teachers' response and encouragement from school can be a deciding factor for parents to continue school education for their children. Parents often held school and teachers responsible for their decisions of sending or not sending their children to school. The interview excerpts below are the examples of such voices:

> One of the daughters is very good in school and the teachers encouraged us to help her in coming to school every day. She is continuing school and we will do our best that she completes education. The older daughter was not good in getting good results. Teachers were not happy so I thought it is better to take her out from school and she could spend time in learning some other skills. Spending school fee on her was a waste of our limited income resources. She was not happy in school and never liked teachers. She now helps me at home and in the evening she spends a few hours at my friend's place in learning skills for stitching clothes. She can cook now and she could stitch as well.

> My son is very naughty. The teacher once called him a 'nalaaik' (duffer) in front of whole class. He came back home and cried all day. He said to me that the teacher doesn't like him and now other students call him names. He was not happy in school.

One of the reasons children drop out from school was that they had learning difficulties. Their school experiences were not happy, and teachers might have struggled to keep them up with peers in their class. Children struggling in school never liked going to school and gradually parents stopped sending them to school. Some parents said that schools were hostile places:

> School teacher was so unfriendly with my child. My child wasn't happy. She used to cry all day in the school. I thought that next year would probably a better year as she would be older and more clever to stay in school without crying. Then Covid came that year and she further delayed as schools were closed for admissions.

A child's mother gave her reasons for her daughter's non-attendance from school:

> Sakeena struggled and cried every morning before going to school. She is 'kamzor' (weak) in studies. We arranged for a private tuition for her but made no difference to her class results. Teachers complained all the time. I thought it is better to delay for another year and then see if we can find a better school.

Another child's father was asked why his child does not attend school and he said:

> There were lots of family problems. His mother does not live with us anymore. It is difficult for me to manage my job and his education. He was always unhappy at school. He is slow in learning and the teacher always complained about him. We changed school as well, but he never liked going to school because it was difficult for him. He is at home now and we have arranged a private tutor for him. At least he is happy now and doesn't cry every morning. We live in a joint family and there are always people around him to look after but responsibility for his school is something no one cares about. I am not able to do it myself so I can't expect others to do so. It is just so difficult to manage.

Parents told us about their children's experience of being bullied and labelled by teachers which led them to withdraw their children from school. A mother said:

> My boys is slow and he does not talk much. I know that he is not like other kids. I enrolled him in a private school thinking that it could help. We sent him to school and each day after school the teacher complaint and used words for him such as 'kamzor' (weak, slow) and 'roni shakal' (cry face). I felt sad. I then sent him to mosque for learning Quran.

Another said:

> Kids in her class always called her 'badtameez' (rude) and 'shaitaan' (naughty). Children were always quarreling in class and teachers never did anything to stop them. My daughter was called 'churail' (witch) and she used to cry all the time. Even teacher complaint that she can't read and write and she fights with other children. Once teacher said to her that she is 'nalaiq bacha' (thick child) ever in her class. That day she came home and was very sad and angry.

Others said that they could not afford the (relatively) small fees:

> I sent them to local private school. It was good but then we had to change workplace to another city and after that our financial circumstances became worse. School was an extra expenditure. More than the fee school has additional demands to fulfil. Pick and drop to school is difficult when we are both working. I take my child with me when I work in houses.

A mother of four children said:

> I am dependent on my brother's income. Sometimes neighbors and other kind people give us charity and I run my kitchen on that charity. My husband is in jail for a minor crime. And I have a few months old baby to look after. I can't even work under such condition. I have no other means to support my children. Two of them used to go to school before but now I can't pay the fees, so they don't go to school anymore. These are very hard times.

Another said:

> We decided to come to city so that we could earn some money and make a pukka house in our village. If I spend on school fees, I can't save money.

Most of these families were from rural areas. There was a lot of difference in the reported quality of early years' schools and nurseries so that even children attending them were not all receiving high quality care and education as expected. High-cost schools had a lot of resources and qualified teachers to support children's learning and there was a curriculum implemented, including assessments of children's learning. However, many low-cost nurseries were not sufficiently equipped with learning resources and qualified teaching staff. The number of children attending low-cost nurseries were quite high but it seemed that the private low-cost sector needed a lot of support and infra-structure but the same was observed in a government primary schools in the suburban regions where staff-student ratio was very high and the resources were sparse.

Children were sent to school with whatever resources parents could provide such as school uniform, a school bag and in some cases a packed lunch, however many low-cost private school and government primary schools did not have basic resources and qualified teachers to support the children. Parents with average income level chose low-cost nursery schools instead of government primary school provisions mainly because the government primary schools are not nearby. There was also a perception that government primary schools were not sufficiently resourced with qualified teachers and sending children to these schools will not support their learning. On the contrary children's early years may be damaged if they attend those schools. This perception was more prevalent among high income group where parents were both more educated and had the means to choose high-cost private schools and they could also afford the additional cost of school.

6.4 Safety

Many reasons were given by families for why they use or do not use schools. One recurring theme was child safety, which was a particular issue for families where both parents were working away from home, and for girls in more rural areas. The following interview quotations were selected to highlight lived experiences of children and their parents. These narratives explain persistent barriers in accessing school despite there is a desire for education and understanding of its life-long importance.

> I leave children at home because they are safe inside rather than on the street. I don't like the idea that they walk to school by themselves. I feel streets are unsafe for children. We can't do pick and drop service to school because we are both working. We can't afford school fees and transport services. It is a walking distance from my house to school but streets are not safe for children. I know that education can help my children in getting proper job but there is nothing we can do to help.
>
> In our village the environment is not good. Girls are not safe and that is one of the reasons that parents prefer early marriage of girls.
>
> My children are so young. I like when I see other parents sending their children to school wearing school uniforms, shiny shoes, colorful bag on their shoulders. I can see how their children will become doctors and teachers but we cannot afford any of this. Poverty is a curse on us.
>
> I prefer that my daughter has left this village and gone to live in the city as a family helper. She is living safely with an educated household. She is living a safe and comfortable life. She sends her salary to us here in the village. When she was in village she was not happy. Her school closed during Covid and her father lost his job. The year of pandemic she just stayed in house and there was nothing to do and we needed some income resource for survival. I have another daughter who is year 1 and I will wait few more years and will send her to a city family for work where at least they have a safe environment and some income to live. In the villages only rich landowners have good life. A majority is of poor people and their lives are always at risk. Going to school is a risk for girls.

A mother was asked why she does not send her daughter to school and said:

> The school is not near, and I worry if she walks to school then it is not safe for her. It is at least safe that she is at home.
>
> There are stray dogs and cows in our streets. No one cares. Once children were walking to the school and a stray dog attacked them. I fear such things can happen to my child.

Of course, staying at home unattended is not necessarily safe for young children either. One mother reported:

> We have moved to the city from a remote village. We can earn better wages here. I work as cleaner in a number of houses. When I leave home early in the morning I lock my children in the house, give them food and tea so that they are fed. My husband works as a security guard and sometimes he comes in the mid of the day to check if children are fine. All day long they watch TV. It is dangerous to leave them like this all day and I remember once my elder one tried to warm milk and he burnt his leg as he could not hold the pan properly. We took him to the emergency services and it took months to heal the wound.

In general children enjoyed the assessment activities and seen the tasks and learning games rather than test of their abilities. The interaction was kept as informal as possible and we wherever children wanted a break or talk about other things we allowed them to do so.

Children who had a delay in language development, struggled to communicate and engage in activities. There could be several reasons of delay in language in the early years but children from families with high level of poverty and deprivation clearly had limited opportunities of verbal engagement with parents. We also observed that some children who were not attending school and during the daytime when both parents were working, children had long hours spent in isolation or with other siblings without presence of an adult in the house every day. This was observed in immigrant workers who moved from rural to urban settings and lived in temporary accommodation or rented servant quarters. Mostly immigrant women worked as domestic helpers while men worked as security guards, drivers or domestic helpers. There was very limited verbal interaction between parents and children and possibly that was one of the reasons that children were behind their age in speech and language development.

6.5 Language development

Many migrant workers' native language or dialect is different from what people usually speak in Urban areas of Punjab. Children struggled to communicate in language or dialect not known to them and while not having any opportunity to learn language in school, as some were not enrolled in schools, delay in language development was clearly obvious in those children. A girl aged 6 years was asked how it was like when she was back in her village, she said:

> I had lots of friends. I used to go to school even. I had many cousins to play with. When we came in the city it is better, but I don't go to school anymore and I miss all my friends and cousins who I used to play with. Here we have a TV only and I just spend all day watching dramas. There is no one to talk.

Enrolment and attendance in school was important for children where both parents were working outside. However, where children not attending school but spent time with mother at home or accompanied her to the homes where she worked as domestic helper were also observed not having a limited vocabulary and skills for verbal communication. When we asked a mother as a domestic helper and who worked in 10 different homes, how she spends time with her children, she said

> When I come back home after a long day of working in homes, I am too tired to talk with anyone. I can't talk and it is just so difficult. I can just make dinner and make sure they have eaten enough, and they have some food for breakfast in the morning as I leave home very early. On weekends I have so much cleaning and work at home.

Busy working routines are the reality of people living in urban settings. More women choose to work means that attending schools should be essential for children rather than living in isolation and missing several opportunities of learning that are available in school. Moreover, parents are generally less aware of the importance of talk with children and this is more so for parents with no literacy. Talking with children, sharing experiences, telling stories or reading books are the activities that help children learn vocabulary and skills for communication. Parenting skills beyond caring for children's physical needs are not known to many parents. Parents playing with children was not commonly observed and informed by parents when they were asked how they spend time with their children. Most parents were busy in jobs and where mothers who were housewives could not tell more than just telling the daily chores in house. One mother said,

> There is so much to do at home. I spend all my day in cleaning, cooking and doing laundry. Children just play on their own.

School is a place which provides structured learning activities, resources, space and various opportunities for children to learn language and practice skills. Children who spend their developmental years of life in home environment with very limited learning resources and opportunities, are behind their peers who attend school in language development. There is a scope for policy initiatives to promote parental learning following the model of Head Start and Sure Start centres in the US and UK, where

parents from disadvantaged groups could be encouraged to take part in programmes to learn parenting skills where they can support children at home during their developmental years.

6.6 Recognition of emotions and feelings

We observed that many children not in schools struggled to identify emotions and feelings. This was not because they had no empathy or sense of feeling for pain, happiness and sadness but due to lack of vocabulary to name the emotions and feelings. Most children could identify what is happiness and what makes them happy, but identifying or recognising sadness and pain was difficult for many children not attending school. However, those who attended school attributed sadness to experiences at school such as, 'when teacher shouts at me', 'my friend hit me', 'when no one plays with me'.

We also observed that children living with single parent of a divorced family rationalise their sadness and pain more clearly than others. There were not many children in this category so this is just anecdotal evidence at this stage. We asked one such child what makes them sad and he said,

> My mother does not live with us here. She has left us and now gone to another city and this makes me sad. I want her to come back home.

Coping with sadness was difficult for children to express in words. It is perhaps linked with their general experience of life at this stage that they do not understand or express sad emotions or possibly they do not have much vocabulary learned to communicate about sadness and coping strategy for sadness. It would be interesting to know the difference in children's language development and their ability to recognise and identify emotions and feelings after a year.

Quality and types of early years

There was a lot of difference in the quality of early years schools and nurseries so even children who were attending, not all of them were receiving high quality care and education as expected. High cost schools had a lot of resources and qualified teachers to support children's learning and there was a curriculum implemented, including assessments of children's learning. However, many low-cost nurseries were not sufficiently equipped with learning resources and qualified teaching staff. The number of children attending low-cost nurseries were quite high but it seemed that the private low-cost sector needed a lot of support and infra-structure but the same was observed in a government primary schools in the suburban regions where staff-student ratio was very high and the resources were sparse. Children were sent to school with whatever resources parents could provide such as school uniform, a school bag and in some cases a packed lunch, however many low-cost private school and government primary schools did not have basic resources and qualified teachers to support children.

Parents with average income level chose low-cost nursery schools instead of government primary school provisions mainly because the government primary schools are not nearby. There was also a perception that government primary schools are not sufficiently resourced with qualified teachers and sending children to these schools will not support their learning and on the contrary children early years will be damaged if they attend those schools. This perception was more prevalent among high income group where parents were both educated and had means to choose high-cost private schools and they could also afford the additional cost of school.

6.7 Who chooses school education for their children?

Sending a child to school is a choice and it remains a parents' choice even after early years. However, a large number of children are now attending schools which shows that more parents are choosing school for their children. More women are joining the labour workforce which is also the reason that more children are attending school. However, in urban settings the lowest income group who are mostly daily wage earners, immigrants from rural areas without any qualification or even school education, and those who have no stable source of income, choose not to send children to schools. Income constraints is the major barrier that prevents parents to send their children to school, and the other is

distance to primary government schools. Safety of children was concern when free school provision was not available near home. Children's education is not a priority when income resources are very limited and there is no government provision to support children's enrolment in school. A mother was asked why she does not send her daughter to school and she said,

> The school is not near, and I worry if she walks to school then it is not safe for her. It is at least safe that she is at home.

Another said,

> We decided to come to city so that we could earn some money and make a pukka house in our village. If I spend on school fees, I can't save money.

A mother of four children said,

> I am dependent on my brother's income. My husband is in jail for a minor crime. And I have a few months old baby to look after. I can't even work under such condition. I have no other means to support my children. Two of them used to go to school before but now I can't pay the fees, so they don't go to school anymore. These are very hard times.

These barriers and challenges to attend school are associated with extreme poverty and lack of support network from government. However, some children from average and above average income group were also not in attending school and their parents were also not rural immigrants to urban centres. The sample does not have a large number of such children but there were some common barriers informed by parents. Mostly these children were dropout from schools rather than never enrolled.

One of the reasons children drop out from school was that they were clearly in the category of children with learning difficulties. Their school experiences were not the happy, and teachers could have found them struggling to learn and were difficult to keep up with other peers in the class. Children struggling in school never liked going to school and gradually parents stopped sending them to school.

A parent of one child said:

> He was always unhappy at school. He is slow in learning and the teacher always complained about him. We changed school as well, but he never liked going to school because it was difficult for him. He is at home now and we have arranged a private tutor for him. At least he is happy now and doesn't cry every morning.

Another child's father was informed why his child is a school dropout and he said:

> There were lots of family problems. His mother does not live with us anymore. It is difficult for me to manage my job and his education. We live in a joint family and there are always people around him to look after but responsibility for his school is something no one cares about. I am not able to do it myself so I can't expect others to do so. It is just so difficult to manage.

Children from above average income groups were mostly privileged as parental engagement in their learning process was clearly visible. The home environment had several learning materials and there was a lot of attention from parents to do learning activities in addition to attending school. Mother's engagement in this process was in the form of reading stories, helping with homework, attending parent teacher meeting, and studying together. Many families in the categories of average and above average income groups also had grandparents living in the household. Grandparents were helpful for working women as they provided support for childcare when mothers were working outside. Children had stronger social network in presence of grandparents and more opportunities for language development.

6.8 Children's view of school

All children who were attending schools reported likeness for their school as they see it as a fun place for activities and playing with other children. Going to school was also liked by these children because of teachers and rewards they get by being 'good' in the class. The following quotations reflect children's reasons of liking school.

> I like playing with my school friends. (Ayesha, age 4 years)
>
> We have a big ground in school, and we play there. (Salman, age 5 years old)
>
> We watch cartoons in school. There is music as well. We sing poems with our piano teacher. I like when we watch TV in school and play in school. Our teacher Samiya is very nice. I like her very much. (Amna, 5 years old)
>
> Miss Salma is my favorite teacher. I like her. She says I am good. I always get a star on my work as well. (Farah, age 6 years)
>
> I like school because our teacher is very nice. She reads us stories and let us play in the ground. She also makes us do drawing and painting. I like drawing and colouring pictures. (Salma, 5 age 5 years)
>
> I like school because we have a nice garden, and we play there. We have toys and computers in school. I like lunch time in school. (Ahmed, 6 years old)

Children who were dropped out of school also liked school. There were slight disadvantages for girls drop out from schools as they reported losing friends to play with while boys found more opportunities and friends to play. Some children reported leaving school because of teachers' harsh punishments. Most unfortunate and common observation was children's awareness of household poverty which resulted in their drop out from school.

> I liked school. I had friends there but I have new friends now. I play with my new friends now. We play in streets now. (Fahad, age 4 years)
>
> There were floods in our village. And our school and houses were destroyed. I didn't go back to school after that. (Farid, age 7 years)
>
> School was nice. I don't go to school because my father lost his job and we are poor now. My teacher was always asking for fees and in the end he said don't come to school if your parents don't pay your school fee. (Irfan, age 6 years)
>
> I used to go to school. My father died and there was no one to look after us. I stopped going to school. (Deeba, 6 years)
>
> School was nice because we played with friends. My teacher was not nice. She used to hit me when I was naughty. I don't want to go back there. (Shazia, 5 years old)
>
> I was in school and then we became poor. I had friends in school. My brother goes to school but I don't go. I stay at home with mum and help her. (Irum, 6 years)
>
> I help my mother. I cook and clean house. I have a younger sister who I look after and we play. I don't have any friend. We don't play outside because my mother does not let us play outside. She only let my brother go outside and play with his friends. (Sana, age 6 years)
>
> We are poor now. I liked school because I had friends. I have more friends and I play in the street all day now. (Imran, 5 years old)

> Schools are close now because of Corona. I like playing with kids in the street more than going to school. I don't like studying at school. It is boring. (Sarmad, age 7 years)

Children who never attended schools were from very poor families, immigrant background and broken families. In conversation with these children, we found an attitude of responsibility towards family and fight for survival. The following quotations from their interviews reflect their lived experience of life in which school has not played any role.

> I work in this hotel. My job is cleaning tables and washing dishes. I get paid every day and I give all that money to my mother. She works and we all have to work for money. My father has left us. The hotel owner is a very strict man. I sometime sleep in this hotel when it gets late at night. (Jabir, 8 years)

> I have to go to shop for work every morning. If I don't go to work, then we will not have enough money to eat food. My dad said we don't need school. (Adil, age 8 years)

> I work in a factory shop three days a week. When I don't go to work we play in the street and there is a water pond. I know how to swim. (Sarmad, 6 years old)

> I help my mother at home. She is always ill. I clean house and bring water from the wells. It is heavy and hard to walk with water. I play with friends when we go to wells. (Saba, age 7 years)

> I ran away from home because my father is a drug addict. He never sent us to school. He used to beat me very badly. My mother left home and we live with him now. I work in this shop now. The owner lets me sleep here. I will not go back to home because beating hurts. (Sajid, age 9 years)

These views of children explain that school is much more than attainment. Children recognise the role of school in their life through social emotional interactions, enjoyment of school activities and environment. Most important aspect of school experiences is how they perceive their treatment by the teachers. Children attending school liked school because the school is playing an important role in their life, and they feel included in the school community. Children's retention in school is associated with their overall school experienced. Children who dropped out from school had some common explanation and reasons where experiences at school made them leave education. Dropped-out children were excluded from schools mainly due to household poverty where parents were unable to afford the cost education. Most unfortunate reasons were unfair teacher treatment and punishments that children experienced in school which ultimately influenced parental decision to withdraw children from education. Children who never attended school were clearly at risk and most who were interviewed were involved in child labour.

Summary

The narrative interviews were recorded for a deeper understanding of the role of school. Children's views explained that school is much more than attainment. Most important aspect of school experiences is how they perceive their treatment by the teachers. Children attending school liked school because the school is playing an important role in their life, and they feel included in the school community. Children's retention in school is associated with their overall school experienced. Children who dropped out from school had some common explanation and reasons where experiences at school made them leave education. Dropped-out children were excluded from schools mainly due to household poverty where parents were unable to afford the cost education. Most unfortunate reasons were unfair teacher treatment and punishments that children experienced in school which ultimately influenced parental decision to withdraw children from education. Children who never attended school and specifically girls from disadvantaged families were clearly at risk and most who were interviewed were involved in child labour.

Parents need a long-term commitment to their children's education and their reported views showed that lack of state level assistance is a major barrier in fulfilling their commitment. All parents realized the importance of education for their children. However, financial barriers, circumstantial disruptions, concerns for children's safety, access to school and teachers' lack of cooperation when children struggle in school gradually make them withdraw their children from school education.

Chapter 7: Why school matters?

Learning is an ongoing process for all children. Learning begins before children are exposed to a formal school or given a structured environment for upbringing. Therefore, substantial learning takes place even for those children who never attend a formal school in their childhood years of development. However, there are gaps between the learning outcomes of children attending school or not, defined and measured in terms of literacy and numeracy. Children who attend school have opportunities to learn more (of relevance to these measures) as compared to children who do not attend school. School provides environment for learning where educational resources, social interaction with peers and teachers play an important role towards learning and attainment. Children not attending school may not meet the same level of attainment in literacy and numeracy because these skills are often taught through structured coaching, implementation of impactful learning approaches, and opportunities for regular practice, and feedback. The attainment gap widens as children grow up because children not in school usually do not have any other alternatives in catching up skills for literacy and numeracy.

Children's access to play and engagement in outdoor activities are curtailed if they attend school. Activities in schools are mainly classroom based. Children's time in school is spent on what teachers guide them and want them to do while children not attending school can enjoy more freedom and free play activities even though some of them work to earn income. Dropped out children consistently reported that their life at school was stressful and boring, and they had more fun and enjoyment after leaving school. Parents commonly reported that teachers' unfriendly behavior, strict punishments and bullying were the reasons for their children's aversion to school that led them to withdraw children from school. Some children also reported harsh treatment and physical abuse by parents which made them run away from home. Children not attending school might have slightly more agency and time for free play in their life as compared to children who attend school, but this is at the expense of losing time when their counterparts are learning and advancing in skills that are important for wider opportunities in the labour market, beyond casual jobs.

From the interviews and observations, it was evident that children (mainly boys) not attending school have more access to outdoor activities, and free time to play, earn some money and make friends. Girls experienced bigger disadvantage when they do not attend school because parents' concerns for their safety limit their access to outdoor activities and social interaction with other children. Girls who do not attend schools are home bound and likely to be engaged in work at home such as cleaning, cooking, helping household chores and looking after siblings. There are few learning opportunities and resources for children who do not attend school. However, there can be alternate means and provisions to reach out to these children for their education. Despite poverty most households had access to relatively low-cost technology such as TV and mobile phones. These alternate means can be useful tools to bridge the learning gaps between children and education where there is a complete disconnect from school.

School education is expected to accelerate learning by creating an environment of safety for all children, trusted by parents. But many dropped out children experienced a hostile school environment which became the main reason to leave school and withdraw from education. In the interviews with parents and children there was an indication that slow learners and their parents received harsh comments from teachers. This is perhaps when teachers and school staff are not trained and fully resourced to support children who need extra help, which can impact on the differential treatment of these children. School experience and teacher support can be a positive factor for retention of children. If children's school drop-out reasons are embedded in lack of teacher training and support resources at school, then perhaps household poverty is not the main factor for children losing lifetime opportunity of learning in school. This is a responsibility of the state government to equip schools with effective policies, trained staff and resources that can contribute to a positive school experience of all children and create an inclusive learning environment.

The realities of (rural) poverty are clear to see in the opportunities that children in India and especially Pakistan have to go to school or not. This is how a poverty attainment gap arises in early years and helps determine pathways in education and trajectories of success in life. Families need free school places near to their home for ease and safety. It is also worrying that parents feel that young girls are

not safe. Over and above the restrictions caused by fees, distance, the need to work, and child-care, many of the stories above suggest that parents face a learned subjective opportunity structure (Gorard and Rees 2002). The context and experience have inevitably created a kind of learner identity that either does or does not encompass schooling as a key factor. To some extent, and only to some extent, the specific reasons given for using or not using schools may be attributed rather than the primary causes. For the poorest families the need to work and so provide food and shelter for their children is the priority. All else is considerably higher up the hierarchy of needs.

Parents from low-income groups may not see that school is as relevant or purposeful if school education does not provide a return on the cost of time children spend in school. Children who work with parents learn skills which schools do not provide, and what school provides (literacy/numeracy) is perhaps not going to return to parents in the short term. The opportunities to learn skills from parents and as well as from school should be open for all children. It should not be one at the expense of the other.

School is a long-term intervention in children's life which is expected to equalise socioeconomic gaps and promote equality. Early exposure to school is increasingly focused on policies for children at risk of socioeconomic disadvantage at household level. These targets are a work in progress even in developed countries where all children attend school after a certain age. In addition to making schools effective for children's retention, attainment and wellbeing, there could be alternate methods to dispense education for children where school is not accessible, and children's involvement in the workforce is still common.

This study confirms that children make progress by learning in or out of school, and they make even more progress in school than by not attending. Sometimes the premium for school attendance seems rather low, in comparison to the progress that takes place anyway, but a careful analysis of our findings suggests that the school "effect" of attendance on attainment is there and it is relatively substantial.

7.1 Implications for policy

School is a practical approach of collective and supervised spaces for children's learning. The developing economic structures and emerging modern labour markets have made the existence of schools essential for human development and progress. In countries where schools exist but attendance is not compulsory there is segregation by poverty where children who attend school are likely to be from higher income groups. A high proportion of children not attending school are not participating in the learning that takes place in school. Household income inequality impacting on children's chances for access to education is at least partly outcome of a policy failure.

Free of cost education, accessible schools, and financially incentivising school attendance can improve children's enrolment, attendance and retention but these policies do not ensure education for all. A strategic way in which developed countries have achieved the target of school education for all is by rigorously maintaining and employing government databases on children's birth registration records. Children's right to education begins knowing their existence in the form of age, identity, and family information. A mandatory policy to officially register all children, preferably in the first few months, is the key to reaching all children and ensuring their basic rights including the right to education. In some countries such mandatory policies are linked with state incentives in the form of financial benefits given to mothers.

The informal practice of giving children to be looked-after by carers or employers needs to observe under strict laws and policy level measures. Looked-after children in India and Pakistan may be at high risk of abuse because there are no state level measures implemented for their health, safety and education.

Quality of school and experience are important factors for children's learning and retention in school. It is another failure of school policies and structure of education system that children feel trapped in four walled classrooms for the time they spend in school. Children enjoy more life and freedom in

outdoor activities which are less regulated by adults. Unfortunately, learning in school is highly structured, supervised, and controlled by teachers for a major part of the time spent in school. Policies to reduce the amount of time or number of days spent in school could be a way forward. Probably school policies should also be flexible and creative in adopting polices and interventions for children's free time and play in school (see below).

Policies must be implemented to prevent children from dropping out of school. It is most unfortunate that children have to leave education for reasons such as poverty, family circumstances, rural to urban migration, and unpleasant experiences at school. Parents' decision are led by a sequence of life events that ultimately push them to withdraw children from school education. Disruption in attending school due to hardships and change in life circumstances builds towards dropping out of education. School systems can adopt policies and mechanisms for identifying disadvantaged children who can be a school dropout. Interventions to prevent school dropouts are likely to be financial support for the family, parental counselling, trauma therapy, encouraging positive school experience for children, and providing home tutoring.

Ensuring that children reach school safely and regularly is a huge undertaking, and a majority of parents in India and Pakistan ensure this happens. Parents' engagement in child's education plays an important role because currently in India and Pakistan children's education is solely dependent on parents' choice for which they are not responsible to anyone. There are no state level consequences if parents do not send their children to school. Parents preventing, delaying or gender discriminating children from school education needs state level policy measures. Parents' need long-term commitment towards children's education and some parents need state intervention and support in fulfilling this commitment.

Kind and friendly teachers add value to children's learning experience and in return children see these teachers as important people in their life. Teachers must realise the significance of their role in children's social emotional well-being in the developmental years of life. There should be a complete ban on harsh punishments and physical beating, partly because the most likely victims are disadvantaged children who have disabilities or learning difficulties. Teachers too often fail to identify these challenges in children's behavior and response to learning. This can be addressed through teacher training needs and required teaching support available in the classroom where teachers deal with children on a spectrum of learning difficulties and behavior challenges.

7.2 Implications for practice

This research shows that improvement in children's social emotional well-being is a promising benefit of attending school. Children have more friends if they attend school as compared to those who do not attend school. Children see school as an important place to meet and play with friends which makes attending school a purposeful and enjoyable activity. Improvement in learning at this young age is perhaps an outcome of this peer engagement. In practice, children's engagement with peers can be encouraged through free play time in school or even regulated activities such as role play. Four walled classrooms and school corridors should not be the only spaces where children's learning can take place. Similarly learning for children in the early primary phase can be above and beyond basic items and materials such as books, pencils, blackboard, and wall charts. Teaching practices can be made more imaginative, creative and build in natural settings when children spend long hours in school.

Afternoon classes or second shift schools have been a popular practice to increase education chances for children who are school dropouts. Street schools for dropout children have also been established in some urban locations but these programmes and practices depend on financial support and the involvement of the community where children involved in workforce are encouraged or compensated to spare time for learning. Home tuition and Madrassahs in mosques can be other spaces for children's learning. However, they are informal and less regulated schools under expected standards of education, and do not have the wider benefits of schools.

7.3 What next in researching this area?

The alternatives to school are methods and medium of education independent of the traditional idea of physically attending school and being taught by teachers in the classroom. We do not know if there are any effective alternates of school education which are feasible for implementation and can compensate for cognitive, social and wider outcomes at least to a minimum level. Most evidence-based learning programmes and policies are school-based and implemented by teachers or trained experts. Much of the rest is lower quality research based on weak designs. Filling this gap in research could generate more possibilities of delivering education through programmes and practices that are integrated with school systems.

Natural calamities such as pandemics, floods and earthquakes disrupt children's access to school. These disasters impact disadvantaged regions and isolated communities aggressively. The research on catch up learning activities and return to school interventions can be developed and evaluated for impact evidence. Impactful interventions for children to return to school can prevent dropout rates.

There is not much empirical assessment of models such as home schooling or distance learning based on rigorous designs of randmoised control trial or regression discontinuity. However, these models exist as practice and sometimes alternate policy. There is some evidence that suggests disadvantaged children in pre-primary and primary age benefitted from exposure to children's television programmes. Children's educational TV programmes and channels are easily accessible nowadays as internet media (You Tube, TikTok) and satellite TV are available in most remote regions of India and Pakistan. For research purposes it would be useful to investigate the impact of developing children's educational content on their learning according to the local languages, history and cultures delivered through internet media.

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