



Joyful learning? The effects of a school intervention on learning outcomes in Karnataka



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ABSTRACT

We study the effect of a novel schooling intervention, known as Nali Kali, in the state of Karnataka in India targeted at government schools in rural areas, and especially at children from socially disadvantaged backgrounds.

We use a rich primary data-set of a sample of school-going children who were exposed to Nali Kali teaching by a set of teachers trained in Nali Kali methods by the state education department.

We find support for the positive effects of the Nali Kali programme on learning outcomes.

Our study provides suggestive evidence that schooling interventions of the government that are well-designed and that have the confidence of the teachers who implement these interventions can work in positively impacting on learning outcomes of poor rural children, including those from socially disadvantaged backgrounds.

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1. Introduction

India's educational achievements in the recent past have had a mixed record (Kingdon, 2006). While there has been significant recent progress in school participation, especially among children of primary school age, drop-out rates remain stubbornly high, and India still is home to around 40% of the world's illiterates. Perhaps the most disturbing feature of India's educational landscape is the low levels of learning attainment of children in primary and secondary levels of schooling – for example, around half of the children in Standard III could not read a Standard I text in rural areas (ASER, 2010). Das and Zajonc (2010) find that 42% of children enrolled in standard IX in Rajasthan and 50% in Orissa fail to meet a basic international low benchmark of mathematical knowledge. Based on the data on test scores for these two states, they also find that the distribution of learning attainment in Indian school-children is highly skewed – while a small proportion of the school-going children are high performers and their learning attainment is comparable to the top performers in most OECD countries, there is a large proportion of the school-going population whose level of learning attainment is abysmal and among the worst for countries where similar data are available.

Low learning attainment implies low cognitive skills, and since cognitive skills are a good predictor of how well the child may do in labour markets when she reaches adulthood, the low learning outcomes of a large proportion of school-children, especially in rural India, would act as an important constraint to these children obtaining well-paid jobs, especially as the demand for skilled workers increases relative to demand for unskilled workers with economic growth and in a rapidly modernizing economy as we see in India currently. The role of cognitive skills in individual earnings and economic growth is now well-recognized – as Hanushek and Woessmann (2008, p. 657) note, “individual earnings are systematically related to cognitive skills. The distribution of skills in society appears closely related to the distribution of income. And perhaps most importantly, economic growth is strongly affected by the skills of workers”. Therefore, the low learning outcomes among India's school-going population can act as a significant constraint to future economic growth, and can have an adverse effect on the distribution of income.

Low educational attainment is particularly pronounced among children from socially disadvantaged backgrounds such as scheduled castes (SC) and scheduled tribes (ST) as well as among girls. For example, using the PROBE-data-set from five North-Indian states, Dreze and Kingdon (2001) suggest that SC children have an ‘intrinsic disadvantage’ with a relatively lower chance of going to school even after having controlled for household wealth, parental education and motivation, and school quality. With

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respect to gender disparities in educational attainment, [Kingdon \(2006\)](#) notes that among children aged 11–14 years, 10.3% of girls were out of school as compared to 7.7% of boys. Such strong disparities in educational attainment among children from SC/ST background and among girls is a matter of significant concern as potentially low rates of cognitive skill acquisition among backward cast children, and among girls in their childhood years could play an important part in restricting earnings potential and in determining their poverty status later in life.

While the problem of low learning outcomes among a large proportion of school-going children in India is being increasingly recognized, it is not clear, however, what kind of policy intervention can have a significant positive effect on learning outcomes, especially among rural children from relatively poor background.¹ This paper studies the effect of a novel schooling intervention in the state of Karnataka targeted at government schools in rural areas, and especially at children from socially disadvantaged backgrounds. The programme was called Nali Kali, which means Joyful Learning in Kannada. The objective of the programme was to break down the traditional hierarchy between teachers and students in primary schools, and foster more creativity and experimentation in the classroom. Such an approach was thought to be particularly appropriate for first-generation learners, as many of the children in the target population were, and for children from socially disadvantaged backgrounds. Teachers were trained in Nali Kali methods by the department of education in the Government of Karnataka, and specialized learning material appropriate for the Nali Kali method was provided in the class-rooms where Nali Kali was introduced. Initially started as a pilot scheme, the programme was extended to all districts in Karnataka. The target population was children aged between 6 and 9 years in government schools, and majority of them are located in rural areas of the state.

Our data come from a primary survey undertaken by us of a sample of school-going children who were trained in Nali Kali methods. The survey was exhaustive in its collection of data, and we have very rich data on test scores of the sampled children in Kannada and Mathematics, as well as a variety of school infrastructural measures, parental background, teacher quality measures as well as measures to capture the implementation of Nali Kali. We use three variables, namely (a) the number of years the Nali Kali programme has been implemented in schools, (b) the number of Nali Kali divisions in the school, and (c) the share of Nali Kali trained teachers in total teachers in the school to study the impact of Nali Kali programme on student tests scores in publicly funded schools in the state of Karnataka. We find clear evidence supporting the positive effect of the Nali Kali programme on learning outcomes in publicly funded schools in Karnataka.

The rest of the paper is in six sections. We first provide a summary of the literature on child pedagogy in Section 2. We then describe and critically examine the Nali Kali school intervention programme in Section 3. We next discuss in Section 4 the key measures of learning outcomes and school infrastructure variables in Karnataka as compared to other states. In Section 5, we propose the empirical strategy and discuss the data and key variables, and in Section 6, we discuss the results. Section 7 concludes.

2. Related literature²

There has been considerable progress in the provision of schooling inputs in the recent period in India. However, an important factor that determines how these inputs translate into learning outcomes is the structure of pedagogy and classroom

instruction ([Muralidharan, 2013](#)). Developing an appropriate child-centred pedagogy is a daunting task for countries such as India given the situation that several millions of first-generation learners have joined a rapidly expanding national schooling system. Learner-centred education (LCE) is perceived as a solution to a myriad of issues facing the school education system in many developing countries ([Tabulawa, 1997](#); [Nakabugo and Sieborger, 2001](#); [Harley et al., 2000](#)), and some researchers even call it as a policy panacea ([Sriprakash, 2010](#)).³ It is expected that the effect of LCE would get reflected beyond the realm of education to address such broad and intractable issues as poverty ([Brock, 2009](#)); exclusivity ([O'Sullivan, 2004](#)); and the need for a democratic political culture ([Harber, 2006](#)).

Since 1990s, child-centred ideas have been part of teacher training programmes and school reforms in many parts of Africa and Asia ([Capper et al., 1997](#); [Siraj-Blatchford et al., 2002](#); [Sriprakash, 2010](#)). Following this, many countries have brought in reforms at the school level and child-centred ideas have increasingly found a place in the new curriculum. These learner-centred pedagogical practices have been introduced into classrooms or other learning environments using different strategies. National educational reform is one such principal channel using which many countries have introduced LCE into the classroom learning. South Africa, where learner-centred pedagogy was promoted in the post-apartheid era ([Nakabugo and Sieborger, 2001](#); [Harley et al., 2000](#); [Spren and Vally, 2010](#)), Namibia, where LCE has been enacted for teacher educators through Basic Education Teachers Diploma programme (BETD) ([Nyambe and Wilmot, 2008](#); [Dembele and Miaro-II, 2003](#)), Poland, where learner-centred pedagogical practices have been part of the education system in the post-Communist period ([Vulliamy and Webb, 1996](#)), Tanzania, where a revised curricula for secondary schools developed in 2005 enact the use and promotion of LCE ([Vavrus et al., 2011](#)), Zambia, where the Teacher Education Reform Programme (ZATERP) introduced in the late 1990s place the learner at the centre of the educational process ([Musonda, 1999](#)), Turkey, which has revised the curriculum for primary schools in 2005 to accommodate student-centred pedagogical practices ([Aksit, 2007](#); [Altinyelken, 2010a,b](#)) and India, where child-centred pedagogy was made part of its universal elementary education programme called Sarva Shiksha Abhiyan (SSA) introduced in 2001 ([Planning Commission, 2010](#)), are examples of countries that followed this route. There are also innovations that are conceived, developed and implemented at the local level so as to integrate child-centred pedagogical practices into classroom learning. Innovations implemented in a teachers' college in Tanzania ([Vavrus, 2009](#)), science classrooms in Kenya ([Ndirangu et al., 2003](#)) and school-library programme in Karnataka, India ([Borkum et al., 2013](#)) are examples of such local innovations.

In the midst of some available evidence on the positive effect of child-centred education on student outcomes ([Piper et al., 2014](#)), critics question its suitability in all cultural and resource contexts, and there is evidence in the global south of perennial problems of implementation ([Schweisfurth, 2011](#) for a detailed discussion on these challenges). While there has been a lot of policy rhetoric on child pedagogy, implementation plans have rarely matched the rhetoric ([Jansen, 1989](#); [Dello-Iacovo, 2009](#)), and “the governments' desire to be making visible, positive, modern changes drives policy forward at a pace which practice cannot match” ([Schweisfurth, 2011](#), p. 427). Another set of papers highlight material and practical issues in the implementation of these ideas. The key

¹ The majority of children studying in publicly funded schools in rural India are from socially and economically backward background ([Ministry of Human Resource Development, 2012](#)).

² This section builds on [Schweisfurth \(2011\)](#).

³ These multitude of issues include (a) narrow examination-focused orientation in teaching ([Dello-Iacovo, 2009](#)); (b) the irrelevance of existing curricula to learners' own lives ([George and Lubben, 2002](#)); and the lack of inclusion of children belonging to all social groups ([Layne et al., 2008](#)).

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