

An evidence-based proposal to achieve universal quality primary education in India¹

Teaser: It is well established by now that learning levels in Indian primary schools are unacceptably low. This article proposes a strategy for achieving universal functional literacy and numeracy for all primary school children in India during the 12th Plan that is fiscally sustainable, politically feasible, implementable at scale, and based on interventions proven to be effective by rigorous research on education in India.

Body: India has achieved considerable success in increasing primary school enrolments over the past two decades and currently, over 97% of school-age children are enrolled in primary school. Despite this, learning levels are unacceptably low as documented by multiple independent studies.

The quality challenge in primary education in India

With more than 50% of children aged 6-14 not being able to read at a 2nd class level, the quality challenge is almost certainly the biggest crisis in the Indian education system. Long-term annual data on student learning in primary schools in India shows a sharp flattening of learning trajectories after class 2 (Muralidharan and Zieleniak 2013). The most likely reason for this is that the textbooks and syllabus in class 3 and beyond require children to be able to “read to learn” and children who have not attained reading competencies by class 3 sharply fall behind over time.

The essential message from high-quality academic research on the impact of education policies on improving education is that the most expensive components of education spending that have been prioritised in recent years (infrastructure, teacher salaries, teacher training, mid-day meals, and other student inputs) have shown very limited impacts on improving learning outcomes. It is extremely unlikely that a ‘business as usual’ expansion of education spending along current patterns will significantly improve learning outcomes (Muralidharan 2013).

On the other hand, relatively inexpensive interventions such as using modestly trained and paid community volunteers to provide supplemental instruction to children at their level of learning (as opposed to the level dictated by the curriculum or assumed by the textbook) have proven to be highly effective at improving learning outcomes in multiple settings across India.

The 12th Five-Year Plan recognises the centrality of the quality challenge and has explicitly committed to a target of: “Improving learning outcomes that are measured, monitored, and reported independently at all levels of school education with a special focus on ensuring that all children master basic reading and numeracy skills by class

¹ Karthik Muralidharan. All the research referred to in this proposal for which a reference is not provided is summarized in the author’s background paper for the 12th Five-Year Plan (Muralidharan 2013).

2 and skills of critical thinking, expression and problem solving by class 5." While investing in education quality is clearly one of the most important priorities for the Government of India, the fiscally-constrained budgetary environment creates an imperative to implement both cost-effective and scalable policies to address this massive challenge.

Proposing a national programme of primary school teaching assistants

To achieve the learning objectives of the 12th Plan in a fiscally and practically sustainable way, I propose a national programme of primary school teaching assistants (TA) through which the main ideas that are supported by the research can be implemented and scaled up. The core idea of the proposal pertains to the stipulation under the Right to Education (RTE) Act to reduce pupil-teacher ratios (PTR) from 40:1 to 30:1. This will involve an expansion of hiring of regular teachers at an estimated additional cost of Rs. 25,000 crores per year, and is one of the most expensive components of the Act. The research evidence very strongly suggests that it will be possible to achieve considerably larger improvements in learning outcomes and to significantly improve educational equity and inclusion by spending these same resources a little differently, in the manner outlined in this proposal.

The proposal suggests maintaining the regular teacher norm at 40:1 (subject to a minimum of two regular teachers per school as per original Sarva Shiksha Abhiyan (SSA) norms) as opposed to 30:1. The same funds that would have been used to achieve the reduction from 40:1 to 30:1 can be used to provide each regular teacher with two TAs from the same village, where the TAs shall have an explicit mandate to focus on first-generation and weaker learners and to provide small-group instruction and tailored attention to these children to enable them to master basic reading and numeracy skills by class 2 or 3 (to be able to "read to learn") as targeted in the 12th Plan. Such an allocation of TAs to teachers will enable the PTR (defined as the ratio of adults to children in the school) to be reduced to 13.5 (or lower), which will allow for much more individualised attention to children and provide schools with the teaching resources needed to bridge early learning gaps.

The proposal allows for a dramatic reduction in PTR in a fiscally-sustainable way, while also creating employment and skill-building opportunities for educated rural youth.

Qualifications and appointment criteria

- Appointed candidates will be from the same village (or Panchayat if needed).
- The minimum qualification for this role will be passing 12th standard, though the most qualified applicants in a village will be prioritised for appointments. Current data suggests that around half of the appointees will be college graduates, while half will have passed 12th standard.

- TAs will be appointed for one year at a time with the target duration of total employment being four years. The appointments will be renewed annually subject to meeting performance and training norms.
- No formal teacher training credentials will be required to join as a TA, but continuous and ongoing training will be required over four years.
- Since research suggests that women may be more effective at teaching younger children (especially young girls), each school should target filling 50-75% of these positions with women (Muralidharan and Sheth 2013).
- Subject to meeting minimum qualifications, preference will be given to candidates in accordance with reservation norms.

Training

A consistent finding in the research on education quality in India (and globally) over the past decade is that there is no association between having a formal teacher training credential and teacher effectiveness in improving student learning outcomes. This does **not** imply that training cannot have an impact on improving teacher effectiveness, but it does suggest that training credentials as currently generated within the system are unlikely to be effective markers of teacher quality, and that it is essential to rethink the approach to teacher training.

Research and practice from around the world suggest that the most effective training programmes are typically those that integrate theory and practice in a continuous manner over time as opposed to pure 'credentialing' systems that are based mostly on theory. The TA programme may be an especially promising opportunity to re-imagine training along these lines.

The proposal makes the following suggestions pertaining to TA training:

- TA's should participate in a modular training program, where the Diploma in Education (D.Ed.) qualification is modularised into four modules of three months each (each consisting of a two-month summer session and 2-4 sessions of 1-2 weeks each during the school year).
- The TA appointment will not require a formal teacher training qualification at the start, but will require the completion of the first module of pre-service training prior to starting in schools (this will be an intense two-month programme with a focus on preparing the TAs to handle classroom situations and to focus on helping children attain basic competencies as opposed to education theory).
- Over four years, the TAs will complete additional modules of teacher training (including more theoretical components) during the summer break, and spend one month during the school year on continuous training, with a view to passing an exam and obtaining formal teacher training qualifications at the end of the four years.

- The TAs will be paid their regular salary during this training (subject to passing modular exams), which minimises financial risk to them. Many of these students would have otherwise paid large amounts of money to enrol in low-quality teacher training programmes that do not lead to teaching jobs.

Pay and integration into regular teacher track

- The salary for this position will range from Rs. 3,000 to Rs. 6,000 per month depending on qualification and experience. As documented in several studies, this pay scale compares very well with the pay offered to similarly qualified candidates in rural India, and is higher than the average salary paid by private schools in rural India. Evidence suggests that there is likely to be an excess supply of suitably qualified candidates at this salary scale (Kingdon and Sipahimalani-Rao 2010).
- At the end of four years as a TA, candidates who are college graduates and have obtained the D.Ed. equivalent through the modular training programme, can apply to be hired as a regular civil-service teacher by taking the Teacher Eligibility Test (TET) and being selected through the standard recruitment procedure, but they will receive additional credit for each year of experience as a TA.²
 - Thus, top-scoring candidates on the TET may qualify for direct recruitment as a regular teacher (without going through the TA experience), but for two candidates with the same exam marks, creditable classroom experience as a TA will significantly enhance the probability of selection as a regular teacher.
 - As a result, the TA position will typically be the first step in a career ladder, and the recruiting system will recognise the value of classroom experience in addition to pure theoretical knowledge as reflected in formal qualifications.
 - Equally importantly, this system will help candidates discover whether they actually enjoy teaching and are good at it before deciding whether teaching should be a life-long career (and reduce the cases of ‘mismatches’ where candidates train to be a teacher and realise later that they actually don’t like the job or are not good fits for it).
- Candidates who are not college graduates or who do not score high enough on the TET to be selected as regular teachers will receive a lump-sum payment of Rs. 1 lakh on completion of their four-year appointment.
 - Candidates who complete the modular D.Ed. but do not get selected for regular positions through the TET can continue to work as TAs, and make

² The exact formula can include extra marks for each year of TA service, and also include some weight for performance assessments by senior teachers and community members, but the key idea is to provide credit for experience as a teaching assistant in the regular teacher hiring decision.

- additional attempts to qualify for selection as a regular teacher through the TET (if they are college graduates).
- Candidates who complete the modular D.Ed. and choose to remain as TAs for the longer-run without aiming for selection as regular teachers (due to not being college graduates or because of not wanting a transferrable job), can be eligible for longer-term TA contracts at the village school.
 - There is also likely to be increased demand for these candidates as teachers in private schools, who will have an increased need for trained teachers to meet RTE requirements.
 - The payment of Rs. 1 lakh as a lump-sum at the end of four years of successful service has several attractive features:
 - It provides candidates who would not like to continue in teaching with the resources to explore other career options at a young age.
 - It is also likely that many of the candidates for the TA roles will be young women who may only plan to work as teaching assistants between ages 18 and 22 prior to getting married or starting a family. The lump-sum payment would significantly enhance female independence and empowerment and raise the value placed on girls in patriarchal settings (especially in rural North India).
 - Further, as shown by recent research, raising returns to education for girls increases both educational attainment and female empowerment with respect to decisions on timing of marriage and childbirth.
 - Many state governments already offer lump-sum incentives of around Rs. 60,000 to girls who complete 12th standard and stay unmarried till then. The suggestion here follows the same approach and creates a 'social contract' with educated youth (especially young women) by saying that "you invest in the next generation of school-going children and we (the government) will invest in you."

Programme benefits

The key benefits of the proposal are as follows:

- It provides schools with the additional teaching resources needed to make it realistic to be able to deliver on the 12th Plan goal of making sure that all children master basic reading and numeracy skills by class 2. The proposal facilitates the reduction of PTR to below 14 and the provision of substantially greater individual (or small-group) attention to children who are not reaching basic competencies in reading and numeracy.
- It has the potential to make teacher training more effective by integrating theory and practice, and provides a sound foundation for building effective teachers.

- The modified pathway to teacher recruitment, training and promotion to ‘regular teacher’ is likely to significantly improve teacher quality over time because of (a) the better integration of teacher training and practice, and (b) high-performing TA’s are more likely to obtain regular teacher appointments, and TA’s who find themselves to be a poor fit for teaching are less likely to do so.
- It will provide employment to educated youth (especially women) who may either not want to or not be able to work outside their village.
- Finally, the policy is likely to significantly increase female empowerment – by providing educated young girls with a job, a steady income and greater financial independence, increased respect in the village, and greater control on marriage and fertility decisions.
- A further benefit is the generation of strong positive role model effects for younger school-going girls, and the visibility of these jobs in villages is also likely to increase the perceived ‘returns to education’ and consequently increase the demand for education among girls (Jensen 2012).

How are teaching assistants different from ‘contract teachers’?

There are two connections between the proposed idea and the ‘contract teacher’ model. The first is that the proposal is based on research studies showing that contract teachers (who are typically hired from the same village, are less educated, much less likely to have formal teacher training credentials, and are paid five times lower salaries) are at least as effective (if not more so) at improving student learning outcomes than regular teachers (Muralidharan and Sundararaman 2013). The proposal also relies on the several studies showing that local community teachers with modest training and pay were highly effective at improving learning outcomes when implementing supplemental instruction programmes taught at the level of the child (Muralidharan 2013).

A second similarity between the two models is that they both rely on the increasing availability of educated youth in rural areas who are not finding formal sector jobs, and who would prefer to not have to migrate to cities for employment opportunities (especially educated young women).

However, there are at least three important differences between the proposed teaching assistant programme and the contract teacher model:

1. While contract teachers were typically used to substitute for regular teachers in school, the TAs will *supplement* existing regular teachers. The supplementation will allow schools to bring PTR’s to below 15, which allows children to receive much more individual attention. Thus, the aim is not to ‘save’ money by using contract

teachers, but to use the same resources budgeted for bringing PTR down from 40:1 to 30:1 to achieve a much sharper reduction in PTR using TA's (to below 15:1).

2. These supplemental teaching resources can be used to pay special attention to weaker children and to bridge early gaps in learning levels to allow children from educationally disadvantaged backgrounds to catch up to their more advantaged peers. The regular teacher will have a school leadership role and be responsible for ensuring that these goals are met, and for guiding the TAs. But, the schools will now have considerable additional teaching resources to be able to make this feasible.
3. Critically, the TA is **not** seen as a replacement for a regular teacher as the contract-teacher often was (which risks de-professionalizing teaching), but rather as the first step in a career ladder that (a) promotes the best and most effective candidates to regular teacher posts based on actual performance, and (b) provides a substantial exit compensation for TA's who do not meet high regularization standards.

The proposal leverages the strengths of community and village-based teachers, while addressing the three main weaknesses of the typical contract teacher model:

- a) The concern of de-professionalising teaching is addressed via the modular training programme, and the proposal is likely to *increase* professionalism by regularizing only high-performing TA's, which will increase average teacher quality over time.
- b) The legal issue of 'equal pay for equal work', which has been a challenge in the past under the contract model, is addressed by clearly defining the roles differently. A regular teacher will have much greater responsibility including that of coaching and supporting the TAs and taking overall responsibility for child learning outcomes, while the TA position is in the spirit of an apprenticeship.
- c) The attempt to *replace* regular teachers with contract positions has led to frequent agitations by contract teachers for 'regularisation'. This is addressed by clearly defining the TA position as a four-year one, which leads to promotion to a regular teacher based on meeting high standards, or a payment of Rs. 1 lakh to recognise the contribution of TAs who may not meet the high standards for regular selection.

While the overall structure of the programme is laid out in this proposal, there are important details that need to be worked out in consultation with teacher training institutes, local education administrators, and potential third-party partners. In particular, it will be important to work out the details of the modular training programmes and also to optimise classroom pedagogy to optimally use the additional instructional resources to provide the small-group and individualised support that weaker students may need. It

would therefore be prudent to first try this approach in a few districts for one or two years and carefully evaluate both process and impact before attempting to scale up.

The proposal provides a compelling political narrative for newly-elected Chief Ministers by offering a fiscally feasible pathway towards improved youth employment and female empowerment, while also significantly improving education quality. The ideal way forward would be to make the proposal to states and carry out pilots at a block or district-level in states that express interest. It may be particularly useful to target states that have just recently completed elections (or will soon do so) and therefore have a 4-5 year window over which to pilot and then scale up the idea, and to target going back to the voters with a concrete achievement of having delivered universal functional literacy and numeracy during their 5-year term.

This note was prepared by the author for the Ministry of Human Resource Development, Government of India. All the research results referred to here are discussed in greater detail in a companion background paper on primary education policy priorities for the 12th Plan.

Further Reading

1. Muralidharan, Karthik and Yendrick Zieleniak (2013). "Measuring Learning Trajectories with Longitudinal Data and Item Response Theory", Lecture at Young Lives Conference in Oxford (8 July 2013): <http://www.fsmevents.com/younglives/session04/onDemand.html>
2. Muralidharan, Karthik (2013). Using Evidence for Better Policy (Ideas for India; Mint)
3. Muralidharan, Karthik (2013). Priorities for Primary Education Policy in India's 12th Five-year Plan, *India Policy Forum, Vol. 9*
4. Kingdon and Sipahimalani-Rao, 2010, "Para-Teachers in India: Status and Impact," *Economic and Political Weekly*, XLV, 59-67
5. Muralidharan, Karthik and Ketki Sheth (2013). "Bridging Education Gender Gaps in Developing Countries: The Role of Female Teachers" NBER Working Paper 19341
6. Muralidharan, Karthik, and Venkatesh Sundararaman (2013). "Contract Teachers: Experimental Evidence from India" NBER Working Paper 19440.
7. Jensen, Robert (2012). "'Do Labor Market Opportunities Affect Young Women's Work and Family Decisions? Experimental Evidence from India." *Quarterly Journal of Economics* no. 127 (2):753-792