



Literacy, Foundation Learning and Assessment in Developing Countries

EVIDENCE BRIEF

Oral language is the foundation of literacy and critical to educational success

About this brief

This paper summarises evidence from a DFID-funded review by Nag, Chiat, Torgerson & Snowling (2014) [Literacy, Foundation Learning and Assessment in Developing Countries](#), produced by a collaborative team from the Universities of Oxford and Durham, and City University London with The Promise Foundation (India).

Aims of the review

Against the background of evidence from economically developed countries:

- to draw together evidence of literacy and foundation learning in developing countries;
- to consider the impact of children's cognitive and linguistic skills as well as classroom and home literacy practices on attainments;
- to identify interventions for literacy and numeracy with the strongest empirical support;
- to highlight the 'enabling conditions' needed for interventions to be implemented effectively.

The focus was on language and literacy up to Grade 8 (~age 14 approximately) and mathematical reasoning and numeracy learning up to Grade 2 (~age 8).

Key findings

- Language is the vehicle of classroom instruction. In the multilingual contexts of developing countries, children with low proficiency in the school language are disadvantaged.
- Strong foundations in oral language are essential to enable fluent reading with understanding.
- Interventions targeting language skills are beneficial for literacy development and, if delivered early, they can provide a scaffold for learning across the curriculum.
- Literacy-related assessment in the early grades has focused on symbol knowledge, and to a lesser extent phonological awareness, but not on the critical skills of vocabulary and grammar.

- Assessment of numeracy focuses on arithmetic operations and seldom includes mathematical reasoning.
- Teaching of numeracy privileges the school language. Children's performance improves when teachers support their reading (and comprehension) of problems and they are permitted to give the solution in the home language.

How to use this brief

This brief summarizes the key findings of the review. It includes evidence extracted from 260 papers following a comprehensive search of the literature from 1990 to January, 2013. Detailed information on methodology can be found in the full review. This brief is not designed to provide advice on interventions.



Evidence on instruction and intervention

A strong body of evidence shows that current classroom instruction is ‘top-down’, involving much rote learning, often failing to make contact with children’s own experiences, including their language and culture (see Box 1, below). Although there is documentation of much good practice, there are few robust evaluations of culturally sensitive interventions delivered in developing countries to improve literacy and numeracy in young children (see Box 2).

Box 1

Prevalent instruction practices
 In Eritrea, Ethiopia, Ghana, India, Kenya, Mexico, Pakistan & Peru

Chorus

- Letter names
- Word lists
- Sentences from texts
- Answers to questions in lessons

- Number names
- Number facts
- Pithy phrases for steps to problem solving

Copywriting

- Letters
- Lists of words
- Full sentences
- Paragraphs

- Numbers
- Mathematical signs
- Practice sums
- Multiplication tables

Drill

- Spellings
- Answers to questions

- Counting
- Number facts
- Practice sums
- Mental maths

Peer Support

- To finish tasks
- To clarify lessons
- To ‘teach’

(Synthesis of 14 studies)

Box 1 above highlights four prevalent instructional practices that influence children’s literacy and numeracy attainments. These can make a useful contribution to learning, provided a teacher is explanation-oriented and learner-centred. The evidence clearly indicates that when teachers fail to cater for between-child differences in foundation skills necessary for literacy and numeracy, there is only surface learning.

Evidence-based practice in literacy instruction

Box 2 below shows the evidence available for some activities aimed at supporting literacy development with positive effects. They are divided by weight of evidence available from economically developed countries. The size of evidence from low-income contexts in developing countries is also given, based on a systematic review of eight randomized controlled trials, and narrative review of twelve quasi-experimental designs – eight for school-based interventions and four for literacy practices at home. All included studies were evaluated as of moderate or high quality, and the consistency of the evidence from these studies is high. Similar studies on numeracy instruction in the early grades are not available from developing countries.

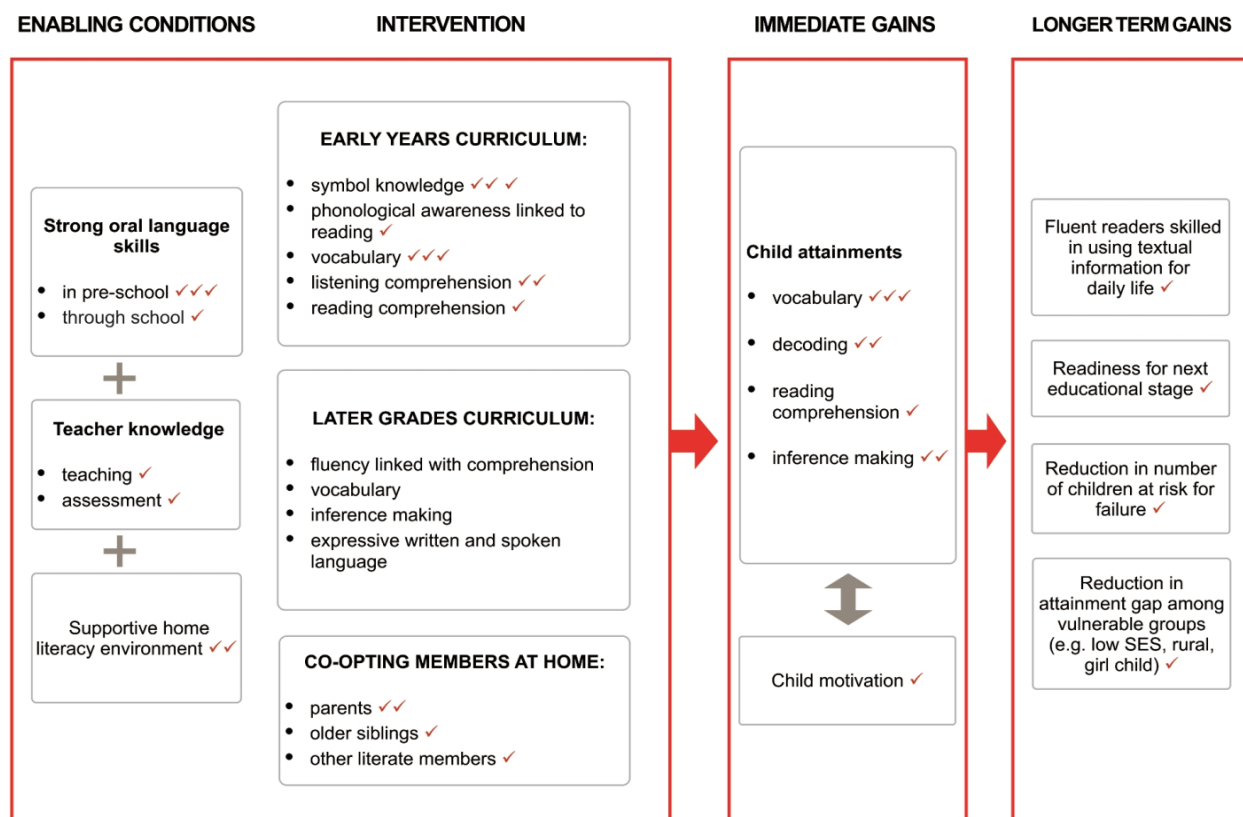
Box 2

Evidence from economically developed countries	Large and consistent	Oral language inputs ✓✓	Dialogic Reading ✓✓	Supporting emergent literacy ✓✓	Drawing on home experiences ✓✓	Systematic Phonics ✓
	Large but not consistent		Reciprocal teaching ✓✓	Shared book reading ✓✓✓		
	Small or mixed		Phonological games ✓	Story-telling ✓✓✓		

Theory of Change (ToC) model

ToC Models articulate ways in which a proposed intervention can lead to change and are useful for planning, implementation and evaluation of new initiatives. Theoretically grounded ToC models can reassure practitioners that their interventions are built on the most effective methods (currently available) to support children's learning.

Improved attainments depend upon teacher education, and the availability of appropriate curricula and textbooks. Acknowledging each of these (among others) as key assumptions, we propose a set of theoretically grounded interventions that have an evidence base from economically developed countries. We also indicate the size of evidence currently available from low-income contexts in developing countries. The model also makes connections between specific teaching activities and expected outcomes (gains) in learning and motivation.



Note: Size of evidence from low-income contexts in developing countries: ✓Very small (<3 studies) ✓✓Small (4-6 studies) ✓✓✓Moderate (7 -12 studies)
Assumptions: a) Relevant and varied teaching-learning resources. b) Curricula embedded in culture & language(s). c) Curricula adapted for inference making.

Socio-economic status, gender and geography

Apart from the learning environment, there is consistent, high-quality evidence that child labour is associated with lower literacy and numeracy attainments. There is also robust evidence that lack of access to credit, and poor information about the costs and benefits of education, play an important role in holding back children from acquiring the skills they need (including literacy and numeracy) to succeed in the labour market. The well-known effect of gender and the urban-rural gap interact with other social factors to make a child more or less vulnerable to low levels of attainment.

Gaps in research

- Robust evaluations of interventions, especially in multilingual contexts.
- Investigation of the optimal intensity and duration of programmes that target language skills (most notably, oral language and phonological training), relative to their cost.
- Studies of the factors which predict children's attainments in reading comprehension and mathematical reasoning.
- Studies on how different learning environments influence child-level factors to influence attainments.

Examples of what works

This table below provides example of interventions evaluated using quasi-experimental designs (QED), randomized controlled trials (RCT) and research designs which combine qualitative and quantitative methods (Mixed). These studies have been undertaken in Bangladesh (B), Ethiopia (E), Costa Rica (CR), India (I), Kenya, Uganda, Zanzibar / Tanzania (KUZ), Philippines (P) and Turkey (T). Quality ratings are indicated as High (↑) or Moderate (→).

Intervention	Study (Country code, design & quality rating)	Example of activity	Emergent literacy	Oral language	Reading skills	Increase in motivation / educational success
Emergent literacy	Malmberg <i>et al.</i> (2011) KUZ, QED, ↑	'to use locally available low-cost material for children to select, explore and experiment with...' p. 125	✓	✓		
	Kağıtçıbaşı (1997) T, QED, ↑	'...read the storybooks to their children, discussed them (e.g. asking and answering questions)' p. 71	✓	✓	✓	✓
Oral language inputs	Bekman <i>et al.</i> (2011) T, QED, →	<i>Circle time</i> : 'To promote thinking about a topic, sharing ideas, and seeing the cause-effect relationships between events.' p. 415	✓	✓		
	Moore <i>et al.</i> (2008) B, Mixed, ↑	<i>Morning News session</i> : 'to encourage more free verbal expression from the children' p. 120	✓	✓		
Dialogic reading & shared book reading	Opel <i>et al.</i> (2009) B, RCT, ↑	'Some questions asked about ... the causes and consequences of events (e.g., What happened when Kutus fell from the boat? How was he rescued?)' p. 15		✓		
	Abeberese <i>et al.</i> (2011) P, RCT, →	Students also write their thoughts about the stories in reading notebooks. p. 7			✓	✓
Phonological games	Nag-Arulmani <i>et al.</i> (2003) I, QED, ↑	'...making <i>'silly sentences'</i> by stringing words with similar initial phonemes into unusual sentences (e.g. "Swinging swarms of sweets swore they saw Swathi swimming up the swelling river")' p. 55		✓	✓	
	Rolla San Francisco <i>et al.</i> (2006) CR,RCT,→	'Work on syllables ... (a salient unit in the Spanish language)' p. 193		✓	✓	
Reciprocal teaching	Cianca (2012) E, Mixed,↑	Preparation for shared book reading: '...choose a book you find interesting, read the book many times to become an expert on your book, determine the meanings of words and phrases you do not yet understand, and most of all, relax and enjoy your book.' P. 400		✓		✓
	Mwaura <i>et al.</i> (2008) KUZ, QED, ↑	'... to foster more interactive and shared thinking between children and teachers' p. 240	✓	✓		

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