

Education

Books help boost preschoolers' IQ

A training programme for carers shows how reading with children improves their brains

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It has been conservatively estimated that 200-million young children, predominantly from Asia and sub-Saharan Africa, are failing to achieve their developmental potential because of poverty and adversity.

These children are disadvantaged in multiple ways, suffering adverse consequences in terms of their growth, physical health, socio-emotional competence and their cognitive skills.

Though all of these adverse outcomes carry clear disadvantage, arguably it is the deficits in cognitive skills, including literacy and the associated educational failure, that serve especially to exacerbate cycles of deprivation because of their impact on later job prospects and earnings.

Illiteracy is a global concern that blights a child's health and future prospects. Research by the United Nations Educational, Scientific and Cultural Organisation suggests that 175-million young people, largely from low- and middle-income countries, lack basic literacy skills. A World Literacy Foundation study estimated that illiteracy costs the global economy more than \$1-trillion a year through lost job opportunities and the costs of unemployment and ill health.

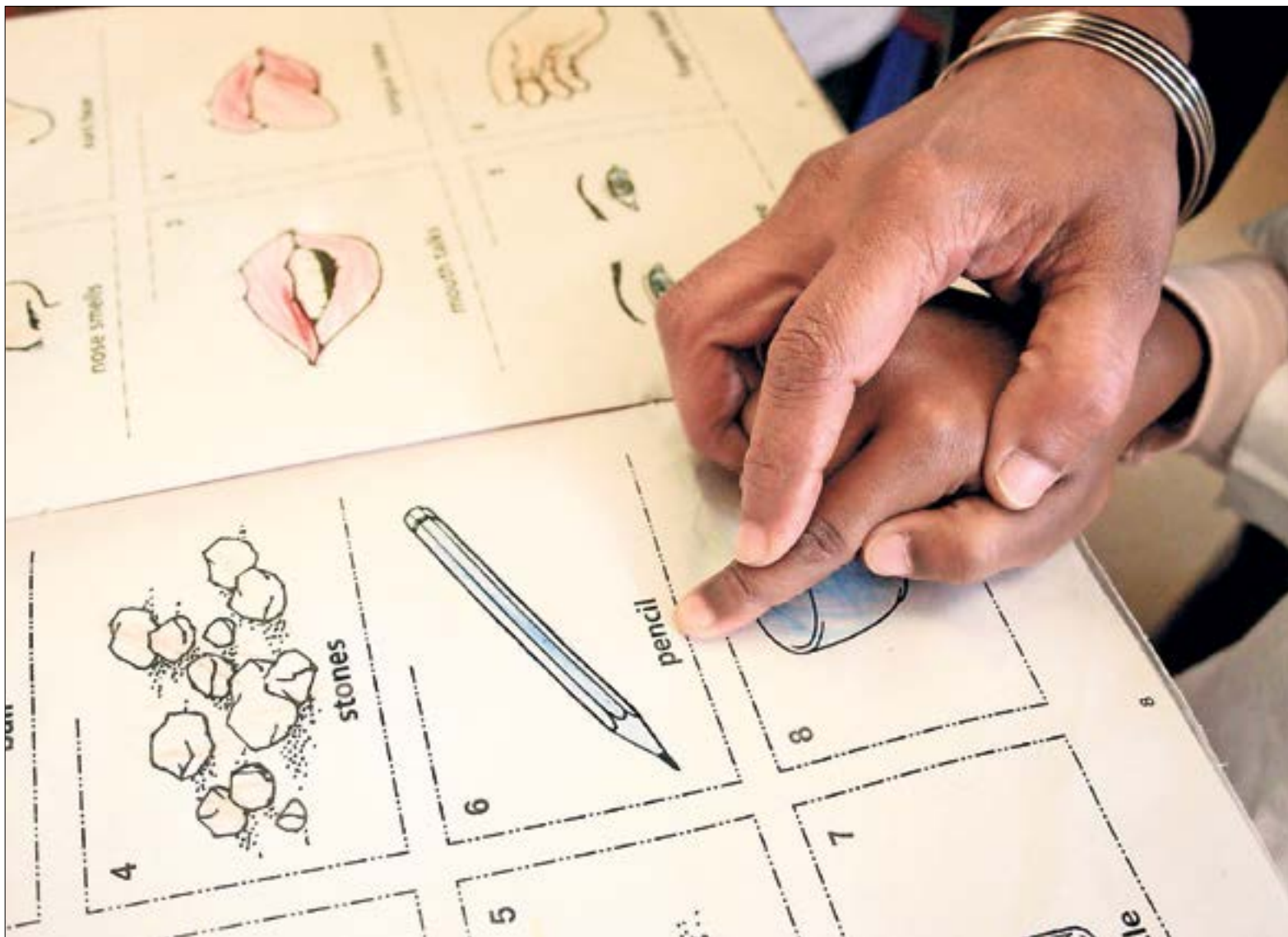
This problem is particularly acute in South Africa. There is strong evidence that children here are failing to achieve acceptable levels of performance in literacy. A recent department of basic education report revealed that more than half of learners in grade 3 did not achieve the expected level of performance and, in an international ranking of literacy skills among children of nine and 10 years old in 40 countries, South Africa came bottom of the table.

Several arguments have been advanced to explain this failure. Whatever the reason, it is clear that South African children are entering the school system at age six with few if any preliteracy skills and are rapidly falling behind, relative to children from other countries, rich and poor alike.

Given that children's abilities at the point of school entry are such important predictors of their progress through school, there is a strong case for intervention in the preschool period. Indeed, studies of interventions delivering such early cognitive stimulation in high-income countries consistently show substantial and sustained benefits in terms of developing child language and cognitive functioning.

A notable feature of the most effective of these interventions, however, is their comprehensive nature: thus, they are typically directed at multiple risk factors and are of adequate duration, intensity and quality. Importantly, despite the great weight of positive evidence in favour of the introduction of such early development programmes, government investment globally has tended to be low.

There is now a compelling body of evidence from high-income



Write stuff: South African children lag far behind in literacy skills, but this could be put right if parents and carers read with them from infancy

countries that children's language development and literacy skills are facilitated by book-sharing with a carer, beginning in infancy. And there does seem to be something very special about the process of book-sharing.

Periods of prolonged joint attending between carer and infant more commonly occur when sharing picture books than in other situations and, during these times, more than in any other context, carers name objects for the infant and acknowledge, extend and elaborate on the focus of the infant's interests.

Given this, it is unsurprising that intervention programmes in high-income countries designed to improve carer book-sharing skills have consistently shown great benefit to child development. What is surprising is that, until now, there has been no examination of the applicability of such intervention in poor countries.

We have developed a book-sharing training programme for delivery to South African families. This involves caregivers meeting in groups (usually between three and five caregivers and infants) with a trainer on a weekly basis over six to eight weeks.

The trainer's role is to convey didactic information, to model key skills, and to facilitate and encourage caregivers in good book-sharing practice.

This is achieved using a

"Books are essential for freedom ... For a nation, reading is a gateway to a different, better future"

PowerPoint presentation together with exemplar video material. Following the presentation, each carer-infant pair has a brief period of sharing a book during which the trainer makes suggestions and provides support.

The PowerPoint sessions typically last for about half an hour and are then followed by a session of 10 to 15 minutes of individual attention, during which the trainer sits with a caregiver and infant while they share a book. This is an opportunity for the trainer to support and encourage the caregiver in what they are doing. Typically, during these individual sessions, the trainer will take the opportunity to share the book with the infant herself, modelling the sorts of behaviours that have been introduced in the PowerPoint presentation.

The content of each session is specified in a manual and each session has associated with it clips of videoed book-sharing interactions to illustrate the point being discussed (such as pointing and naming or elaboration). The training programme includes the following basic components of dialogic reading and endeavours to provide guidance in acquiring these necessary skills:

- Active child participation: The infant should be encouraged to participate actively in the book-sharing experience rather than simply being a passive listener being read to. The carer is encouraged to follow cues from the infant;

- Pointing and naming: The carer is encouraged to point to and name objects in the infant's visual field, indexed by simple looking, patting, banging or scratching on the picture in question;

- Active questioning using

"where" questions: For words that the infant understands, the carer is encouraged to prompt the infant to point to a particular object or character, asking questions starting such as "Where is the ...?" or "Can you find the ...?";

- Active questioning using "what" or "who" questions: Later, when the infant knows how to say the word for an object, the carer is encouraged to ask questions such as "What is this?" while pointing to the relevant aspect of the picture for the baby to name; and

- Active linking of book content to the baby's real world: The carer is encouraged to link the content illustrated in the book to the infant's own experience (for example, encourage the infant to imitate a character's actions, such as taking turns to point to a pictured animal's nose, and then find their own nose and the carer's nose, the carer saying the word along with each point).

In a study, the findings of which were recently published in the *Journal of Child Psychiatry and Psychology*, we examined the impact of this kind of training by comparing two groups of carers and children from Khayelitsha: one in which the carers had received the training and one in which they had not.

After eight weeks, there were considerable differences between the two groups. Not only were trained carers much better at book-sharing, but in their play with their infants (play not involving books) they were also much more sensitive and responsive.

The children also showed dramatic improvement. Their vocabulary increased and their comprehension improved. Notably, on a standard measure of the extent to which a child could sustain focused attention, the children whose car-

ers had not received the training showed no change over the eight weeks, whereas those in the training group almost doubled their attention span.

This is an especially important finding because attention in infancy is the best early predictor of children's later performance at school.

Our findings demonstrate that it is possible to introduce sensitive book-sharing to contexts where this activity is unknown, and that doing so markedly improves child language and attention. Providing training in effective early book-sharing could play a major role in boosting the educational prospects of South Africa's children.

The size of the impact on infant attention is of the magnitude of an increase of 17 IQ points. We are hopeful that this intervention might be a game-changer in improving the educational potential of young South African children.

The training programme is simple and inexpensive to deliver and could readily be rolled out in a range of urban and rural South African settings.

In early February 2015, Deputy President Cyril Ramaphosa stated: "Books are essential for freedom ... For a nation reading is a gateway to a different, better future," and that "a mere 5% of parents [in South Africa] read to their children. We must change that."

Our book-sharing programme falls squarely within what the deputy president is advocating.

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