

Early language, literacy and mathematics learning: Why does it matter and who benefits?

Every child aged between birth and five years should have access to high quality language, literacy and mathematics learning opportunities, which are delivered by skilled ECD practitioners and are available in all early years settings, including the home.

Many children from disadvantaged communities in South Africa are starting school already behind, having missed out on vital language, literacy and mathematics learning in the early years. The education that these children receive is remedial from the outset, as teachers struggle to make up for lost time. The result is that the achievement gap becomes entrenched from the earliest years, extending the intergenerational cycle of lost opportunity and wasted potential.

Ensuring that all children have the same opportunity to fulfil their academic potential is key to tackling poverty and inequality in South Africa. This means putting early language, literacy and maths learning at the heart of high quality early childhood development (ECD) services.

High quality ECD – the benefits

High quality ECD programmes have been shown to have a wide range of individual, social and economic benefits.

In terms of outcomes for individuals, a number of studies have shown that children who benefit from high quality pre-school programmes are less likely to repeat grades or need special educational support, and are more likely to finish high school and continue their studies. Children from disadvantaged backgrounds benefit most.

Crucially, the benefits last and help to ensure that more children complete high school with the qualifications and skills needed to make a positive contribution to society.

A large US study found that children who were enrolled in a quality preschool programme ultimately earned significantly more per month than those who were not and were more likely to own their own home. They were also less likely to be involved in crime.

In terms of society and the economy, Nobel Prize winning economist, Professor James Heckman, has demonstrated that investment in high quality ECD programmes yields higher economic and social returns than spending on primary, secondary or tertiary education. The economic benefit-to-cost ratio of such programmes has been estimated to consistently exceed 3-to-1 and for some programmes be as high as 9-to-1 (a \$9 return for every \$1 invested).

In other words, it is much more costly to help children catch up later on, than it is to prevent them from falling behind in the first place. Society ultimately bears the cost of failures to support the early development of children, through higher spending on health, welfare and crime, and lower tax revenues.

In terms of the education system, high quality ECD programmes make the education system more efficient. This is because children who start school with a strong learning foundation are less likely to repeat grades or to require special educational support and other school support services. This brings direct cost savings, as well as other benefits such as less teaching time spent on behaviour management and higher teacher retention.

Early childhood development refers to the whole development of a child in the early years, covering the physical, social, emotional and academic/ cognitive domains. These areas are distinct but closely interconnected. Successful early learning relies on factors such as physical health, good nutrition, emotional wellbeing and close relationships. It also requires wider skills such as concentration, self-control, persistence and motivation.

“Skill begets skill and learning begets more learning. Early advantages cumulate; so do early disadvantages. Schooling comes too late in the life cycle of child development to be the main locus of remediation for the disadvantaged.”

Professor James Heckman

The central role of early language, literacy and maths learning to quality ECD

The significant positive impacts of ECD programmes do not hold true for all programmes – only those that meet clear learning standards, use evidence-based approaches, and are delivered by skilled practitioners. Opportunities to gain essential language, literacy and maths skills are an important feature of effective programmes, helping to build the foundations for school success.

In terms of early learning, ECD programmes that result in lasting positive impacts for children provide:

- language-rich environments with plentiful opportunities for shared thinking and talking
- learning activities that contribute to the development of early literacy and mathematics skills and knowledge
- teaching methods that show a proper understanding of how children learn
- storybooks and other resources that facilitate the delivery of the curriculum

Early language, literacy and maths learning should not be thought of in terms of formal teaching. Given the right knowledge and resources, it can be delivered as effectively by parents in the home as by ECD professionals in centres, particularly between birth and three years. It is the methods and approaches that matter, not the setting. Play, everyday conversations, age-appropriate games, shared storybook reading and daily routines are the main learning tools of the young child.

What kinds of skills?

A 5-year-old child with good **early language skills** will be able to communicate effectively in their mother tongue using a rich vocabulary. They will be confident using language in many different ways – for instance, taking part in conversations, participating in shared storybook reading, describing events, ideas and feelings, exploring and solving problems, and engaging in pretend play.

Barriers to early learning

In South Africa, there are many barriers to early learning:

- In the home and community context, children from disadvantaged backgrounds may be exposed to a range of factors that undermine their ability to learn, including poor nutrition, disease, stunting, violence and trauma, maternal depression, and insecure relationships.
- In the policy context, the guidelines and requirements for early years provision have tended to focus heavily on structural and access issues, meaning that there has not been enough emphasis on quality early language, literacy and maths learning, backed by training and resources.
- In the operational context, ineffective learning programmes, scarce and inappropriate learning resources, a low-skilled, demoralised workforce, and inadequate support for parents, all work against high quality learning experiences for young children.

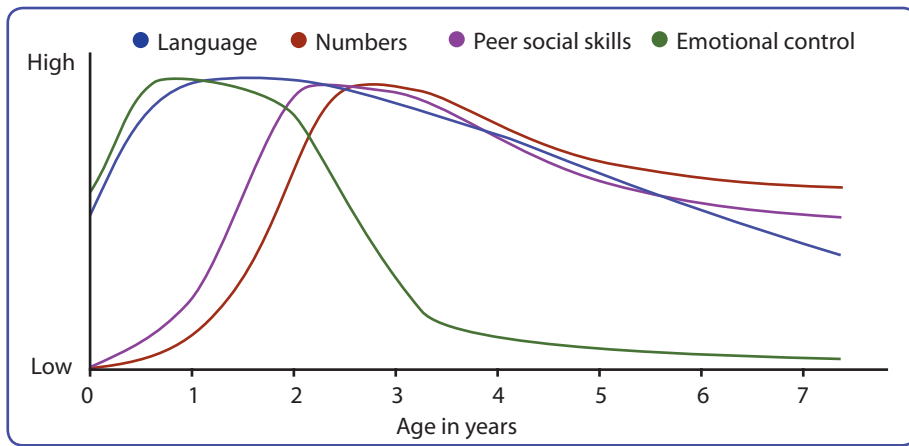
The achievement gap shows itself in various outcomes: children whose test scores are below average; children who have to repeat grades; children who drop out of school early; children who leave school with no qualifications; children who do not progress to further education.

In South Africa these outcomes are all more likely to apply to children who:

- ... are from historically disadvantaged groups
- ... are from low-income households
- ... are not learning in their home language
- ... live in rural areas
- ... have a disability
- ... have missed out on early learning opportunities

Early literacy skills include basic letter knowledge and the ability to recognise different sounds in words. Children will also understand that print is speech written down, and will have started to represent their ideas through drawing and early writing.

Early maths skills include number knowledge and an understanding of shape, size and space. Children will have the ability to use these concepts in basic measurement, estimation and classification tasks.



Source: Council for Early Child Development (2010)

At birth, a baby's brain is about one quarter of the size of an adult's. By age three years it has grown to about 80% of adult size and by five years to 90%.

Why learning early makes a difference

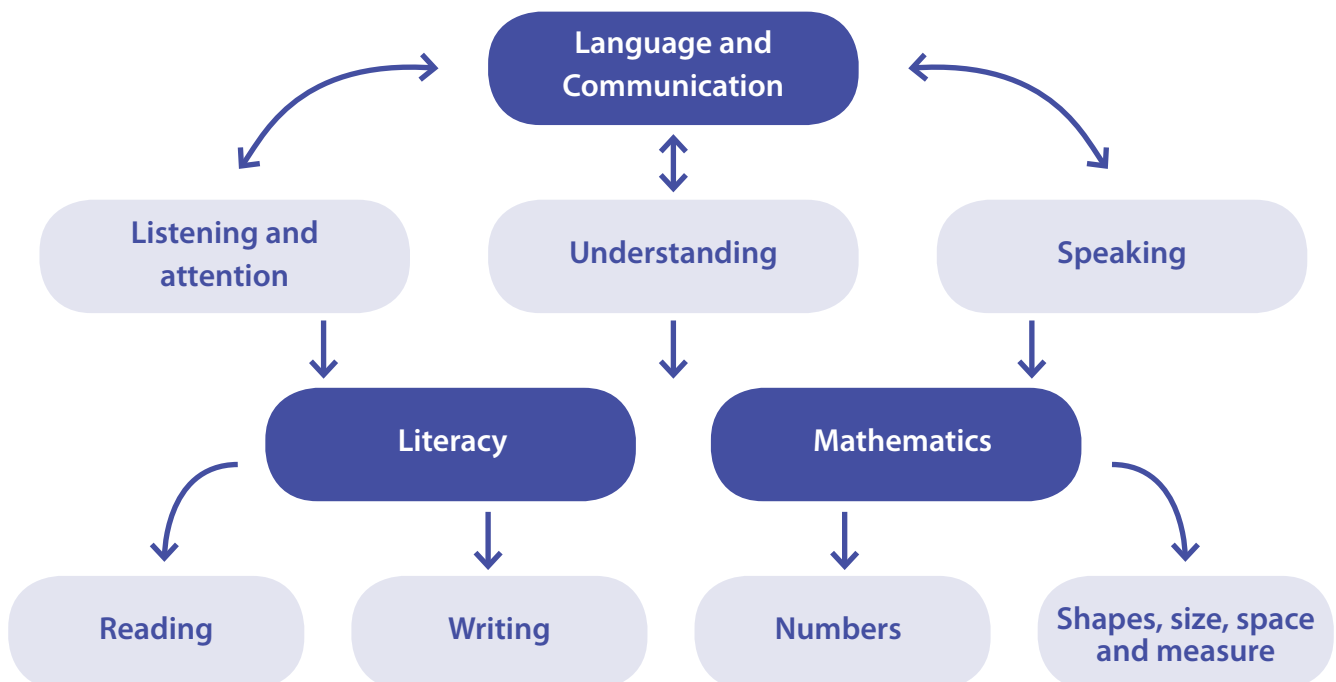
For many years in South Africa, there has been a widespread and mistaken belief that early literacy and maths learning begins in school. The truth is that from birth, children should be developing vital skills and understanding that they will require to learn to read and write successfully and to do mathematics. Why is this?

An infant's brain is very impressionable. The basic structure of the brain is formed during pregnancy. During the months and years immediately after birth millions of crucial connections between different parts of the brain are formed. This means that an infant's brain is particularly receptive to positive influences and learning experiences. However, it also means that it is vulnerable to the damage caused by an environment deprived of the right care, support and stimulation. It is therefore much easier for children to learn some skills, including language, during the early years.

Learning is cumulative. Early skills provide the building blocks for the acquisition of new skills and so on, throughout a child's life. In particular, children's maths and reading skills when they start school are linked to later academic attainment. In other words, those children who have benefited from learning opportunities between birth and five years will continue to pull ahead, and inequality can become locked in from the earliest years.

Language is at the heart of learning. Children learn through interaction with people and objects in their environment. They begin by learning language and then use language to learn. Listening, understanding, reasoning and communicating all rely on language. These skills in turn, provide the building blocks of early literacy and mathematics learning. Of course, language is not only for learning. It is also a fundamental part of social interaction and strong relationships, and therefore of individual emotional wellbeing. So unless children have strong language foundations in place when they enter Grade R, they will face significant barriers to learning from the start.

The essential role of language in early learning



Supporting early language, literacy and maths learning means that...

Everyone benefits!



Preschool teachers are able to improve their skills and command a living wage.



Children are given the best possible chance to fulfil their potential.

Everyone gains from lower spending on health, welfare and crime and higher tax revenues.



Parents are empowered to play a central role in their child's educational development.

Primary school teachers can teach to the curriculum because children have the necessary foundations in place.



This briefing was produced by Wordworks with funding from the DG Murray Trust. Wordworks aims to strengthen early language and literacy learning among children from historically disadvantaged communities in South Africa. By sharing our materials, know-how and enthusiasm with teachers, parents, volunteer tutors and home visitors in a respectful and inclusive way, we seek to ensure that all our children can learn to read and write successfully.

For a full list of references for this briefing and more information about our work, visit our website at www.wordworks.org.za.

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