CHILD OUTCOMES REPORT

[PROGRAMME] [DATE]

DATADRIVE 2030

eloom
early learning measurement tools

CONTENTS

INTRODUCTION

This report summarises the performance of a sample of children enrolled in 20 early learning programmes in KwaZulu-Natal. Children were assessed on the ELOM 4&5 direct assessment tool at two points in time: a baseline assessment in X, and a follow-up, or endline, assessment of the same children in X.
The report describes the sample's developmental performance on the ELOM.

Assessments were conducted in February and March 2023 by accredited ELOM assessors: XX; and in October by accredited assessors: XX.
Assessors primarily conducted the ELOM 4 & 5 in isiZulu.
This report was prepared at the request of XX.

THE elom 4 & 5 YEARS ASSESSMENT [1]

The ELOM 4 & 5 Years Assessment is a standardised child assessment tool that measures children's performance across five key developmental domains for children aged between 4 and 5 years old:

Gross Motor Development (GMD): Children's ability to control the large muscles of their body.

Fine Motor Coordination & Visual Motor Integration (FMC-VMI): Children's ability to control small muscles and coordinate small movements with visual information perceived by the eyes.

Emergent Numeracy & Mathematics (ENM): Children’s ability to understand number concepts, symbols, shapes, and size.

Cognition & Executive Functioning (CEF): Children's ability to stay focused, solve problems, form concepts, attend to instructions, and control impulses.

Emergent Literacy & Language (ELL): Children's ability to communicate effectively. This includes their ability to speak in full sentences, recognise the initial sounds of words, name common objects, relay events and listen to and understand stories told to them.

The ELOM suite of tools also includes measures of children's socio-emotional functioning and height-for-age (described on the following page). Home learning and classroom learning environment tools are available too, and can be explored here. Your chosen domains and focus areas are highlighted on the following page.

THE elom 4 & 5 YEARS ASSESSMENT [2]

In addition to the developmental domains described on the previous page, the ELOM 4 & 5 includes two developmental checks, or screens:

Task Orientation: The ELOM assessor is asked yes/no questions about each child's ability to persist with attention and accomplish tasks during the ELOM 4 & 5 assessment. Four items ask about the child's level of attention, concentration, diligence and interest during the assessment tasks.
Children receive a score out of 16, and their task orientation (ability to stay on task) is deemed either satisfactory or poor. Please note that scoring is a subjective process and may be affected by factors such as the assessor's own ability to hold the child's attention.

World Health Organisation (WHO) disability screening: To determine whether a sampled child has a disability that might affect their performance on the assessment, they are screened using a modified version of the WHO Ten Question Screen. The assessor is asked four questions regarding each child's eyesight, hearing, ability to understand instruction, and movement abilities.

YOUR FOCUS AREAS

Your study included the measurement of the following developmental areas:

Domains / Areas of Assessment	Measured in your Study
Gross Motor Development	✓
Fine Motor Coordination & Visual-Motor Integration	✓
Emergent Numeracy & Mathematics	✓
Cognition & Executive Functioning	✓
Emergent Literacy & Language	✓
Socio-emotional Functioning	✓
Height-for-Age (Growth)	✓

What is the Socio-Emotional Rating Scale?

This ELOM tool measures a child's emotional readiness for school, as well as social relations with their peers and adults. This scale is completed by an adult who knows the child well. You can read more about this tool here.

What is Height-for-Age?

This tool is a measure of a child's growth in relation to their age, indicating whether a child is exhbiting normal growth or is showing signs of malnutrition and stunting, Read more about how growth standards are calculated here.

THE ELOM 4 & 5 YEARS STANDARDS

Each of the ELOM 4&5 domains is scored out of 20 points, with the total assessment scored out of 100 points. For each of the learning domains that are assessed, and for learning overall (total score), children's scores are compared against the expected developmental standards for their age. Scores fall within one of three performance bands:

- **On track** for their age: These children meet the learning standards and are able to do the tasks expected of a child their age.
- **Falling behind** the expected standard for their age: These children will need support in order to catch up with other children of their age.
- **Falling far behind** the expected standard; These children need intensive intervention to reach the standard and are at risk of not catching up with their peers.

Children's overall ELOM scores do improve naturally with age. This is to be expected as they grow and develop. However, their position within the ELOM performance bands does not change as a function of their increasing age alone, but rather, as a function of enhanced learning opportunities (such as participation in an early learning programme, and engagement with parents, other adults and peers).

The ELOM Standards

The ELOM development team followed accepted practices in setting standards. This requires the use of empirical data and the judgements of qualified people. In consultation with experts, the expected ELOM performance standards were benchmarked at the score achieved by the top 40% of children (the 60th Percentile) in the ELOM's 2016 age validation sample. The cut scores for *Falling Behind* fell between the 32nd and 59th percentile, and below the 32nd Percentile children are considered to be Falling Far Behind. Learn more about the standards in the ELOM Technical Manual.

WHAT CAN THIS REPORT SAY ABOUT YOUR PROGRAMME?

Your ELOM study is a **pre-post assessment**, meaning that it is intended to give an indication of the extent to which the developmental performance of your programme children has changed across time.

How can pre-post data be used?

- To describe the developmental status of children in early learning programmes.
- To establish an estimated programme effect - i.e., the extent to which improvement in children's development is attributable to your programme, and not natural maturation.
- To identify potential developmental domains that require intervention.

It is important to note that this kind of assessment **cannot** be used to:

- Provide a measurement of individual child performance. The ELOM 4 & 5 is ELOM is designed to describe the average developmental status of groups of children. It should only be used as an individual assessment by registered professionals such as psychologists and occupational therapists to aid in assessment of developmental difficulties.
- Replace an evaluation. While this report describes child outcomes, and an estimated programme effect, it cannot explain the trends seen in results. It also cannot comment on the quality of your programme, its design, its implementation, or the influence of other contextual factors over children's development. To do so would require additional measurements and analyses (e.g., programme quality, home learning environment, staff interviews).

SAMPLE OVERVIEW

This ELOM study included a sample of children from the programme, believed to represent the whole programme cohort. The scores provided in this report represent the performance of sampled children only. The sample children were assessed at baseline and endline (follow-up). Details of the sample are summarised in the table below.

Number of children in the sample	**Baseline sample** (50 - 59 months old)	**Endline sample** (60 - 69 months old)	**Total**
Final sample size *	80	40	120
% Boys	44%	54%	46%
% Girls	56%	46%	54%
Average age (months)	54	60	55.5

*Note: Please note that one child was excluded from the sample at baseline because they did not complete the assessment.

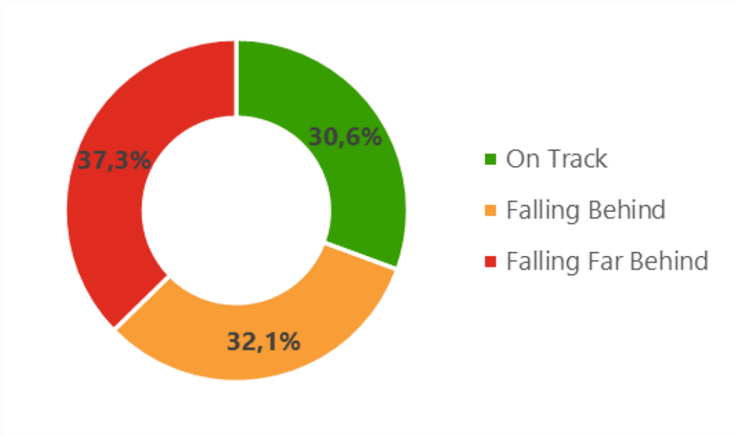
SAMPLE CONTEXT

The early learning programmes in the study sample are located in KwaZulu-Natal. To understand the provincial context in which your early learning programmes are operating, we looked at various data sources that describe the situation of young children in this province.

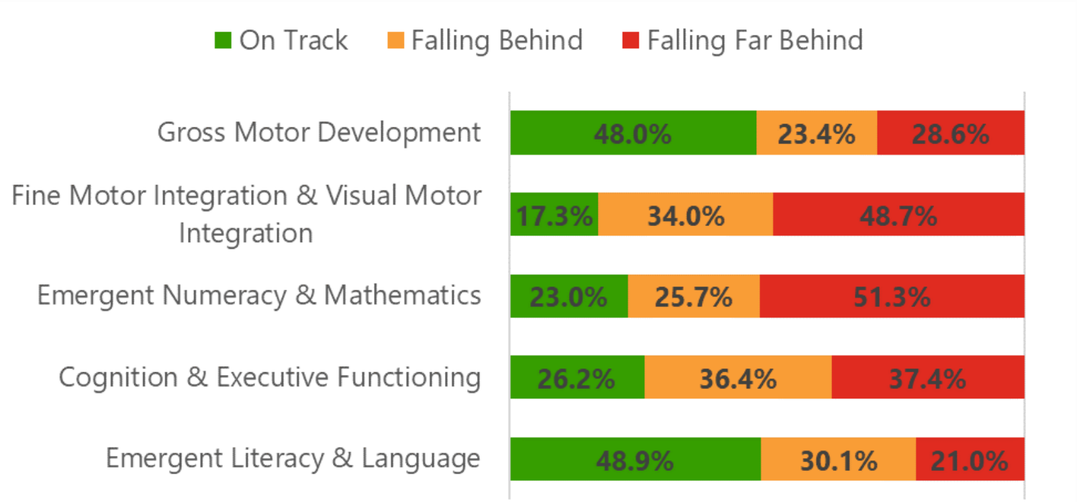
According to Statistics South Africa (2016), there are approximately 1 530 000 children between 0 and 6 years old in KwaZulu-Natal.
According to the Children's Institute, 70% of children living in KwaZulu-Natal are income-poor, meaning that they only have enough money for basic nutrition and other essentials such as clothing.
According to the General Household Survey (2023), 54.7% of 4-year old children in KwaZulu-Natal attend some form of early learning programme.
Finally, according to the baseline Thrive by Five national index, **30.6%** of children* in KwaZulu-Natal are **on track** for early learning (total ELOM 4&5 score) (see the graphs below).

Thrive by Five Provincial Results: KwaZulu-Natal

Percentage of Children On Track for Early Learning (Percentage of Children in each Performance Band):
ELOM 4 & 5 Total

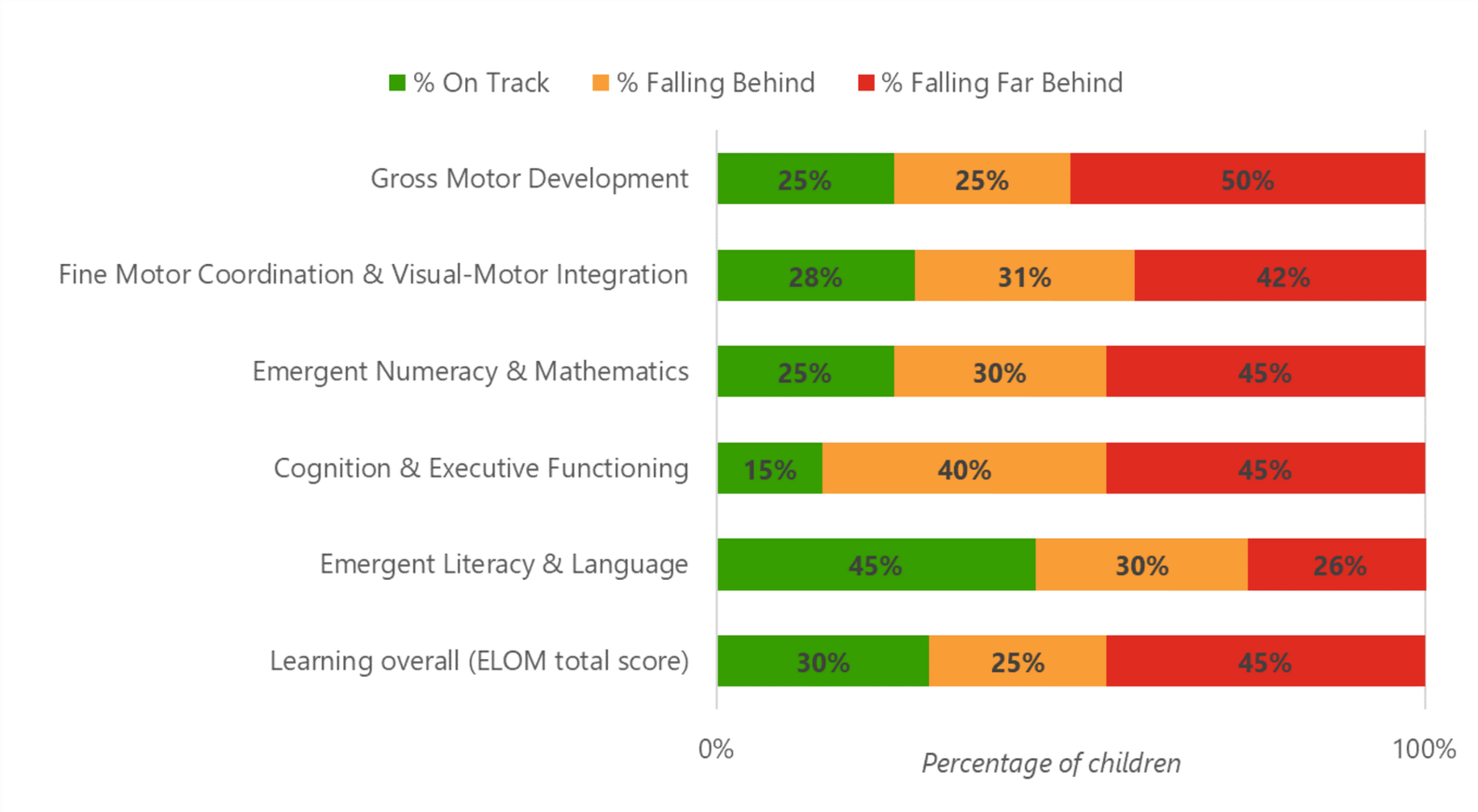


Percentage of Children On Track for Early Learning (Percentage of Children in each Performance Band):
ELOM 4 & 5 Domains



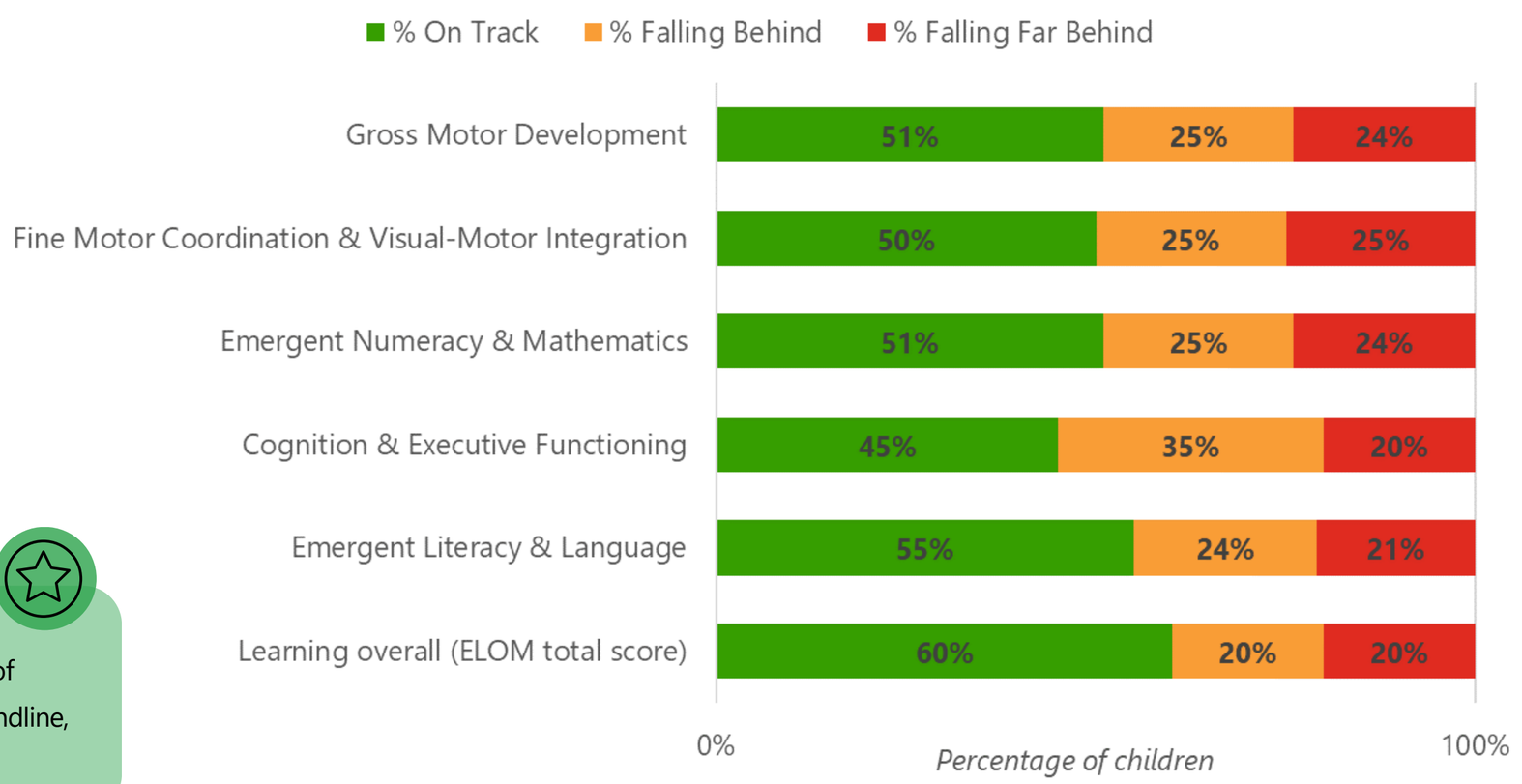
ELOM 4 & 5 RESULTS: WHAT PERCENTAGE OF YOUR CHILDREN WERE ON TRACK AT BASELINE?

Your children were assessed on all five ELOM domains. At baseline, **30%** of your sample were on track for learning overall (ELOM Total score). The graph below shows the percentage of children who were on track, falling behind, or falling far behind on each of the domains assessed at baseline, while the graph on the following page shows this for endline.



ELOM 4 & 5 RESULTS: WHAT PERCENTAGE OF YOUR CHILDREN ARE ON TRACK AT ENDLINE?

At endline, **60%** of your sample were on track for learning overall (ELOM Total score).

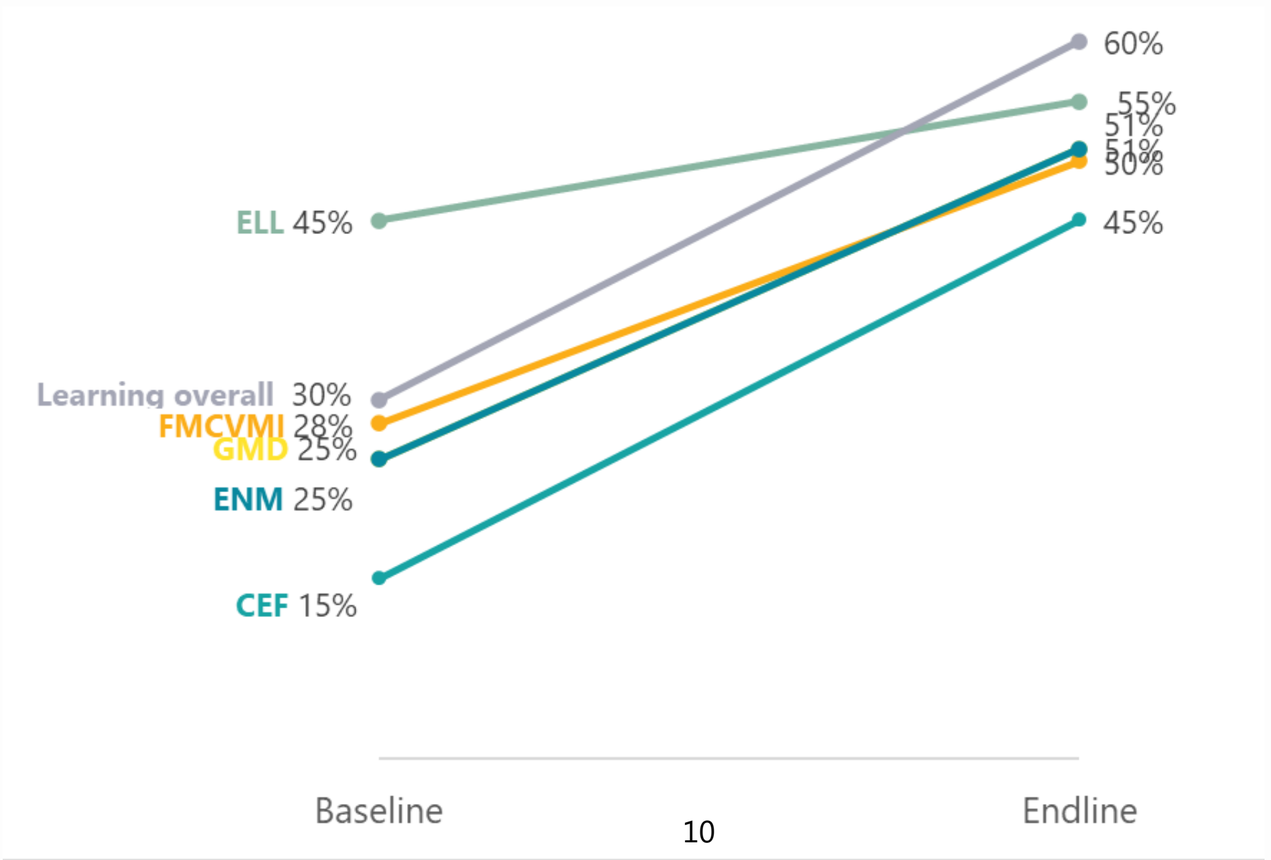


Double the percentage of chilen are on track at endline, compared to baseline.

ELOM 4 & 5 RESULTS: WHAT PERCENTAGE OF YOUR CHILDREN ARE ON TRACK AT ENDLINE?

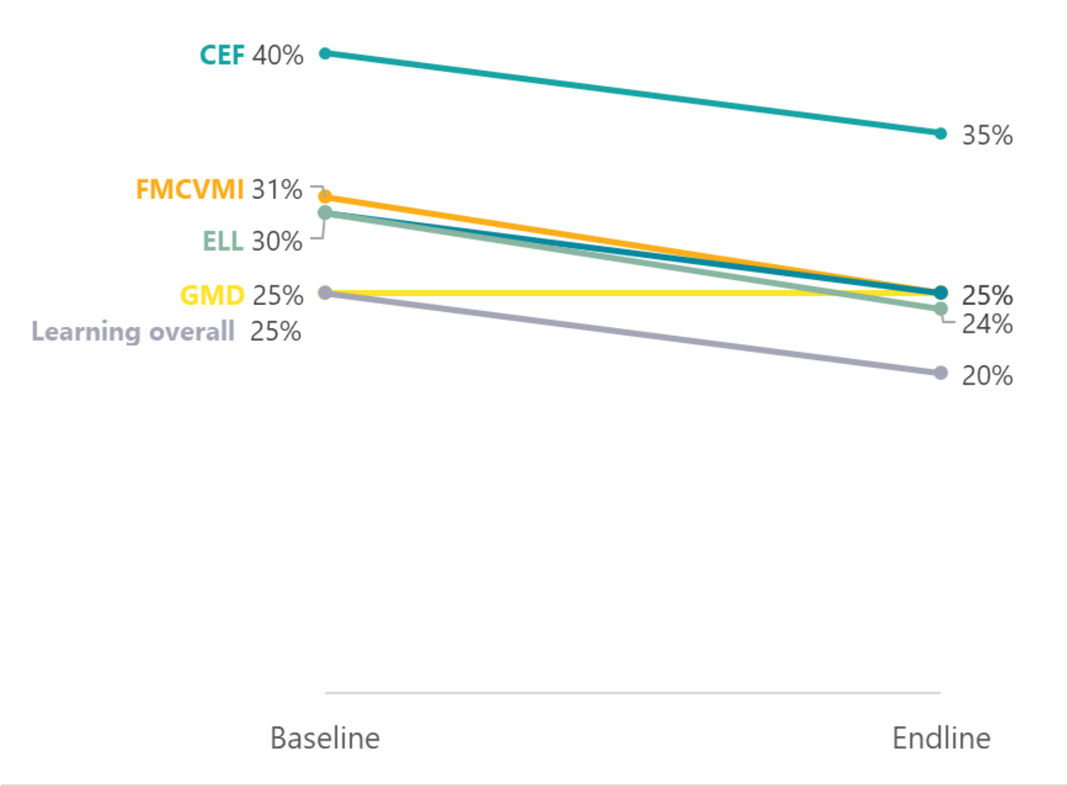
The graph below shows the percentage of children who were on track at the baseline assessment, versus the follow-up at endline. On the following page, we show the percentages of children falling behind, and falling far behind at each point in time. Please note that we use age-adjusted standards to determine which of these performance bands children fall into at baseline (when they are younger) versus endline.

PERCENTAGE OF CHILDREN ON TRACK: BASELINE VS ENDLINE

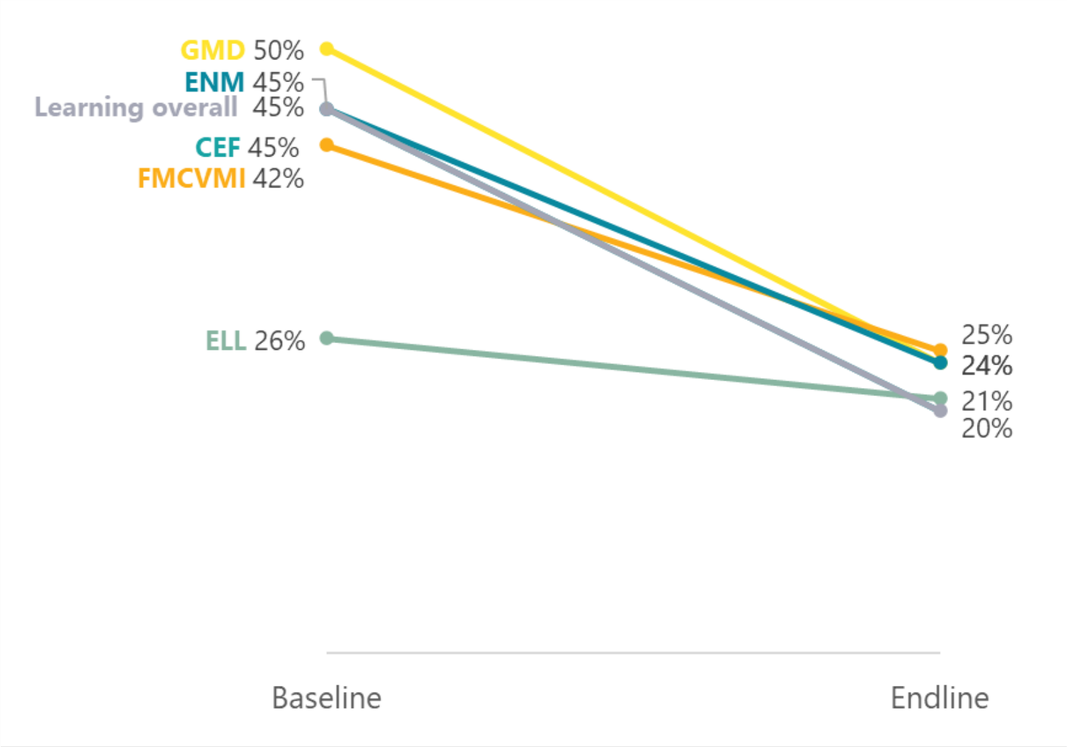


The percentage of children on track increased in time across all domains, with the largest change seen in CEF. There was also a uniform decrease in the percentage of children falling behind and falling far behind (see following graphs)

PERCENTAGE OF CHILDREN FALLING BEHIND: BASELINE VS ENDLINE

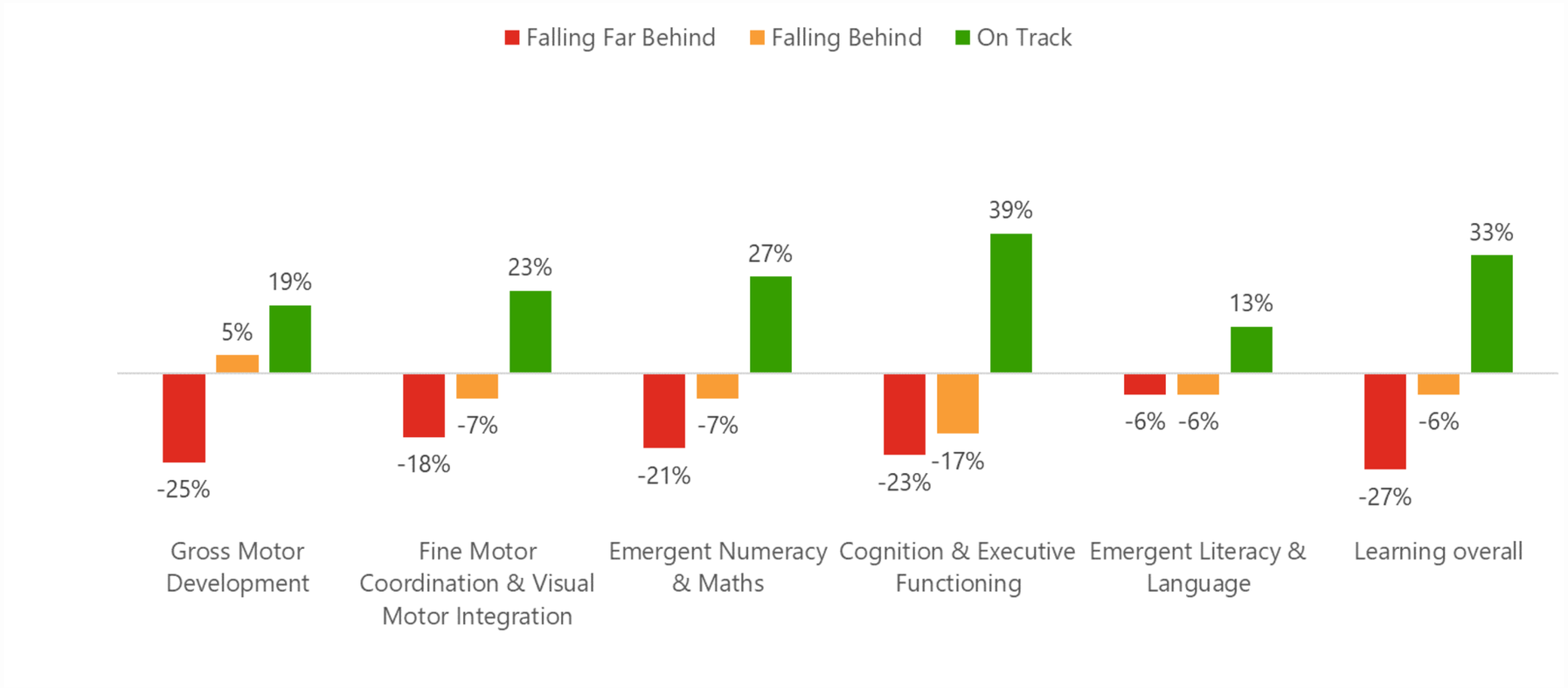


PERCENTAGE OF CHILDREN FALLING FAR BEHIND: BASELINE VS ENDLINE



ELOM 4 & 5 RESULTS: WAS THERE A CHANGE IN THE PERCENTAGE OF CHILDREN ON TRACK?

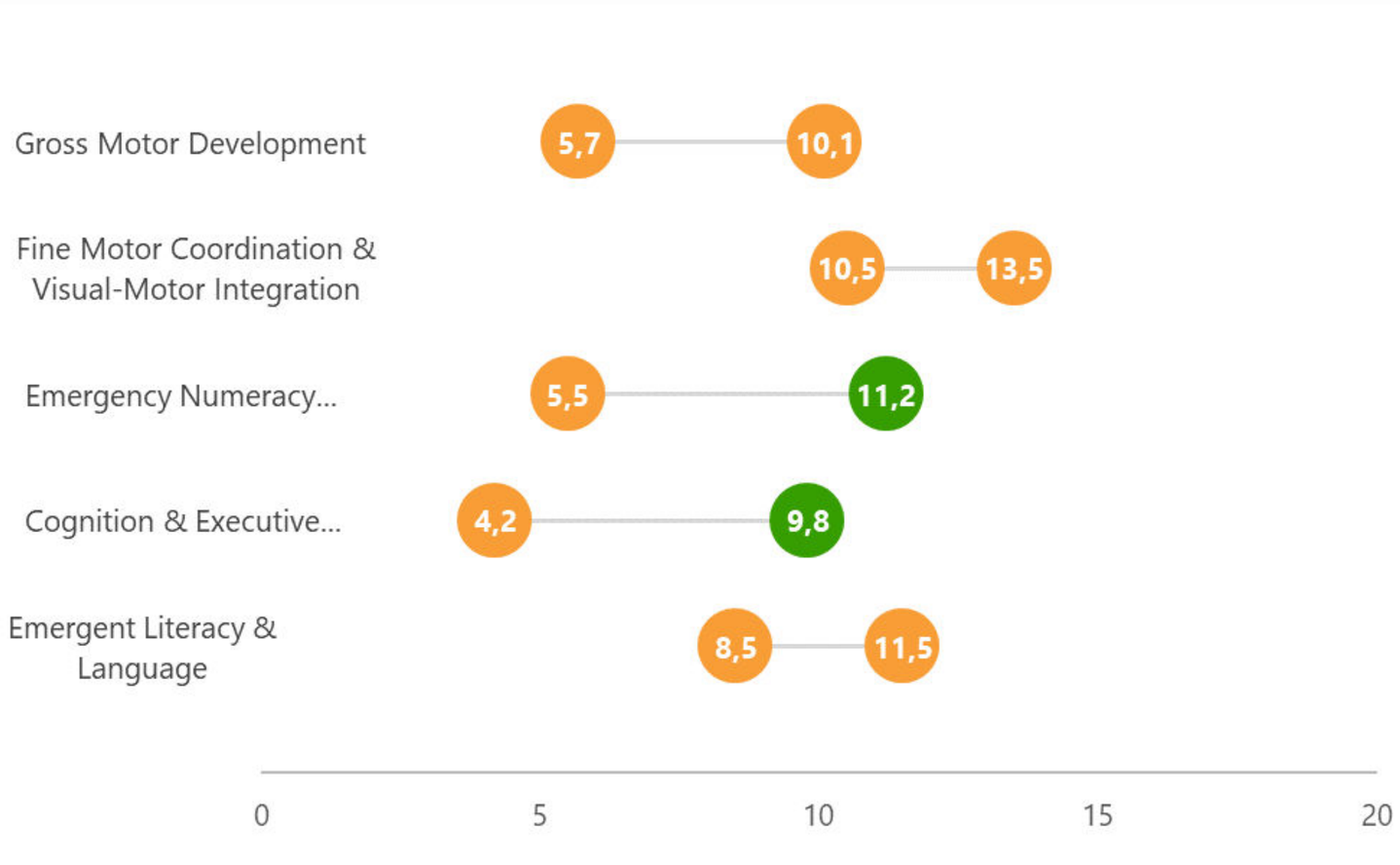
In the graph below, we illustrate the **change** in the percentage of children in each ELOM performance band between baseline and endline. Bars above the grey line indicate an increase in the percentage of children in each performance band, while bars under the line show a decrease in the percentage of children.



There were notable increases in the on track performance band across domains (particularly ELOM total and CEF). The number of children on track in CEF increased by 39% from baseline to endline, and 23% less children are now falling far behind.

ELOM 4 & 5 RESULTS: HOW HAVE SCORES CHANGED OVER TIME?

In the graph below, your sample's average ELOM domain scores are presented. Each domain has a maximum total score of 20. Baseline scores are shown in the circle on the **left,** while endline scores are shown in the circle on the **right.** The colour of the circles refers to the ELOM performance bands (**on track**, **falling behind**, **falling far behind**).



On average, your sample remained in the falling behind band between baseline and endline for GMD, FMC-VMI, and ELL.

Your sample shifted performance bands in ENM and CEF.

ELOM 4 & 5 RESULTS: IS THERE A PROGRAMME EFFECT? [1]

When assessing the developmental outcomes of children attending an early learning programme, we would ideally like to establish the extent to which these outcomes are determined by children's normal maturation due to ageing (a *maturation effect*) versus their participation in the early learning programme, independent of ageing (a *programme effect*).

To do so, DataDrive2030 has calculated a benchmark for improved ELOM scores that are the effect of maturation (read more about this process here). For total learning (Total ELOM score), we use the benchmark of 1.04 points per month. This means that we expect children to naturally improve by 1.04 points every month due to the effects of ageing and normal growth. Benchmarks have also been calculated for each ELOM domain.

A programme effect is only observable above and beyond this benchmark, as we see improvement in ELOM performance outside of maturation. While this number may indicate the effectiveness of your programme, it is important to remember that it does not *only* contain change attributable to the programme. There are likely several other factors that also contribute to growth outside of maturation, such as children's home learning environment.

We have calculated your programme effect using these maturation benchmarks. This is displayed on the following page. We do this by:

1. Calculating a maturation effect over your programme period (using the benchmarks described above).
2. Calculating an average gain in ELOM scores (the difference in scores between endline and baseline).
3. Subtracting the maturation effect from the ELOM gains.
4. Establishing the effect size of the programme effect (using Cohen's d).

ELOM 4 & 5 RESULTS: IS THERE A PROGRAMME EFFECT? [2]

ELOM Domain	Maturation Effect (over X month period)	ELOM Gains (difference between baseline and endline)	Programme Effect	Effect Size
Gross Motor Development	1.65	2.54	0.89	None
Fine Motor Coordination & Visual-Motor Integration	1.82	1.45	-0.37	None
Emergent Numeracy & Mathematics	0.9	2.75	**1.85**	**Small**
Cognition & Executive Functioning	1.7	3.99	**2.29**	**Small**
Emergent Literacy & Language	2.1	2.3	0.2	None
Total Learning (ELOM Total score)	8.23	14	**5.77**	**Small**

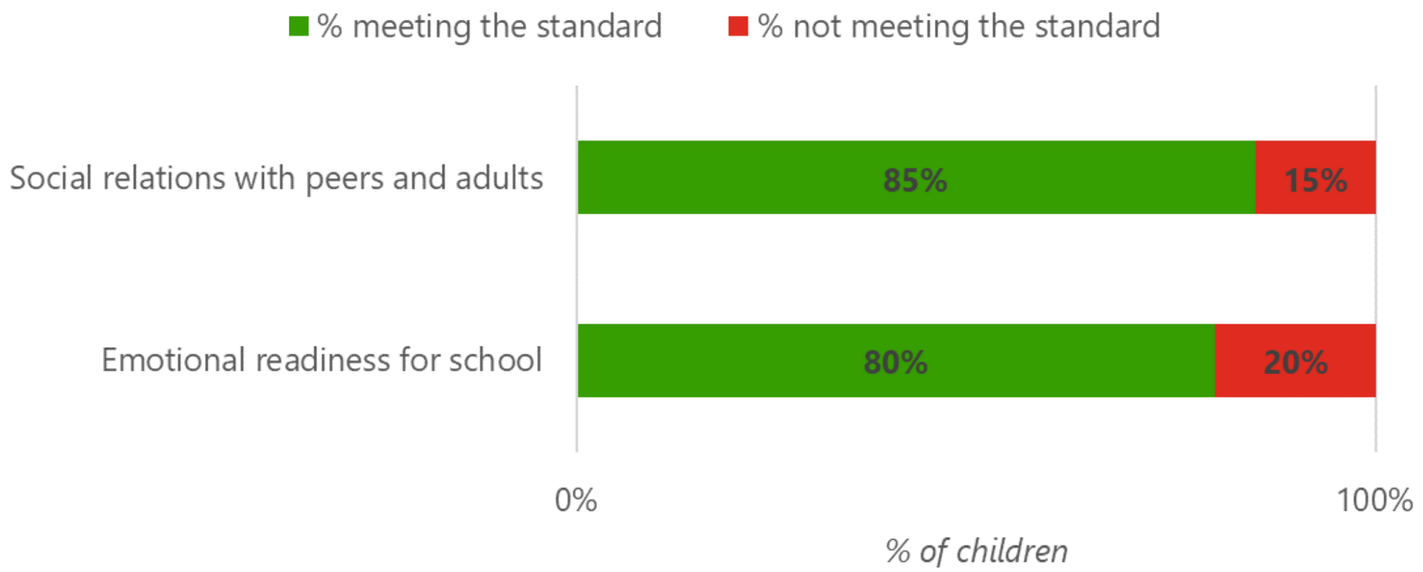
What is an effect size?

Cohen's d is one common convention used to establish an effect size. An effect size is a measure used in statistics to quantify the size or strength of a difference or relationship, in this case - between exposure to the programme and ELOM scores. It helps you understand whether your findings have any meaningful or practical significance. To be practically significant, we want to see at least a small effect size (i.e., being exposed to the programme had a small effect on ELOM scores).

ELOM 4 & 5 RESULTS: HOW DOES YOUR SAMPLE SCORE ON SOCIO-EMOTIONAL FUNCTIONING?

The ELOM Social-Emotional Rating Scale assesses children in terms of their emotional readiness for school and their social relations with peers and adults. The scale is used alongside the ELOM 4&5 assessment in order to measure aspects of the same child's behaviour that cannot be reliably assessed by a stranger in a testing situation. It consists of a set of questions that can be completed by the child's teacher (or playgroup facilitator) once they have known the child for at least 4 months. For this reason, this assessment was only completed at endline for your study.

The graph below depicts your sample's socio-emotional functioning performance in relation to the ELOM standards.



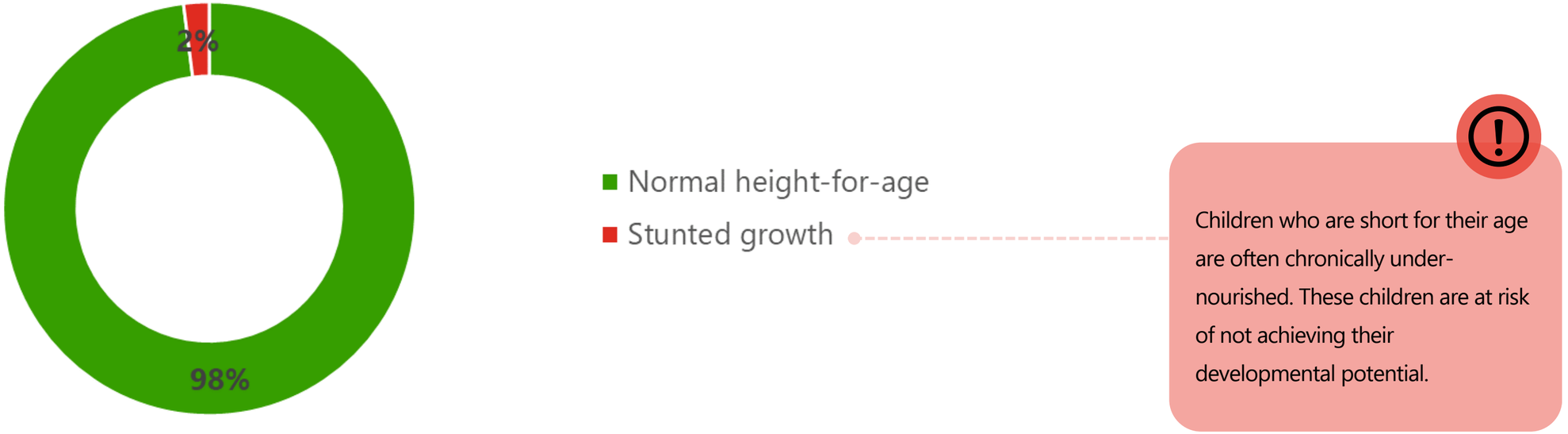
The majority of your sample is meeting the standard for emotional readiness for school.

15% of your sample is not meeting the standard in terms of their social relations with peers and adults. These children might struggle to: cooperate with peers, to resolve problems without aggression, and to seek support from familiar adults. 20% are not meeting the standard for emotional readiness for school. These children may struggle with age-appropriate levels of independence, to express their needs and feelings, to adjust to change, and to initiate activities.

HEIGHT-FOR-AGE: IS YOUR SAMPLE EXHIBITING NORMAL GROWTH?

The Thive by Five Index found that by the age of 4 years, a child who has stunted growth is, on average, 5 to 6 months behind their peers when it comes to early learning. As part of your ELOM study, the sample children's height was measured in order to track their growth status. This was done using a portable stadiometer, which uses a free-standing ruler and a sliding headpiece that rests on top of the child's head for an accurate height measurement.

In the graph below, we present the percentage of your sample showing normal vs stunted growth.



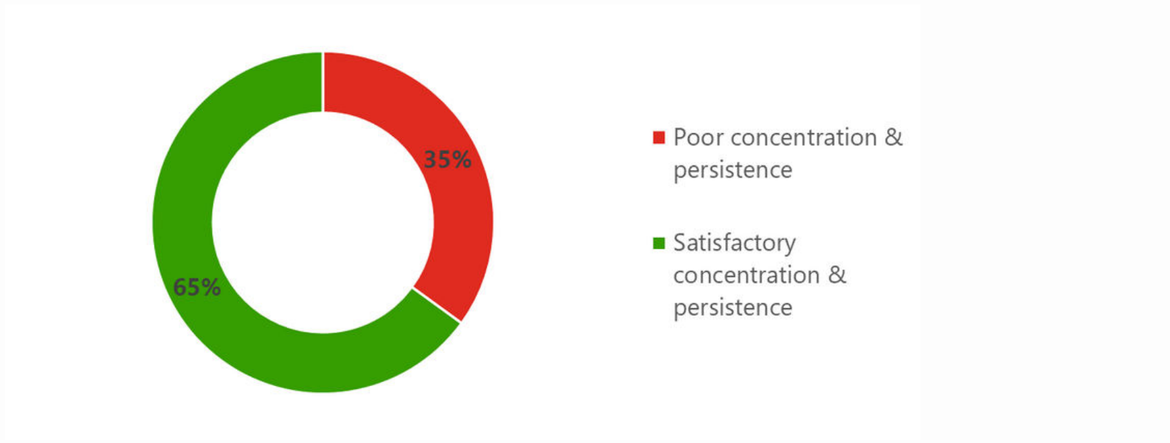
Children who are short for their age are often chronically under-nourished. These children are at risk of not achieving their developmental potential.

TASK ORIENTATION: HOW WELL DID YOUR SAMPLE CONCENTRATE DURING ASSESSMENT?

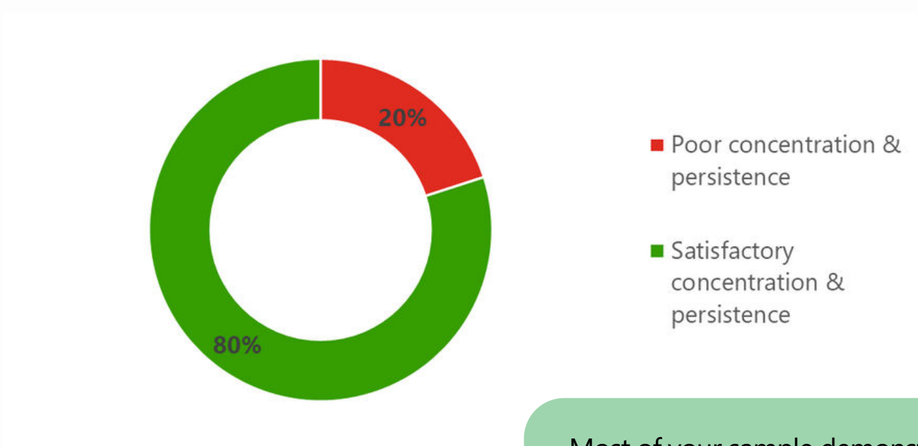
Task orientation measures how well children concentrate and are able to persist on tasks during an ELOM assessment - important attributes for entering school. Your sample's task orientation scores were assigned by the ELOM assessors after completing each child's assessment. Note that the scores are subjective and may be affected by factors such as the assessor's own ability to hold the child's attention.

The graphs below show the proportion of your sample that demonstrated satisfactory versus poor levels of concentration and persistence at baseline and endline.

Baseline



Endline



Most of your sample demonstrated satisfactory concentration and persistence during ELOM assessments at both points in time, meaning that they were able to stay on task.

KEY FINDINGS

This report provides details on how your sample of children performed, on average, on the ELOM 4 & 5 assessment at the beginning of the programme year, and at the end. The report is intended to help you identify areas of strengths and weaknesses among your children, relative to the ELOM standards, to help inform your programming and the effectiveness thereof. While this report provides an estimate of your programme's effect, it cannot attribute this effect completely to your programme - as other factors known to affect child outcomes have not been measured. We also cannot comment on the quality of your programme's delivery, or issues with its implementation, which will have a large influence over the child outcomes reported.

In summary, we found that:

- Across all ELOM domains, there was an increase in the percentage of children on track, and a decrease in children falling behind and falling far behind.
- On average, your children went from falling behind in ENM and CEF to on track.
- We also found a programme effect in these same domains, as well as ELOM Total (learning overall). The effect sizes were all small. This means that the significant improvement we see in these domains may be attributed to your programme, as opposed to normal child growth and maturation.
- Your sample is meeting the standard in terms of their socioemotional development, and almost all children are displaying normal physical growth.

We recommend that you complement this study with an assessment of programme quality to try and identify what is going right and what can be improved in terms of curriculum delivery and programme design. Ideas for improvement are provided on the following pages. We recommend that you pay particular attention to the recommendations provided for the domain in which we saw no programme effect: CEF.

WHAT ACTIONS CAN BE TAKEN BASED ON THE DATA?

We recommend that you study this report together with your staff to determine your priorities for the coming year. On the following pages we have included some ideas for interventions and/or programmatic changes that you might want to focus on. Our recommendations are based on the literature on what works. We begin with the domains that we have flagged based on your results.

Gross Motor Development

1. Support safe play spaces: Support programmes in establishing safe and accessible areas for children to play, both indoors and outdoors, that are free of hazards.
2. Encourage outdoor play: Outdoor play promotes physical activity and the development of gross motor skills. If possible, children should be encouraged to run, jump, climb, swing, and explore in outdoor settings.
3. Provide age-appropriate toys & materials: A variety of materials can promote gross motor skills, such as balls, hula hoops, jump ropes, and climbing structures.
4. Structured physical activities: Provide structured activities like group games, sports, and dancing. These activities not only develop gross motor skills but also provide opportunities for social engagement and teamwork.

Fine Motor Coordination & Visual-Motor Integration

1. Encourage writing, arts & crafts: Encourage children to engage in activities that involve writing, drawing, cutting, colouring, and using small tools like paintbrushes, scissors, and glue sticks.
2. Provide age-appropriate toys & materials: Puzzles, building blocks and beads with string require fine motor manipulation and hand-eye coordination.
3. Train teachers to provide encouragement and praise: Fine motor skills can be frustrating for children to develop. Patience and positive reinforcement can help children to persist with these tasks.

Emergent Numeracy & Mathematics

1. Include number talk in everyday routines: Encourage children to talk about numbers and mathematical concepts in their daily lives. Discuss the time, money, measurements, and quantities encountered during daily routines.
2. Teach children counting songs: Incorporate counting songs and finger counting into daily activities. These help children become familiar with numbers and counting in a fun way.
3. Provide age-appropriate toys & materials: Hands-on materials like counting blocks, beads, and puzzles help children visualise and understand mathematical concepts.
4. Provide structured games and activities: Sorting games (colour, size, object), hopscotch, counting, and matching will help to engage children in numeracy and mathematical concepts.

WHAT ACTIONS CAN BE TAKEN BASED ON THE DATA?

We recommend that you study this report together with your staff to determine your priorities for the coming year. On this page we have included some ideas for interventions and/or programmatic changes that you might want to focus on to improve child outcomes. Our recommendations are based on the literature on what works.

Cognition & Executive Functioning

1. Encourage pretend play & storytelling: Pretend play and storytelling helps children develop their imagination, creativity, memory, and language skills.
2. Incorporate music & rhythm: Playing music, singing, dancing, and playing musical instruments can enhance memory and pattern recognition.
3. Train teachers to create a supportive learning environment: A supportive and nurturing environment can ensure that children feel safe to make mistakes and learn from them.
4. Encourage outdoor exploration: Spending time outdoors exploring nature and encouraging children to be curious. Discuss observations, identify plants and animals, and encourage questions about the world to stimulate their critical thinking.
5. Incorporate problem-solving games: Age-appropriate challenges and puzzles can encourage children to think critically and find solutions. Start with simple tasks and gradually increase complexity.

Emergent Literacy & Language

1. Incorporate daily reading aloud: Provide a variety of books to expose children to different concepts, vocabulary, and ideas. Encourage children to ask questions and discuss the stories.
2. Encourage teachers to actively talk & listen: Engaging in conversations with children encourages them to express themselves, ask questions, and share their thoughts.
3. Incorporate vocabulary into daily activities: Introduce new words and concepts during everyday activities. Describe objects, actions, and feelings using descriptive language.
4. Provide age-appropriate materials: Introduce words and letters through games, flashcards, and alphabet books. Encourage teachers to make learning letters and their sounds enjoyable and interactive.
5. Provide a literacy-rich environment: Provide classrooms with written materials such as books, magazines, newspapers, and educational posters, make reading materials readily accessible and familiar.

Social & Emotional Functioning

1. Train teachers to model positive social behaviour: Teachers can be positive role models by demonstrating good social skills, such as active listening, empathy, politeness, and co-operation with both children and colleagues.
2. Encourage sharing & teamwork: Children should be taught to share toys and take turns. Collaborative games that require teamwork can teach children to work together.
3. Foster the development of empathy: Feelings and emotions can be discussed regularly with children, encouraging them to identify and validate others' emotions . Books that explore emotions can also help to explore characters' feelings.

WHAT ARE BEST PRACTICES TO SUPPORT TEACHERS?

In addition to the actions mentioned previously, continued professional development and support for teachers is key to improving child outcomes. Best practices from the literature on supporting and developing teachers include the following:

Management Best Practices	Peer Support Best Practices	Training Best Practices	Tailoring Support
• **Provide individual mentoring** by pairing more experienced staff members, or someone from another programme, with less experienced teachers. • **Ensure supervision** that includes actual time observing in the classroom, joint planning, monitoring, regular feedback and discussions around goal-setting. • **Create an enabling environment** that is supportive and developmental, ensuring leadership provides practical assistance and opportunities for on-the-job learning.	• **Create time for group reflection** among practitioners who work together or in similar spaces, so they can share successes, challenges and troubleshoot together. • **Create time for critical individual reflection** in which practitioners consider their strengths and what is working well in their contexts, as well as to identify the areas in which they need to develop. This should also include a critical reflection on teachers' own beliefs about how children best learn and develop.	• **Explain the reasons** behind certain classroom practices to ensure practitioners understand how activities work to achieve outcomes. • **Provide concrete examples** of good practice, such as video clips or observing a skilled teacher at work. • **Include role plays** and other practice-oriented activities that enable practitioners to practice engaging in different activities and interacting with children.	• **Gathering input from teachers** on what types of support they may find helpful can also be useful in deciding whether and how to update your current activities, and ensuring that teachers get the targeted support that they need.

HOW TO PLAN FOR YOUR NEXT STEPS

Turning data into action is a critical component of quality programme planning and delivery. Consider how you will take the insights from this report and use them effectively to enhance your programme, or what additional information you need to do so.

Collectively identify 5 key priorities	Determine the actions needed to turn those priorities into reality	Agree on the people responsible for taking action	Agree on deadlines
• What changes need to be made based on the ELOM results? Or what do you need to investigate further? • What key issues require your immediate attention?	• What particular actions, tasks or deliverables are needed to turn these five priorities into reality? • What do you need to do, or who do we need to consult?	• Which team members are responsible for each action item? • What support do they require?	• By when should these action items be completed?

A planning worksheet to work through with your team is available here.

This report was produced by DataDrive2030 as part of our efforts to democratise early years data, making relevant information accessible, understandable and actionable for all key stakeholders.

www.datadrive2030.co.za

DATADRIVE 2030