DATADRIVE 2030

Quality counts: Exploring the quality of early learning programmes in South Africa

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TABLE OF CONTENTS

1. INTRODUCTION

1.1 Background

The quality of an early learning programme (ELP) is a significant factor in how much children benefit from it. This is supported by a significant body of global evidence that underscores the quality of early education interventions as a cornerstone for achieving optimal child outcomes.[1] Numerous studies including studies from low- and middle-income countries (LMICs) have found programme quality to predict child developmental outcomes.[2,3,4,5] This evidence makes a strong case for the prioritisation of quality in early childhood programmes and interventions over and above mere provision of programmes.

The quality of an ELP can be broadly divided into two categories, structural quality and process quality.[6] Structural quality factors include the physical setting, teacher qualifications, group size and ratios, and access to learning materials. Process quality factors include relationships and interactions between the children and teachers, pedagogical (teaching) strategies, and the curriculum. Research from both high-income countries and LMICs points towards process quality factors having a greater influence on child outcomes compared to structural quality factors.[7,8,9]

While the global evidence is compelling, there is still very limited evidence of programme quality and child outcomes in South Africa.

1.2 The ELOM Learning Programme Quality Assessment

The Learning Programme Quality Assessment (LPQA) forms part of DataDrive2030's suite of assessment tools and has been designed to measure the quality of group learning programmes targeting children aged 3-5 years. The LPQA was developed to address the need for an easy-to-

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administer measure of programme quality that is aligned with the South African curriculum framework. Many of the existing tools required extensive training, observers with qualifications in ECD, and were not aligned with the South African curriculum. To administer the LPQA, trained assessors spend a minimum of 2 hours observing the early learning programme (ELP) and score their observations on a 3-point scale (inadequate, basic, good) across 5 areas: the learning environment, assessment of learning and teaching, relationships and interactions, curriculum, and teaching strategies. The technical manual contains additional information on how and why the items were chosen as well as the tool psychometry. For more detailed information about each subscale, refer to Table 1 below.

Table 1: LPQA subscales

Structural quality	Process quality
The learning environment (6 items) For example: Classroom arrangement, a variety of learning and play materials that are developmentally appropriate and accessible to children, and open-ended materials in the classroom.	**Relationships and interactions (4 items)** For example: Promoting positive child-child interactions, warm and sensitive staff-child interactions, acknowledging children's efforts, and use of positive discipline.
Curriculum (5 items) For example: Use of the National Curriculum Framework curriculum, programme planning, a balanced daily programme, and frequent and varied numeracy and literacy activities.	**Teaching strategies (4 items)** For example: Asking open ended questions, encouraging independence, extending children's learning, and providing opportunities for free choice.
	Assessment for learning and teaching (2 items) For example: Frequent observation of children's progress, and recording child's progress systematically.

The LPQA was created in 2021 and first used on a subsample of the ELPs included in the Thrive by Five Index 2021. Subsequently, the LPQA has been used by organisations that support ELPs to track the programme quality and identify areas of improvement.

The aim of this insight brief is to explore the data collected to date to better understand the quality of ELPs in South Africa and the relationship with child outcomes.

1.3 Other assessment tools included in the analysis

1.3.1 The ELOM 4&5 Years Assessment Tool

The ELOM 4&5 is an age normed assessment tool for use with children in two age groups - 50-59 months and 60-69 months. It involves a direct assessment of children's performance in five developmental domains:

- Gross Motor Development (GMD);
- Fine Motor Coordination and Visual Motor Integration (FMC-VMI);
- Emergent Numeracy and Mathematics (ENM);
- Cognition and Executive Functioning (CEF);
- Emergent Literacy and Language (ELL).

1.3.2 Principal and practitioner interviews

Interviews were conducted with the principal and practitioner at the ELP. The principal interview included information about the ELP such as the management, staff, registration status, and fee levels. The practitioner interview was conducted with the practitioner of the 4-5 year old class (the same class the LPQA was conducted in) and included information such as their education and experience, number of children in the class, agency, and teaching practices. Principal and practitioner interviews were only done in a subsample of ELPs.

1.3.3 Socioeconomic status (SES) of the ELP

SES of the ELP is a categorical variable that was determined using ELP fees charged. This variable is based on the present value for fees before 2020 and the nominal value of fees for data years prior to 2021. Fees charged is a proxy for other factors that contribute to quality including the ability to employ and retain suitably qualified staff, purchase materials, and provide facilities and infrastructure.[6] Monthly fees fall into one of five groups (see Table 2).

2. RESULTS

2.1 Describing the sample

The total sample included in the analysis is N=2253. This dataset is open-access and available on DataFirst. Table 2 presents the distribution of the sample in each SES category. The majority of LPQA assessments have been conducted in the lowest 3 SES groups.

Table 2: Distribution of ELPs per SES group in the sample

SES category	Related ELP fee-level	Proportion of ELPs in dataset
1	R0-110	36.44%
2	R111-290	38.62%
3	R291-750	17%
4	R751-1750	4.97%
5	R1750+	3.15%

2.2 LPQA performance breakdown

Figures 1-5 below show the proportion of ELPs falling into the categories 'inadequate', 'basic', and 'good' for each item in the LPQA. The majority of ELPs in this sample are performing adequately, but are not exceeding expectations.

These figures also reveal specific items within each subscale that ELPs appear to be struggling with (i.e. more than 25% of the ELPs scoring inadequate). These include room arrangement, indoor materials, gross motor materials, child observation, and free choice. An inadequate rating on these items would indicate that the classroom has less than three designated learning areas, that there are not enough materials for play and learning, that there is little or no outdoor equipment, that there is no observation record or book in regular use, and that children have little to no free choice (or free play).

On the other hand, items that ELPs appear to be doing well on (i.e. more than 25% scoring good) include all the items under the relationships and interactions subscale, as well as staff-child engagement under the teaching strategies subscale. A good rating on these items indicate that practitioners help children develop good social skills, that the staff interactions with the children are warm, respectful, and sensitive to how children are feeling, that staff regularly use encouragement to acknowledge children's efforts, that staff practice positive discipline, and that staff use a variety of techniques to support and extend children's learning.

FIGURE 1: Proportion of inadequate, basic, and good ratings for each item under the learning environment

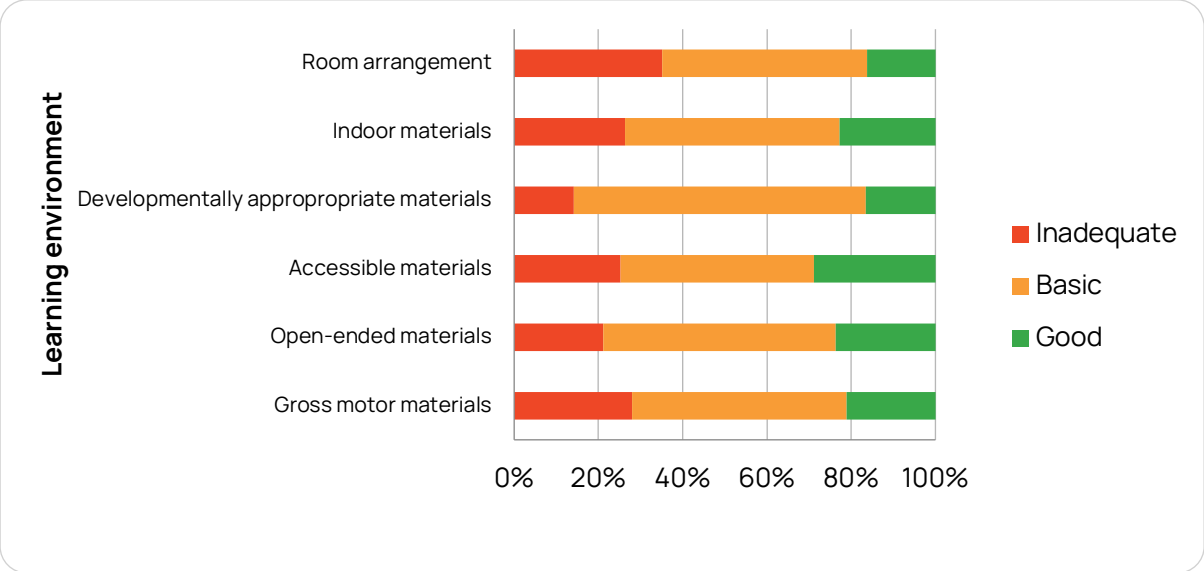


FIGURE 2: Proportion of inadequate, basic, and good ratings for each item under the relationships and interactions subscale

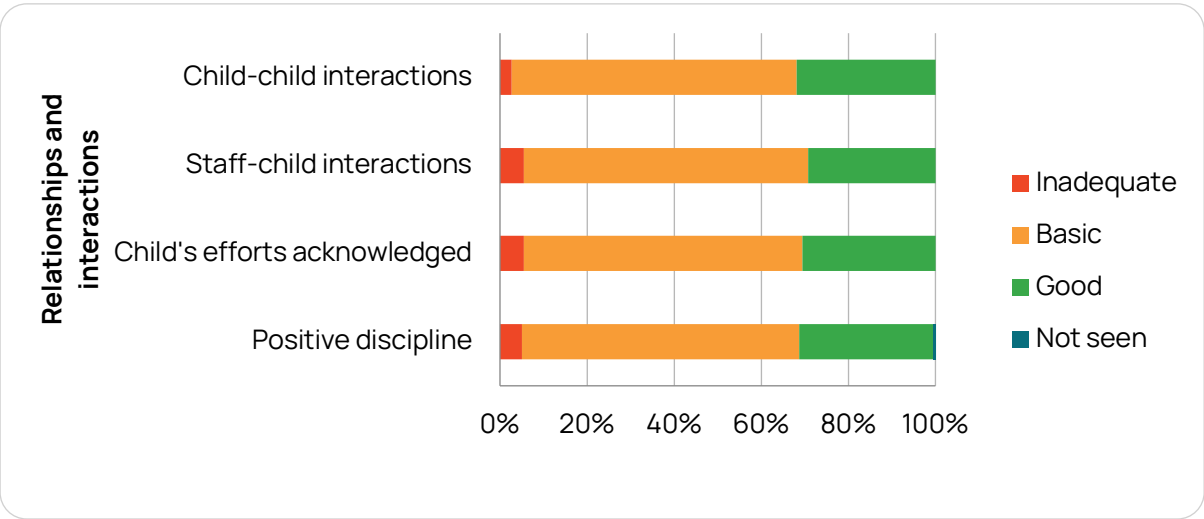


FIGURE 3: Proportion of inadequate, basic, and good ratings for each item under the assessment for learning and teaching subscale

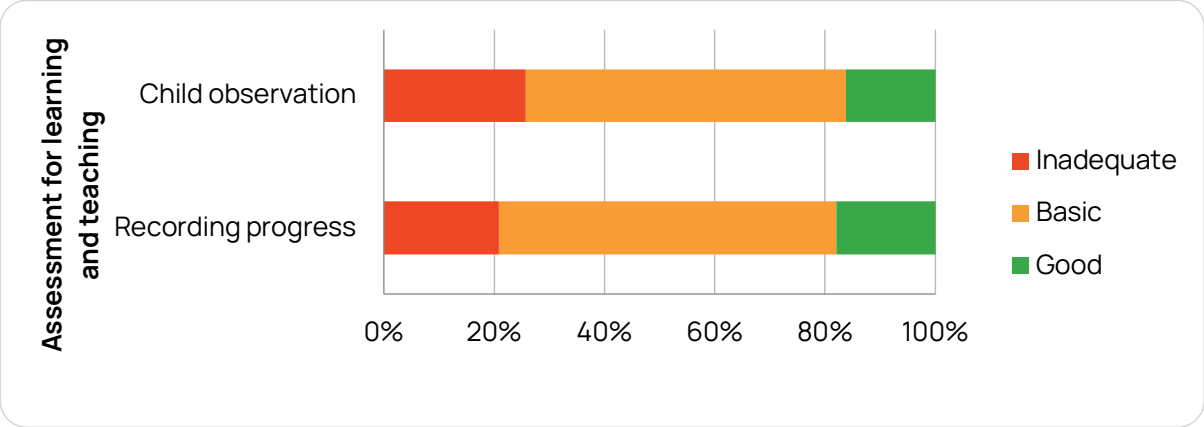


FIGURE 4: Proportion of inadequate, basic, and good ratings for each item under the teaching strategies subscale

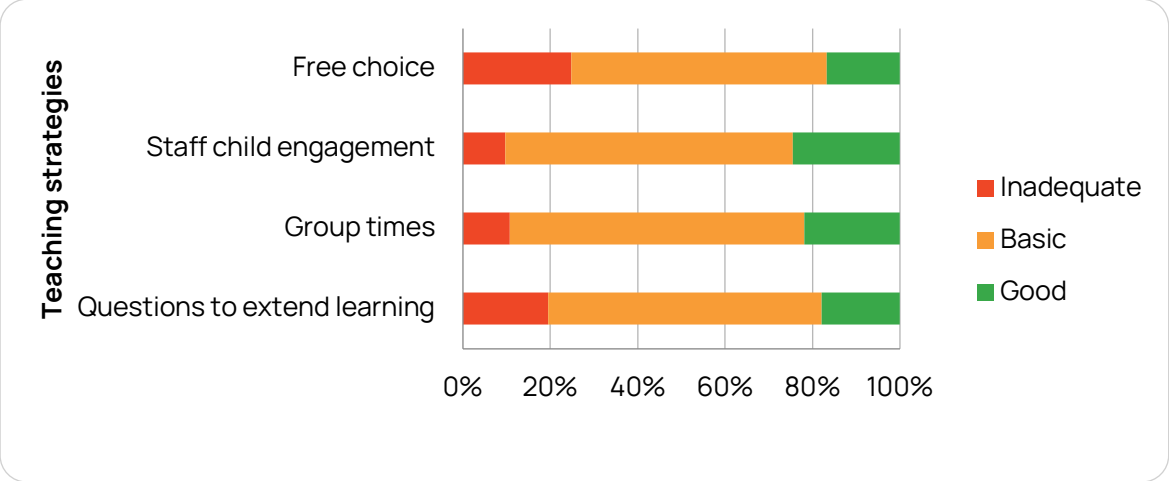
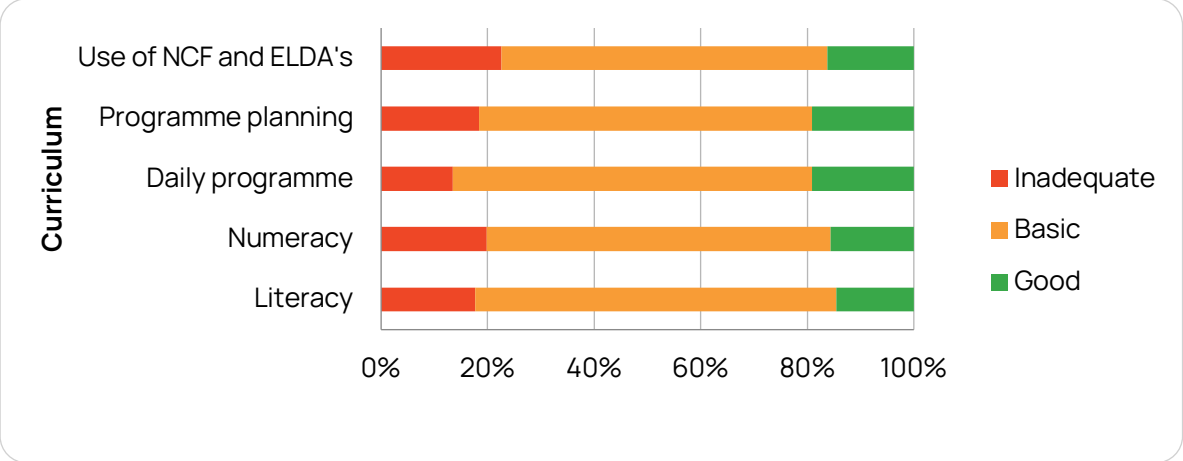


FIGURE 5: Proportion of inadequate, basic, and good ratings for each item under the curriculum subscale



2.3 Correlations

Pairwise correlations were conducted to explore the relationships between the LPQA subscales, ELOM performance, SES, and practitioner education. The next three sections (2.3.1-2.3.3) describe these relationships based on the results presented in Table 3.

2.3.1 Correlations between child ELOM score and LPQA subscales

A child's Early Learning Outcomes Measure (ELOM) score is positively and significantly associated with the LPQA subscale teaching strategies (r=0.12). This means that ELPs that were rated as having better quality teaching strategies (e.g., asking open ended questions, encouraging independence, extending children's learning, and providing opportunities for free choice), scored higher on the ELOM assessment.

2.3.2 Correlations between SES and LPQA subscales

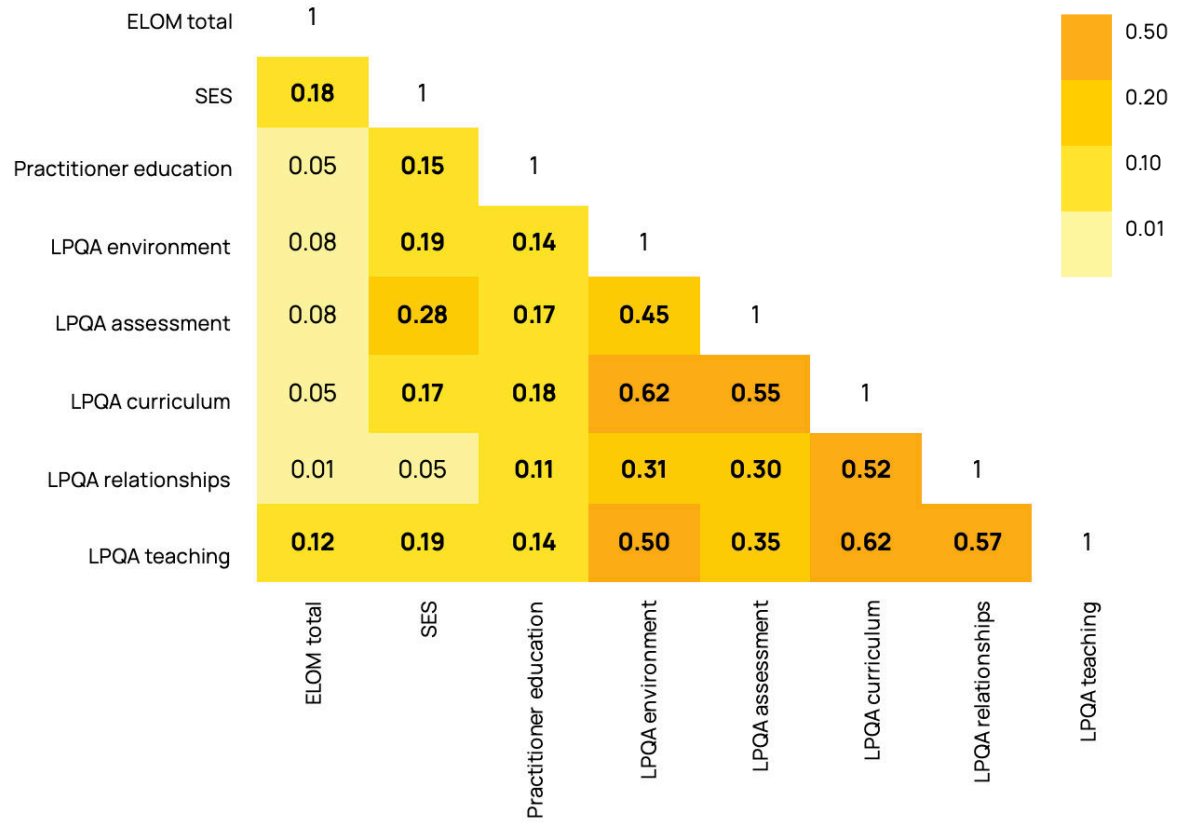
The SES of the ELP is significantly associated with all LPQA subscales except relationships and interactions. The association is positive, meaning that ELPs in higher SES categories are rated higher in terms of programme quality. The assessment for learning and teaching subscale (e.g., observation and recording of children's progress) appears to have the strongest association with SES (r=0.27), followed by learning environment (r=0.19) and teaching strategies (r=0.19).

2.3.3 Correlations between practitioner education and LPQA subscales

Practitioner education is positively and significantly associated with all the LPQA subscales. This means that ELPs in which practitioners had higher levels of education also had higher programme quality ratings. The curriculum subscale (e.g., use of the National Curriculum Framework curriculum, programme planning, numeracy and literacy activities) has the strongest association with practitioner education (r=0.18), followed by assessment for learning and teaching (r=0.17).

Table 3 presents Pairwise correlations, a statistical method used to examine the relationship between two variables. The results are expressed as correlation coefficients, which are numbers that indicate both the strength and direction (positive or negative) of this relationship. It is important to note that correlation does not imply causation—just because two variables are related does not mean one causes the other. In addition, given the large sample size, even small correlations can appear statistically significant. The correlation might be statistically significant but so small that it has little real-world relevance. That is why it is important to also consider the size of the correlation coefficient, as well as its statistical significance, to determine whether the relationship is meaningful in practice. Correlation coefficients range from -1 to +1 with 0.1 being the weakest form of a meaningful relationship.

Table 3: Pairwise correlations



Note: ELOM total = total score for ELOM 4&5 assessment. SES = socioeconomic status proxy based on fee-levels. Correlation coefficients in bold are statistically significant ($p < 0.05$). The higher the correlation coefficient, the stronger the relationship between the two variables. The colour shading on the table shows the strength of the relationship, with darker shades indicating stronger relationships.

2.4 Ordered logistic regressions

To investigate whether programme quality is associated with the ELOM 4&5 performance bands (On Track, Falling Behind, or Falling Far Behind) we conducted an ordered logistic regression. This method helps us understand how factors like SES, the practitioners' education, and the quality of their ELP programme (LPQA scores) influence the likelihood of a child being 'On Track', 'Falling Behind', or 'Falling Far Behind' in their ELOM performance. It shows how each factor affects the chances of a child moving up or down these performance bands, while keeping other factors constant.
Table 4 shows the ordered logistic regression investigating the influence of SES, practitioner education, and the LPQA total score on ELOM performance while controlling for age. The overall model is significant (chi2 = 143.89, $p < 0.001$) meaning that the factors included in this model are collectively important for predicting whether a child is On Track, Falling Behind, or Falling Far Behind. The SES variable ranges from 1 to 5, where 1 represents the lowest socio-economic status and 5 the highest. The results showed that for each step up the SES scale—for example, moving from SES 2 to 3 or from SES 4 to 5—the odds of a child being in a higher ELOM performance band increase by 56%. This is statistically significant ($p < 0.001$) indicating a strong relationship between higher SES and better early learning outcomes. Neither practitioner education, nor LPQA total score significantly affect ELOM performance bands.

Table 4: Ordered logistic regression for ELOM performance bands with LPQA total

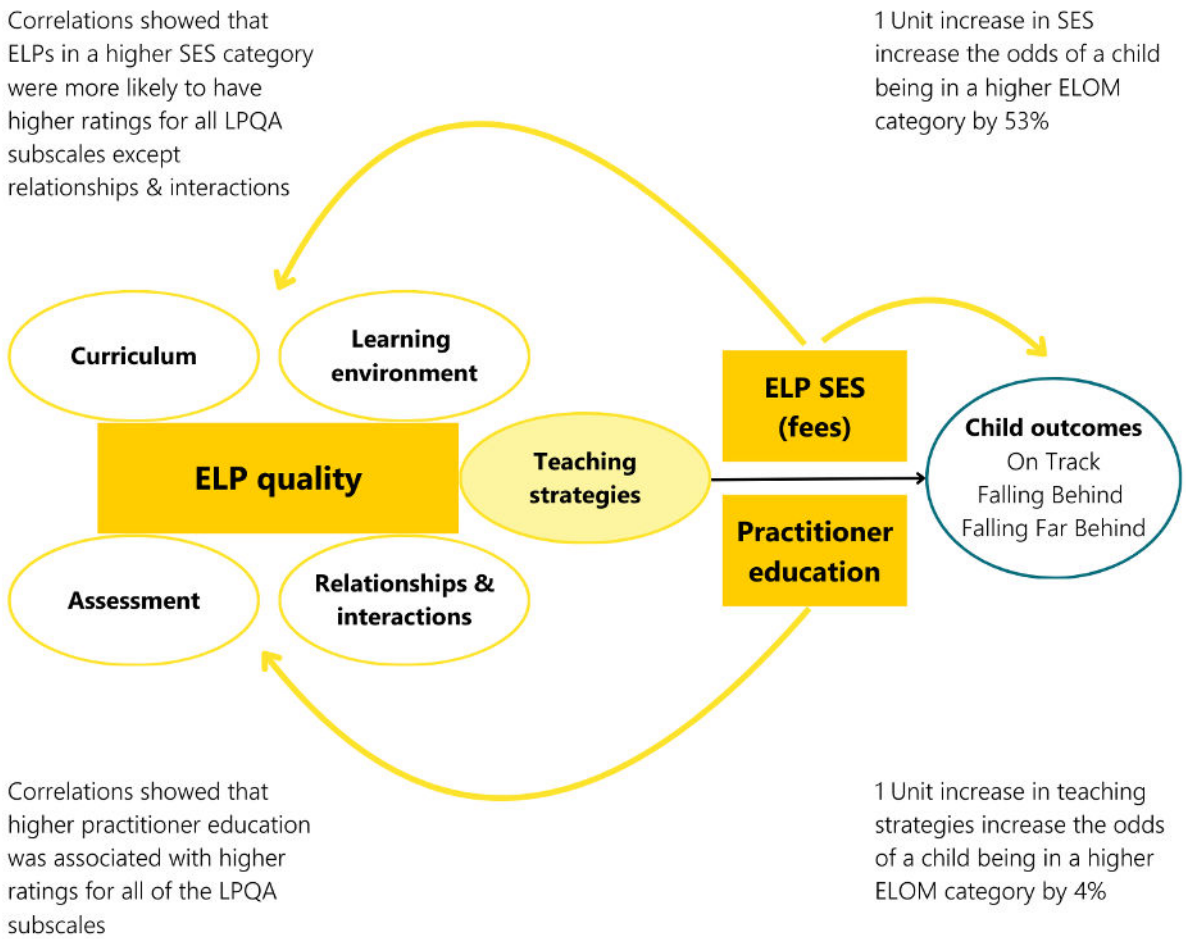
	Odds ratio	95% CI	*p* value
Child age	1.09	1.06-1.12	< 0.001
SES	1.56	1.43-1.70	< 0.001
Practitioner education	0.99	0.91-1.08	0.900
LPQA total	1.0	0.99-1.01	0.590

Table 5 shows a similar ordered logistic regression aimed at exploring the influence of each LPQA subscale on ELOM performance while controlling for age. This model is also statistically significant (chi2 = 151.08, $p < 0.001$) suggesting these factors combined help explain children's performance levels. Similar to what was found in Table 4, the model in Table 5 reveals that for every 1 unit increase in SES, the odds of a child being in a higher ELOM performance band increase by 54% and practitioner education is still not significant. Interestingly, the teaching strategies subscale does appear to significantly affect ELOM performance bands with every one unit increase in teaching strategies score, the odds of being in a higher developmental category increase by 7%. This result is statistically significant ($p = 0.011$), indicating a positive effect of teaching quality on ELOM performance bands; however a much smaller effect compared to SES.

Table 5: Ordered logistic regression for ELOM performance bands with LPQA subscales

	Odds ratio	95% CI	P value
Child age	1.09	1.05-1.12	<0.001
SES	1.54	1.40-1.68	<0.001
Practitioner education	1	0.92-1.09	0.957
Learning environment	1	0.96-1.03	0.928
Assessment for learning and teaching	1	0.95-1.12	0.473
Relationships and interactions	1	0.92-1.04	0.534
Curriculum	0.98	0.90-1.01	0.111
Teaching strategies	1.10	1.02-1.13	0.011

FIGURE 6: Summary of results



3. DISCUSSION

Global evidence suggests that programme quality is a strong predictor of child early learning outcomes and that a good quality programme can have protective effects against poverty. However, the current dataset suggests that SES (as indicated by ELP fees) is still a dominating predictor of early learning outcomes; research has found that ELPs in poorer areas tend to be of poorer quality.[6] As mentioned earlier, fees charged is a proxy for other factors that are explicably linked to quality such as staff salaries, which affects the ability to hire and retain qualified staff, the ability to purchase materials and resources for the ELP, and the ability to maintain the facilities.[6] This highlights the need for additional support for ELPs in poorer areas as they cannot rely on fees to improve quality.

Interestingly, teaching strategies, a subscale in the LPQA, appears to remain significant even after controlling for practitioner education and SES. This suggests that teaching strategies might be a strong target for training and interventions. The descriptive results indicate that there is a lot of room for improvement when it comes to teaching strategies with less than 25% of the sample being rated as good on each of the items in the subscale (see Figure 4). However, this does not mean that the other aspects of ELP quality are not important for improving child outcomes. We know that none of these factors function alone as there are likely indirect relationships that ultimately lead to improved child outcomes. Quantitative analyses are often limited in their ability to pull out complex dynamics and nuances that are present in the ELP and in the early childhood development ecosystem. When qualitative methods accompany quantitative analyses, our ability to understand and make sense of the findings improve.

The LEGO Deep Dive study[10] included qualitative methods in the form of a case study involving high performing ELPs (i.e. ELPs that produce significantly better outcomes than comparable ELPs with similar resources). Common characteristics of the high performing ELPs included a holistic and varied curriculum, inclusion of both free play and structured activities, teaching strategies that encourage problem solving and learning to be independent, warm and respectful interactions with children, and an awareness of individual children's needs. Interestingly, another common factor in these high performing ELPs was a focus on indigenous and local content and supporting the home-to-school transition. The finding that teaching strategies and other process related quality factors feature strongly in these case studies aligns with our finding that teaching strategies remained a significant predictor while controlling for SES. DataDrive2030 conducted a similar study called the "Positive Deviance Initiative" aimed to identify factors and behaviours associated with children attending low fee ELPs who significantly outperform

[10] Biersteker L, Kvalsvig J, Carnegie T, Bloch K. LEGO Deep Dive 2022 [Internet]. Department of Basic Education; 2023. Available from: https://www.education.gov.za/Portals/0/Documents/Reports/Lego%20Deep%20Dive%202022.pdf?ver=2024-02-21-111434-373

their peers across various outcomes. This study identified 'positive deviant' sites, or in other words, low-fee ELPs that have high performing children and identified characteristics of the ELP that were associated with positive deviance. These included practitioners demonstrating attentiveness through consistent and responsive interactions with children, using transition signals to implement routines, and creating a structured environment that promotes children's sense of safety and ability to explore and learn. Attentiveness was also evident in how practitioners closely observed children's play to identify teachable moments and provide immediate feedback. This responsive engagement was a blend of child-initiated and practitioner-initiated activities. Again, this evidence points towards the importance of relationships and interactions and teaching strategies. Both the LEGO Deep Dive and the Positive Deviance Initiative highlighted additional factors at the ELP level that lead to improved child outcomes and higher quality ELPs. Community embeddedness, caregiver engagement with the ELP, leadership and management, guidance and mentoring, staff professional development, and good staff relations are examples of these factors.

Although these results suggest that programme quality is important, there are indeed other factors that influence a child's early learning outcomes at the child and household level. Some examples include household income status, caregiver education, genetics, child social-emotional functioning, the home learning environment (access to resources and caregiver engagement), and even exposure to stress.

Researchers, funders, and organisations must keep this in mind when assessing programmes and interventions as ELP quality may only be able to move the needle so much. Furthermore, ELPs operating in low-income areas with limited access to training opportunities or physical resources may be constrained in their ability to create and maintain high quality learning environments.

Other limitations in the current dataset include the cross-sectional nature of this dataset; longitudinal studies are needed to truly unpack the effect of quality on child outcomes. Additionally, this dataset has a very small proportion of high-income ELPs, which may be limiting our findings.

Encouragingly, there is momentum in the early childhood development ecosystem in South Africa that is driving increased data collection on key themes such as the quality of ELPs as seen by the LEGO Deep Dive, ECD Census, Thrive by Five Index, and DataDrive2030's positive deviance work. The more data is collected, the more evidence we will have for what drives improved child outcomes. An exciting example of this is the Thrive by Five Index 2024, a national study that is collecting data on child outcomes, ELP quality, and household information. This dataset will be released in 2025, the findings of which will be generalisable to the South African early childhood population. This will in turn lead to increased opportunities for advocacy, impacts on policy and key decision makers, resource allocation, training, and ultimately increasing the number of South African children thriving by five.

3.1 Recommendations for ELP staff

Given the emergence of teaching strategies as a predictor of child outcomes in this sample, the following recommendations will focus on some of these strategies. However, it is important to remember that all aspects of quality are important and ELPs should always be striving for the highest quality they can achieve to meet the needs of the children.

Making time for free play

Free play, where children have free choice about where to play, what to play, and who to play with, is often overlooked and under-valued. A 4-hour programme should have at least 30 minutes of free play and a full day programme should have a minimum of 1 hour of free play.

Actively engaging with children during non-teacher-led activities

During activities such as free play or small group times, staff should avoid only supervising and instead use techniques to support and extend children's learning during these times. Techniques include having child-led conversations, modelling how to do something, joining in play, suggesting a simpler or more advanced activity, adding information or questions about something the child is interested in.

Allowing children to contribute their ideas during large group times

Group times are when all children are engaged in the same activity organised by a practitioner (e.g., story time, morning ring). During these times, children should be asked to share their ideas and experiences at their own developmental levels. This is more than just chanting a response to a question.

Asking open-ended questions

Open-ended questions are those that go beyond a question to which there is only one answer. Open-ended questions require further thinking by the child. These are often the what, how, and why questions (e.g., what do you think…? How would you have done it differently…? Why do you think they did it this way…?).

Providing opportunities for independence and autonomy

Staff should encourage children appropriately to do things for themselves and to take initiative. Examples of promoting independence would be encouraging children to dress themselves and tie their shoes, pour their own water or fetch their own lunch, help tidy up or set an activity up, provide opportunities for independent problem solving (allow children to try and solve tasks on their own before providing the answer), or take initiative (trying things in different ways or suggesting games and activities to the teacher).

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