Early Learning and Development in Ethiopian Preprimary Schools

Asefa Leta, Bekama Seleshi * & Alelign Arutie

Educational Assessment and Examinations Service (EAES)

Skylight Hotel, Addis Ababa

29 August 2025

Outline

- Introduction
- Rationale
- Objective
- Methods
- Findings
- Conclusion
- Recommendation

Introduction

- Early childhood is a time of special importance in terms of the cognitive, physical, emotional, spiritual, and social development affecting a child's overall well-being.
- Early childhood development provides a foundation for healthier and better educated nations.
- Investment in early education is extremely important and the results consist of reduced anti-social deeds, increased physical and mental strength of individuals and resistance to life changes.

Introduction…

- Later learning and development are built up on these early time experiences and education.
- Early childhood education not only imparts fundamental academic abilities but also significantly contributes to the development of social, emotional, and cognitive skills.
- Children attending high-quality pre-primary education programs are more likely to develop the school-readiness skills necessary for success in primary school (UNICEF, 2019).

Rationale

- To address the issue of low learning outcomes in nations all over the world, it is imperative to establish accurate and consistent evaluations of young children's development, and their early learning environment and experience (Young Lives, 2016).
- MELQO 2022 (baseline study) indicated that the overall performance mean score of pre-primary children in four basic domains is found to be 48.9% which is less than average score (JEAE, 2023).
- Similarly, subsequent EGRA studies conducted in 2021 and 2023 revealed that 60% and 56% of students were found zero/non readers (JEAE, 2024).
- It is also reported that learning poverty stands at 90 percent in Ethiopia, which is 3.3 and 0.2 percentage points lower than the averages for the Sub-Saharan Africa region and low-income countries, respectively (World Bank, 2018).
- Therefore, conducting studies is important to track the gaps that existed in children’s performance, inform policy to help informed decision making and put forward suggestions for improvement at all level.

Objectives of the Study

- The general objective of the study is to assess the overall performance of pre-primary children in pre-literacy, pre-numeracy, executive functions, and fine motor skills.
- Specifically, the study is intended to answer the following research questions.
  - What are the mean scores of pre-primary school children's learning outcomes in literacy, numeracy, executive function, and fine motor skills?
  - To what extent do the performances of the children vary across various sub-groups?
  - What do the overall social-emotional development of pre-primary children look like?
  - What factors are associated with children's overall learning outcomes?

Methods

- **Research designs**

A quantitative approach and a cross-sectional survey design were employed

- **Population**

All pre-primary students enrolled for the academic year 2023/24 in government schools

- **Sampling**

A two-stage stratified sampling technique was employed,

where,

  - first-stage units were schools
  - second-stage units were students
  - equal representation of boys and girls

- To determine the sample size, the formula of a two-stage cluster sample design $\mathbf{a = \frac{400}{b} \times [1 + (b - 1)\rho]}$ was applied.

Methods…

- In this formula,
  - ‘a’ represents the number of clusters or schools,
  - ‘b’ represents the number of cluster size and
  - ρ (rho) stands for the coefficient of the rate of homogeneity.
- The formula would provide an equivalent sampling accuracy for a simple random sample of 400 (Ross, 2007).
- In this case, the cluster size ‘b’ was 20 students.
- The intra-classroom correlation was calculated from MELQO 2022 result and was found to be 0.3.
- Accordingly, the sample sizes became 292 schools and 5,840 children.

Methods…

- **Data collection Instruments**
  - Child Direct Assessment (CDA)
  - Parent or caregivers' interview

The alignment between tasks in the instrument and the pre-primary curriculum was conducted

Finally, the instruments were uploaded to tablets (Kobo toolbox).

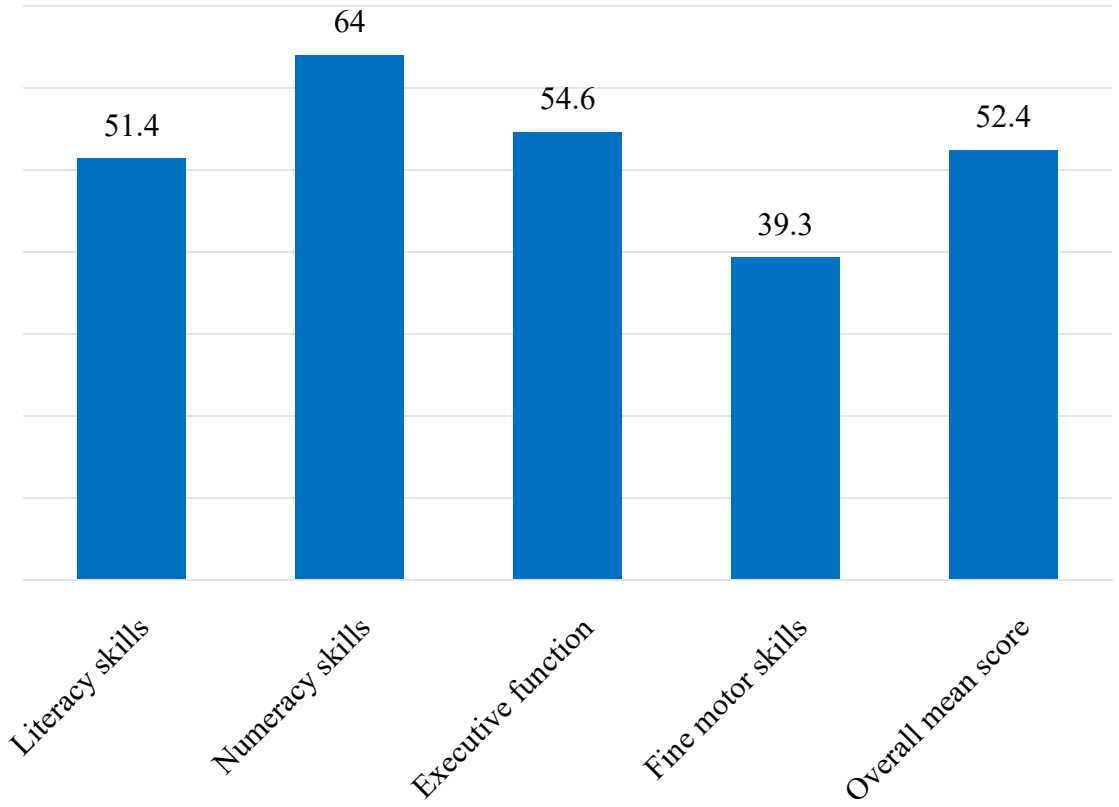
- **Reliability and Validity of Instrument**
  - Pilot study was conducted to check the reliability of the instrument.
  - The Cronbach alpha for the instrument is found to be 0.96, which indicates that is highly reliable.
- **Data collection Procedures and Analysis**
  - Hands on training is provided to all data collectors on how to administer the instrument
  - Descriptive and inferential (t-test) statistics were utilized

Findings

Overall children's performance

- The overall performance of children across basic domains is found to be 52.4%.

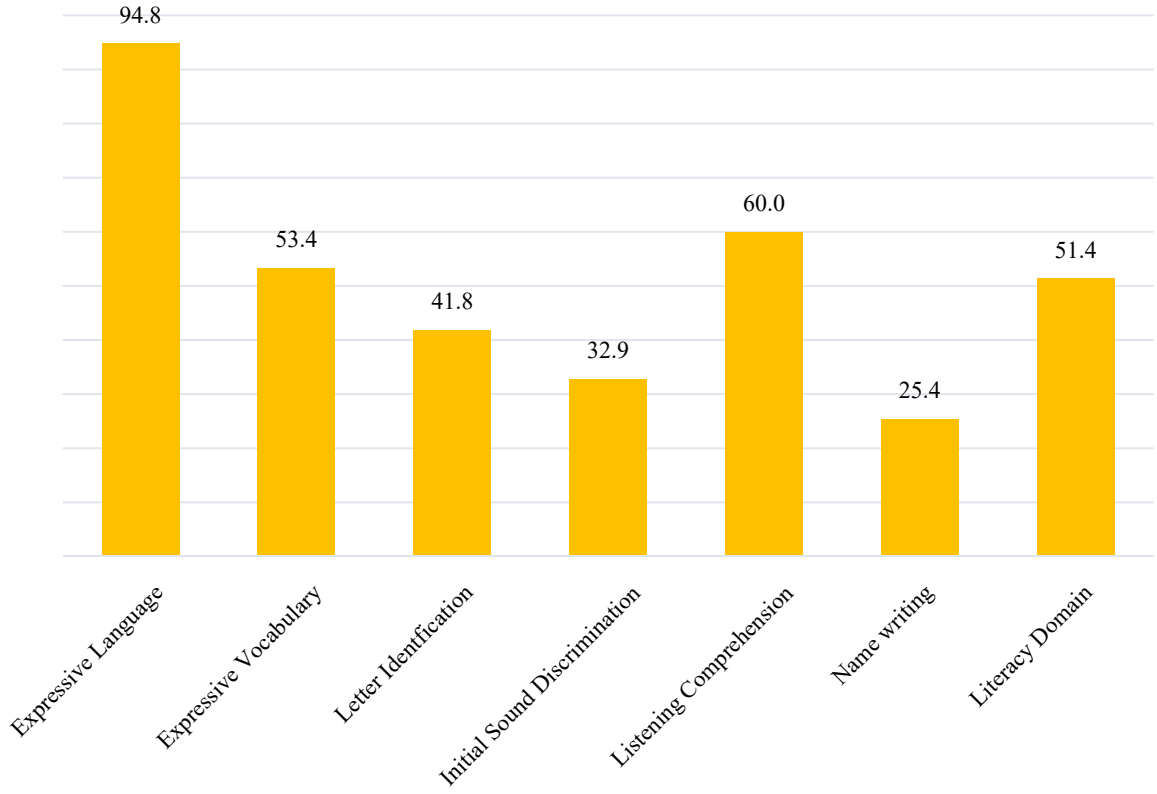
- The result shows that the children relatively performed the best in numeracy skills whereas they performed the least in fine motor skills.



Findings…

Children's performance in Literacy subtasks

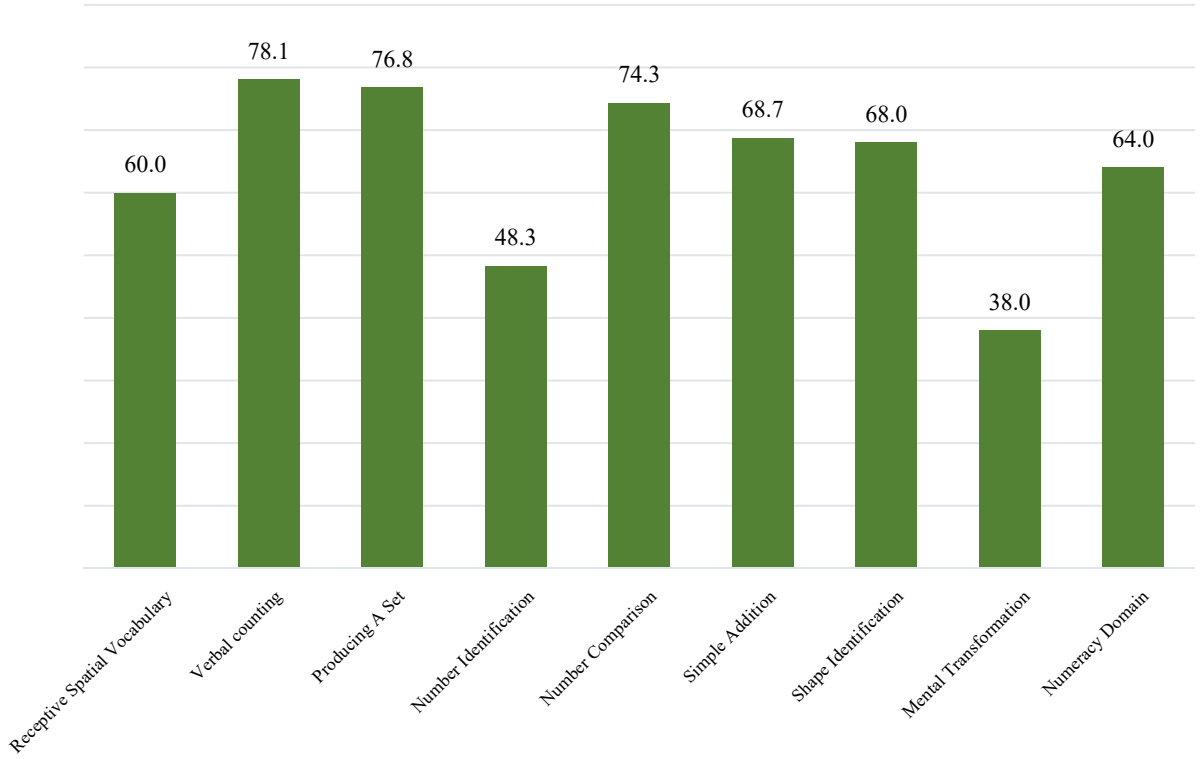
- As indicated, children performed best in expressive language.
- Listening Comprehension and Expressive Vocabulary subtasks score are also better relative to other subtasks.
- The lowest mean scores were observed in name writing.
- Therefore, teaching Name Writing and Initial Sound Discrimination requires special attention as they received lowest mean score of all subtasks.



Findings…

Children's performance in Numeracy subtasks

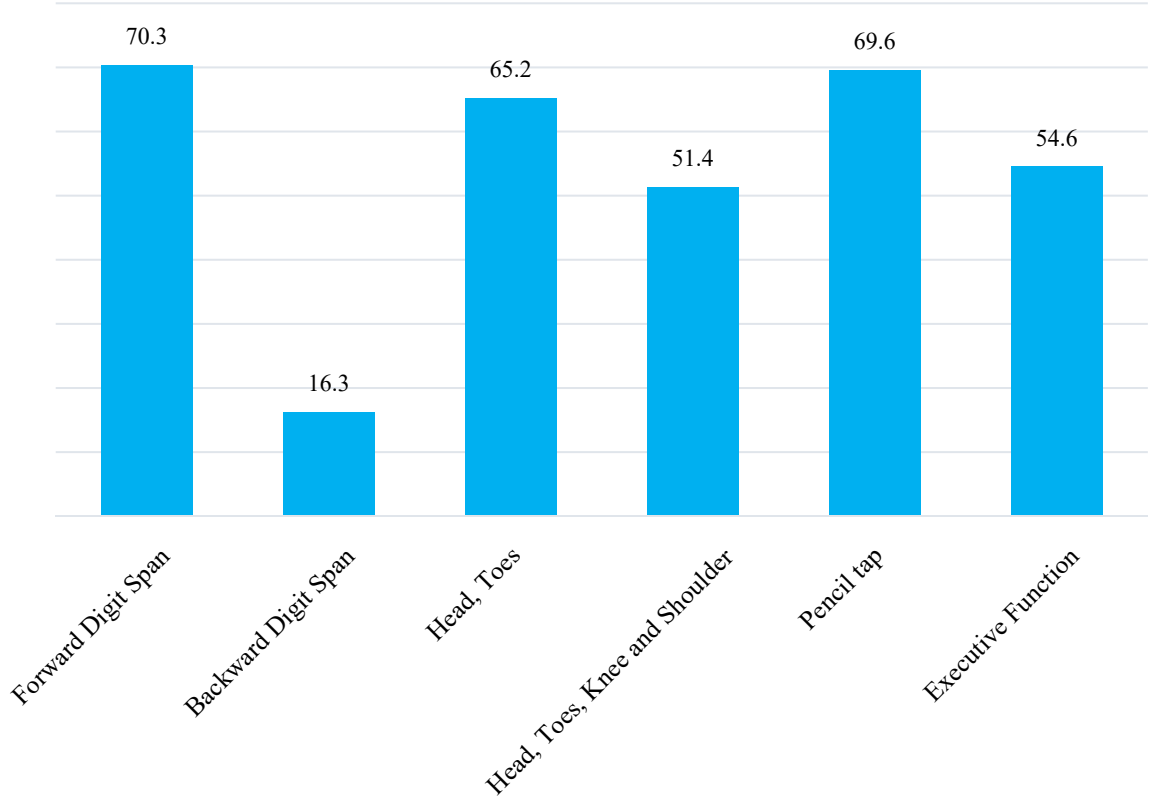
- The result reveals that children performed better in majority of the subtasks with Verbal Counting received the highest score.
- Mental Transformation (38.0%) exhibited the lowest score of all numeracy subtasks.
- The findings in the numeracy is promising as its overall mean is relatively highest of all other domains.



Findings…

Children's performance in Executive Function subtasks

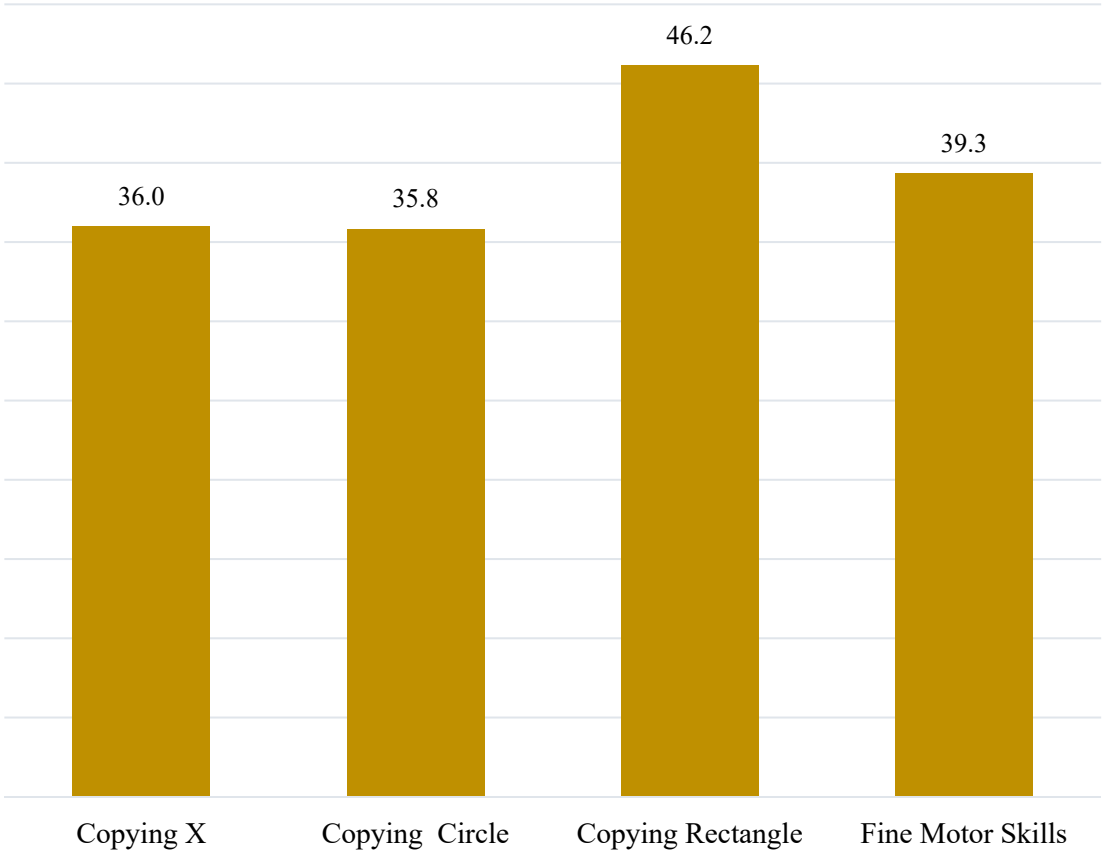
- The children relatively performed higher in Forward Digit Span, Pencil Tap and Head- Toes subtasks.
- They performed the least in Backward Digital Span sub-task.
- These tasks are important as they measure constructs associated with working memory, inhibitory control and flexible switching.



Findings…

Children's performance in Fine Motor skills

- In this domain, children performed relatively better in copying a rectangle.
- On the other hand, they performed relatively the least in copying a circle.
- The finding from this domain indicates that children had difficulty as it exhibits lower mean score.



Findings…

Mean percent score of children by gender

- Boys outperformed girls in all domains except for fine motor skill, where girls slightly performed better.
- The mean difference is statistically significant at $p < 0.05$ for numeracy, executive function, and overall mean scores.

Domains	Gender	N	Mean	SD	MD	t	df	P-value
Literacy Domain	Boy	2828	51.8	19.4	0.4	0.7	5616	0.474
	Girl	2790	51.5	19.7				
Numeracy Domain	Boy	2828	65.2	22.9	2.3	3.8	5616	0.000
	Girl	2790	62.9	23.3				
Executive Function	Boy	2828	55.3	24.5	1.5	2.2	5616	0.026
	Girl	2790	53.8	24.7				
Fine Motor Skills	Boy	2828	38.9	33.9	-0.8	-0.9	5616	0.362
	Girl	2790	39.8	33.8				
Overall Outcomes	Boy	2828	52.8	14.7	0.8	2.1	5616	0.034

Findings…

Performance of children by location (urban and rural)

- Urban children performed better than rural children in all domains except for fine motor skills
- The mean difference is found to be statistically significant at ($P < 0.05$) for all domains.
- In fine motor skills, rural children performed better with statistically significant difference at $P < 0.05$.
- The mean difference between the group is relatively high for numeracy domain.

Domains	Location	N	Mean	SD	MD	t	df	P-value
Literacy Domain	Rural	4149	50.1	20.1	-4.9	-8.1	2600	0.000
	Urban	1469	55.0	19.9				
Numeracy Domain	Rural	4149	62.2	23.3	-7.1	-10.6	2743	0.000
	Urban	1469	69.3	21.7				
Executive Function	Rural	4149	53.0	24.7	-6.0	-8.2	2652	0.000
	Urban	1469	59.0	23.9				
Fine Motor Skills	Rural	4149	40.9	34.3	6.0	6.1	2741	0.000
	Urban	1469	34.9	32.1				
Overall Outcomes	Rural	4149	51.6	14.9	-2.9	-6.7	2712	0.000
	Urban	1469	54.6	14.1				

Children's literacy and numeracy skills development

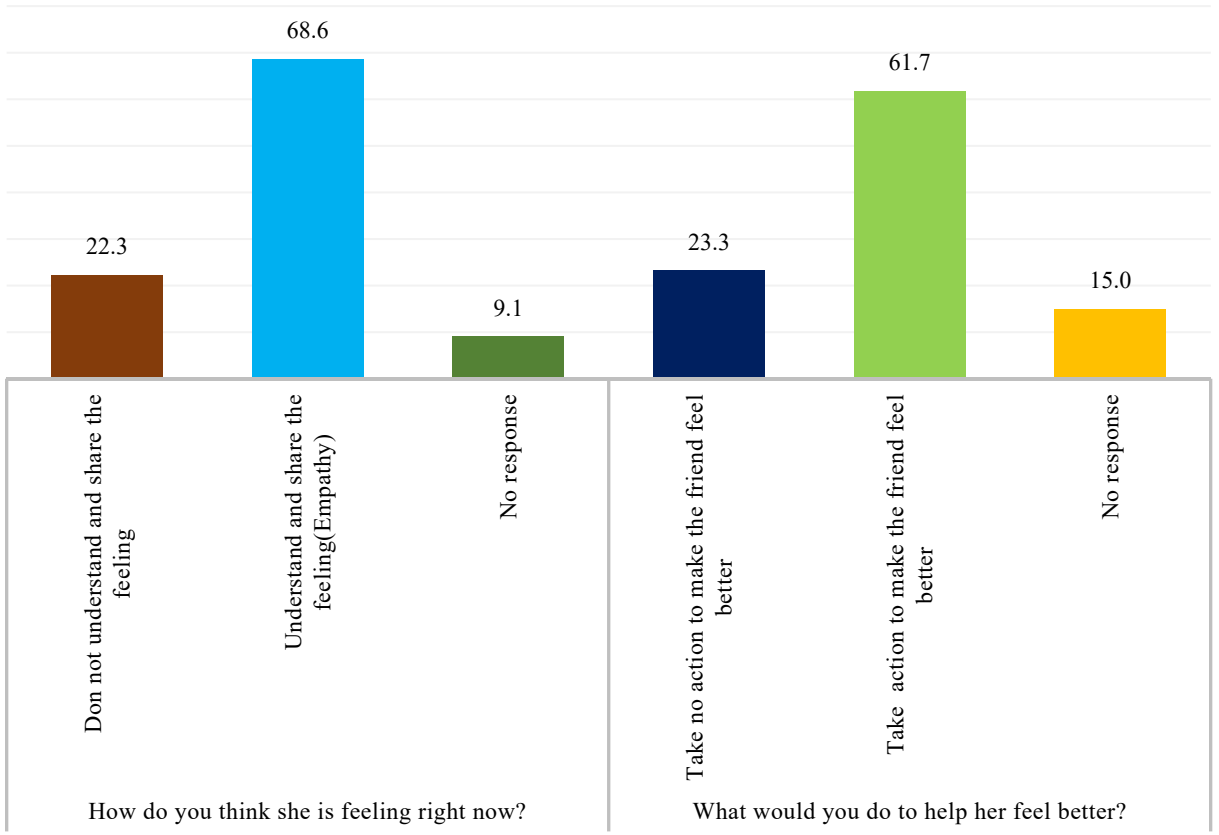
- Teachers and parents were asked about children's early reading skills to identify if the children can name letters, draw, and read
- Accordingly, 36.4 % and 39.4% of teachers and parents indicated that the children cannot.
- 39.7% teachers and 44.5% parents responded that children cannot name at least ten letters.
- 23.8% and 34.3% of teachers and parents respectively indicated that the children cannot write at least three letters.
- 78.6% of teachers and 82.4% of parents reported that children cannot write a simple three-word sentence
- 48.5% teachers and 58.6% parents reported that children cannot speak at least three sentences to explain their experience
- However, the finding from early numeracy skills development is promising relative others as it was evident in numeracy domain of Child-Direct Assessment.

Social-Emotional Development

Perspective-taking or empathy

Children were shown a picture of a crying girl who had fallen and were asked if they understood and shared her feelings.

- The majority (68.6%) of children indicated that they could empathize with the crying girl
- 61.7% stated they would take action to help her feel better.
- This suggests that children can understand others' feelings and provide assistance to those in need.
- Indicates that children's development in perspective taking is promising.
- However, about 23% of children reported that they could not understand her feelings or take action to help, indicating a struggle with empathy and support for peers.
- Social-Emotional development activities that children can perform and Social competence of the children is generally found to promising.



Factors Associated with children's overall outcome

- Teachers' Experience
- Attending Continuous Professional Development (CPD) training
- Access to short- and long-term training
- Availability of teaching materials and resources
- Having a lesson plan (teachers' preparedness)
- Promoting gross and fine motor development
- Family literacy

Are Some of the factors positive and statistically significant correlation with children's overall learning outcome .

Conclusion

- Children's performance across various domains reveal significant disparities in their abilities with overall mean score of 52.4%.
- The highest score is observed in numeracy skills and the lowest in fine motor skills.
- Children performed best in expressive language with a mean score of 94.8%, but their performance significantly declines in name writing, initial sound discrimination, and letter identification, with name writing being the weakest.
- In early numeracy, children demonstrated promising abilities, with a mean score of 64%, indicating that current teaching practices in numeracy may be more effective than those in literacy.

Conclusion

- The analysis by gender shows that boys generally outperformed girls across most domains, except in fine motor skills, where girls had a slight advantage.
- Both genders performed well in numeracy, while fine motor skills represented the lowest performance area.
- In terms of location, urban children consistently outperformed their rural counterparts in most domains, particularly in numeracy, although rural children slightly demonstrated better performance in fine motor skills.
- With regard to socio-emotional development, a significant percentage of children struggle with emotional regulation and responding to peers' emotions.
- About 23% of children indicated that they could not understand the feelings of others or take action to help.

Recommendations

- ***Develop Specialized Literacy Programs***: Regions, woredas and schools are expected to develop and implement specialized literacy programs that focus on interactive and engaging methods to improve reading and writing skills. Strategies could include phonics-based instruction, storytelling sessions, and writing exercises.
- ***Prioritize Numeracy Interventions***: To build on the promising performance of children in the numeracy domain, teachers should prioritize targeted interventions to address the specific challenges identified in Number Identification and Mental Transformation, where scores were notably lower.
- ***Address Gender-Specific Needs***: Schools and other stakeholders have to develop programs that specifically address the needs of girls in early childhood education, particularly in areas where they lag behind.
- ***Enhance Executive Function Skills***: To improve children's executive function skills, teachers should promote working memory and cognitive flexibility, focus on integrating activities that specifically target improvement in the Backward Digit Span, which recorded a notably low mean score of 16.3%.


Thank you!