



POLICY BRIEF No. 04 | November 2023

Early childhood education in Uganda: enrollment patterns and benefits for future learning

November 2023

In short...

- Uganda faces low enrollment in Early Childhood Education (ECE), with disparities both in attendance rates and the duration of enrollment.
- Significant regional variations in ECE enrollment rates, with wealth influencing access but not explaining regional differences.
- Gender is a minor factor in ECE participation, with geography and wealth playing more substantial roles.
- Children attending ECE in Uganda exhibit significantly higher learning outcomes, even after adjusting for socioeconomic background.
- If access to ECE across the country matched the enrollment rate in the best performing region, national learning outcomes would improve meaningfully. If access and quality were to improve, these gains would be even larger.
- Urgent action is needed to bridge the significant gap with regional and global peers in ECE access. Policymakers could start geographically targeted interventions, emphasizing both access and quality improvements in ECE services.

Introduction

Early childhood education (ECE) plays a pivotal role in addressing the learning crisis faced by low- and middle-income countries (Bendini and Devercelli, 2022). Access to quality ECE programs can mitigate the learning crisis, as it can help foster the educational readiness skills needed to succeed in school (for example, Martinez et al., 2012), bridge inequalities in cognitive and socioemotional development, build children's human capital (Cunha and Heckman, 2007; Bendini and Devercelli, 2022; Holla et al., 2021) and set them on higher developmental trajectories to succeed decades after having being in these programmes (Walker et al., 2022). In fact, the large benefits associated with effective early childhood education have positioned it as a highly cost-effective policy (Currie, 2001). Therefore, ECE stands out as a policy area where low- and middle-income countries like Uganda could invest in to improve educational outcomes and broader national development.

The Ugandan education sector has achieved notable milestones since 1986, particularly with the introduction of Universal Primary Education (UPE) in 1997. UPE significantly boosted enrollment in primary grades and teacher recruitment (National Planning Authority, 2015). Yet, despite these improvements, challenges persist around the school readiness of Ugandan pupils as they enter primary education, as evidenced by subpar learning outcomes in primary school and beyond (National Planning Authority, 2015). Beyond the weak public provision of pre-primary education, the sector also faces other issues, including very low penetration rates, the need to integrate teacher training, the establishment of national standards, and ensuring access in the most underserved areas.

To inform the policy discussions around broadening access to high-quality early childhood education in Uganda, this brief provides evidence on the landscape of ECE provision in Uganda, and the learning outcomes associated with attending ECE in the country. To do so, we leverage international scientific and policy literature and the latest round of Uwezo data (2021). The Uwezo dataset is well-suited for this research because it mirrors the national census framework, ensuring comprehensive coverage of a nationally representative selection of villages and households. In total, children's skills in reading English and numeracy were assessed across 29 districts and cities out of the national total of 146, and across 12 districts in local languages. Within each district, 15 enumeration areas were selected using statistical methods to yield a representative subsample, and within each enumeration area, 20 households were chosen. Altogether, these procedures resulted in a sample of 14,553 children for reporting and analysing achievement in English reading and numeracy, and 5,527 for achievement in local languages.

Below, we provide seven insights around the issue of early childhood education in Uganda.

Access to early childhood education in Uganda

1. The Uwezo data shows that when we think about ECE participation, it is important to think about both whether children enrolled at all, and for how long — especially as participation increases

The measurement of access and participation in ECE is a policy-relevant first step, as this information informs the state of the educational landscape in a given region and, as such, the potential policy measures that should be considered. Two potential alternatives to quantify ECE engagement are to either capture whether pupils attend or attended ECE at all or to do so at a more fine-grained level by quantifying the

number of years that they were enrolled in ECE. While the first one presents a simpler metric that can be easily linked to often-reported indicators at a global level like 'gross enrollment in pre-primary,' the second provides a more nuanced understanding of the 'intensity' with which young children and families are engaging with ECE. Fortunately, the Uwezo data collects information that can be mapped onto both metrics, and as such, one can explore whether these two indicators indeed measure the same underlying issue or if policymakers should actively engage with both when thinking about the ECE landscape in Uganda.

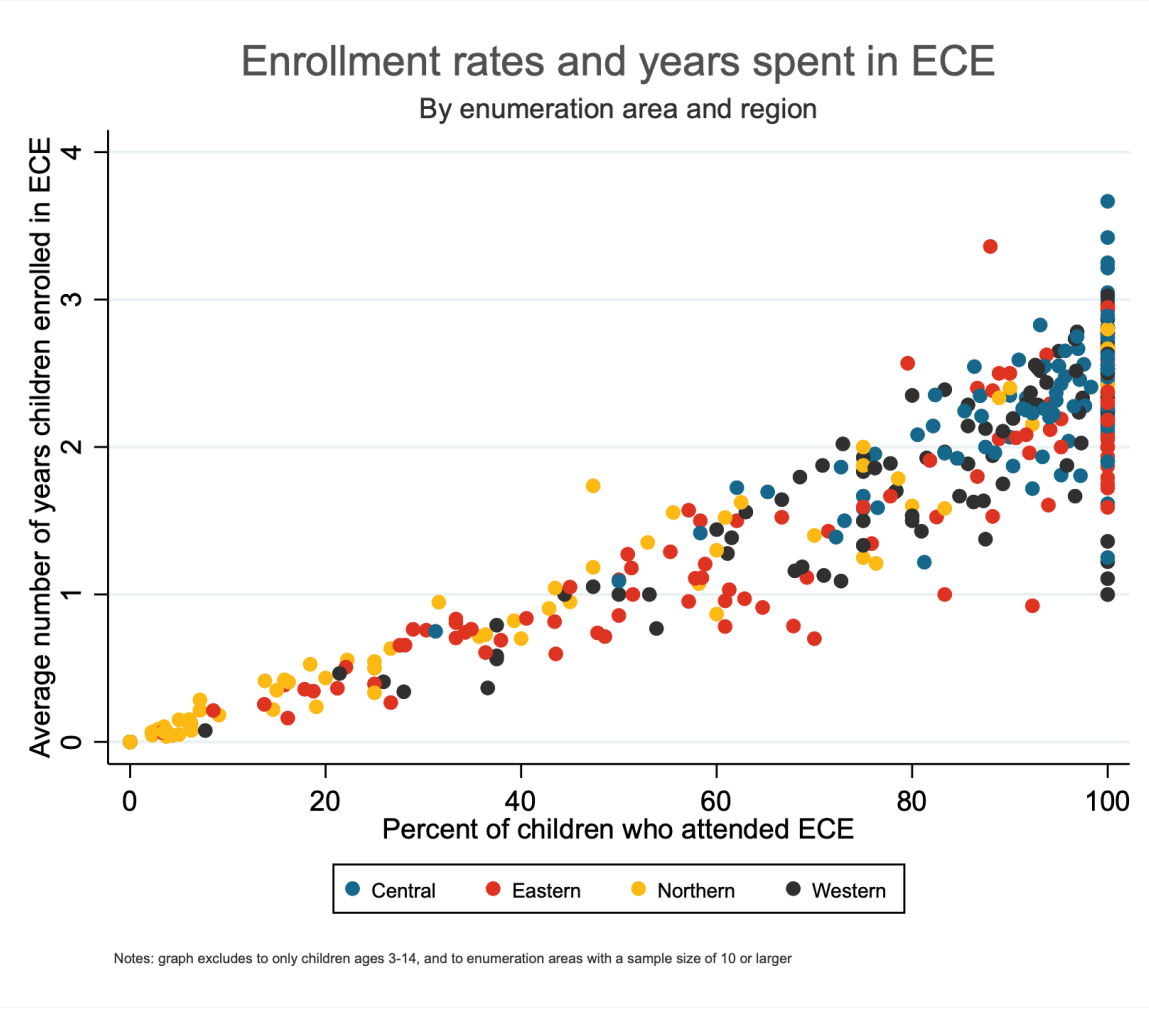


Figure 1

Figure 1 above displays the relationship between ECE attendance and the average number of years that children attended ECE by enumeration area in the Uwezo data. As expected, there is a positive relationship between these two metrics, suggesting that as Ugandan families enroll their children at higher rates, this tends to also translate to longer tenures in ECE. However, while at lower levels of gross enrollment, the average number of years in ECE does not vary much, there is much wider variance in the number of years that children tend to stay in ECE at higher rates of gross enrollment. For example, enumeration areas 10707 and 50501 are both located in the Eastern region and both have 93% of children who attended ECE. Yet, in the first area, children tend to enroll in ECE for 2.6 years, while in the second area, children enroll in ECE for only 0.9 years. The implication of this finding is straightforward: to better understand the ECE landscape with the Uwezo data, and likely other datasets as well, policymakers need to examine not only broad

enrollment but also the intensity of families' engagement with the system in terms of the duration during which they enroll their children in ECE.

2. ECE enrollment is very low in Uganda — both in terms of whether pupils attend at all, and the number of years that they attend

Enrollment rates in ECE in Uganda display very low levels. According to the World Development Indicators (World Bank, 2023), the gross enrollment rate in pre-primary in Uganda was 14% in 2017, the latest figure available. That is, only 1 out of every 7 children expected to be enrolled in pre-primary education in Uganda actually is. This is nearly half the enrollment rate in Sub-Saharan Africa and one-fourth the global rate of enrollment in pre-primary. To put this figure in perspective, between 1970 and 2020, this metric increased on average from 10% to 58% in low- and middle-income countries, and from 14% to 28% in Sub-Saharan Africa. Moreover, the levels displayed by Uganda today mirror those in Sub-Saharan Africa and the world during the 1975-1978 period. In a sense, Uganda appears to be over 45 years behind its global counterparts in terms of enrollment in pre-primary education.

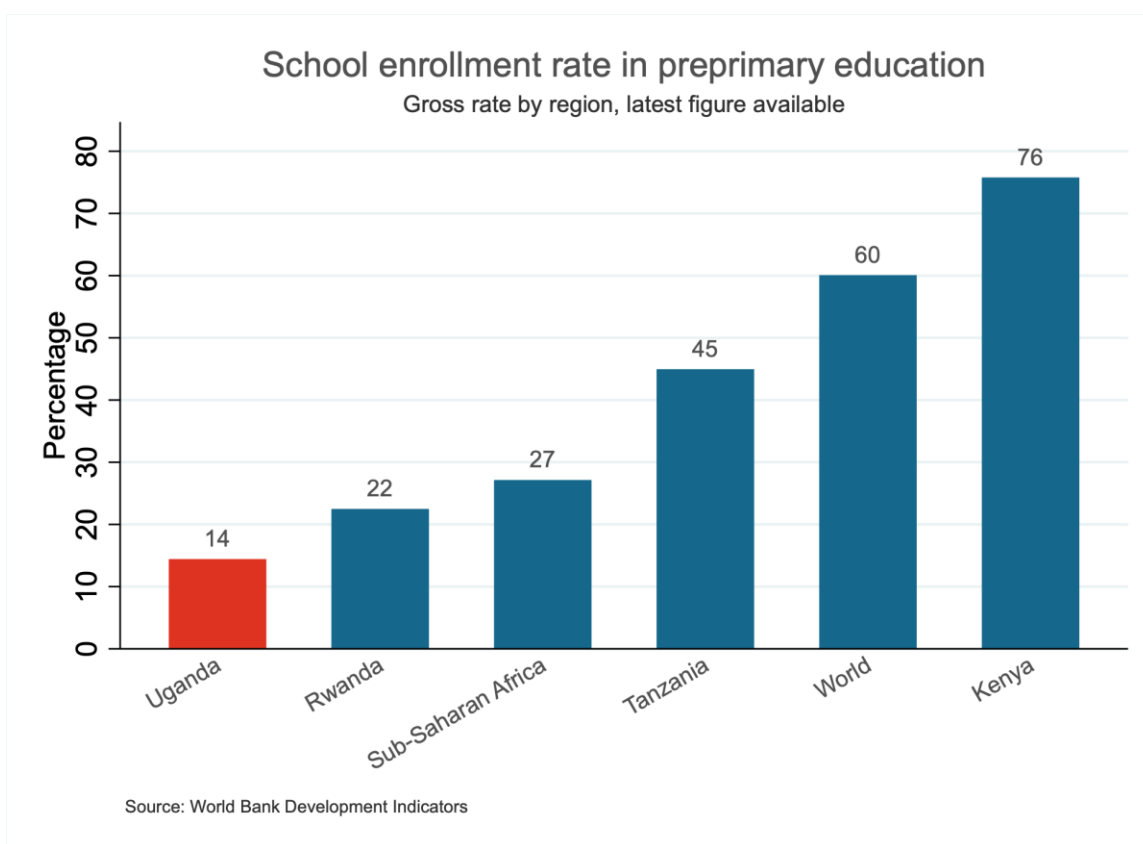


Figure 2

Using the Uwezo dataset, less than half of children aged 3-5 (47%) report being enrolled in ECE, and 38% are not enrolled in school at all—meaning they are not even underage children enrolled in primary school. Among 3-14-year-olds in Uganda, over one in three report never having attended ECE, and on average, this group of children has attended 1.5 years of ECE. Yet, among those that have attended ECE for at least one year, only half did it for the officially mandated period of 3 years—displaying that the average child in

Uganda is not deeply engaged with the system in terms of the length of tenure, even when they do participate in some form.

While these figures are directionally higher than the figures reported by the World Bank, there are two points to note. First, the nature of the Uwezo data is self-reported, which means that one would expect a certain degree of inflation relative to official statistics. Second, even taking into account the previous point, the Uwezo data still shows an unacceptably large number of Ugandan children who are not engaged with ECE.

In all, the metrics around participation in ECE in Uganda are very low in absolute terms, both absolutely and relative to its regional and global peers. They suggest a heightened sense of urgency required from policymakers to improve the participation of Ugandan families with ECE.

Determinants of early childhood education enrollment in Uganda

3. There is significant variation in the district-by-district and region-by-region enrollment rates:

Enrollment rates in ECE vary greatly by region. For example, children aged 3-14 in the Central region are nearly two and a half times more likely to attend ECE than their peers in the Northern region.

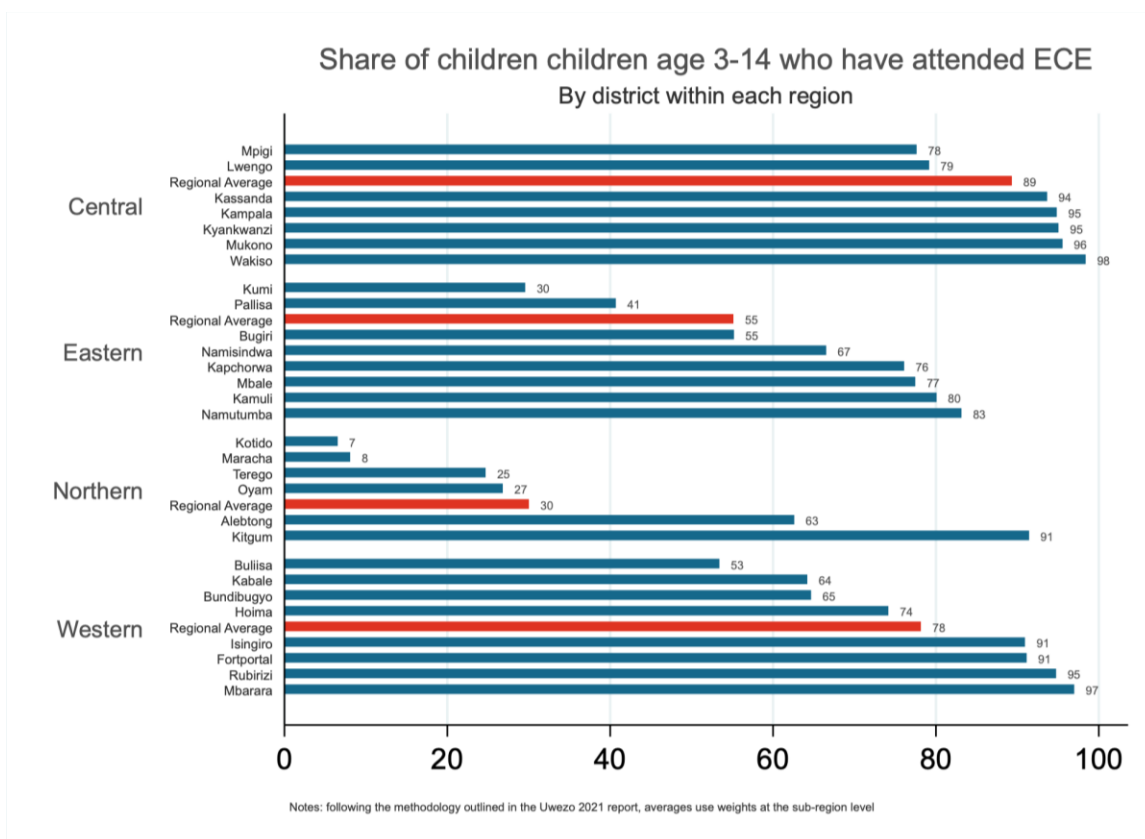


Figure 3

These geographical differences in participation in ECE are even more pronounced at the very local level. While in all districts in the Central region, over 3 in 4 children have enrolled in ECE, in 4 out of the six sampled districts in the Northern region, fewer than 1 in 3 children have enrolled in ECE. Yet, Kitgum district in the Northern region displays higher enrollment in ECE than the overall average in the Central region. In this sense, inequality in ECE participation happens both across and within regions, and regions with the lower average participation also have the most within-regional inequality.

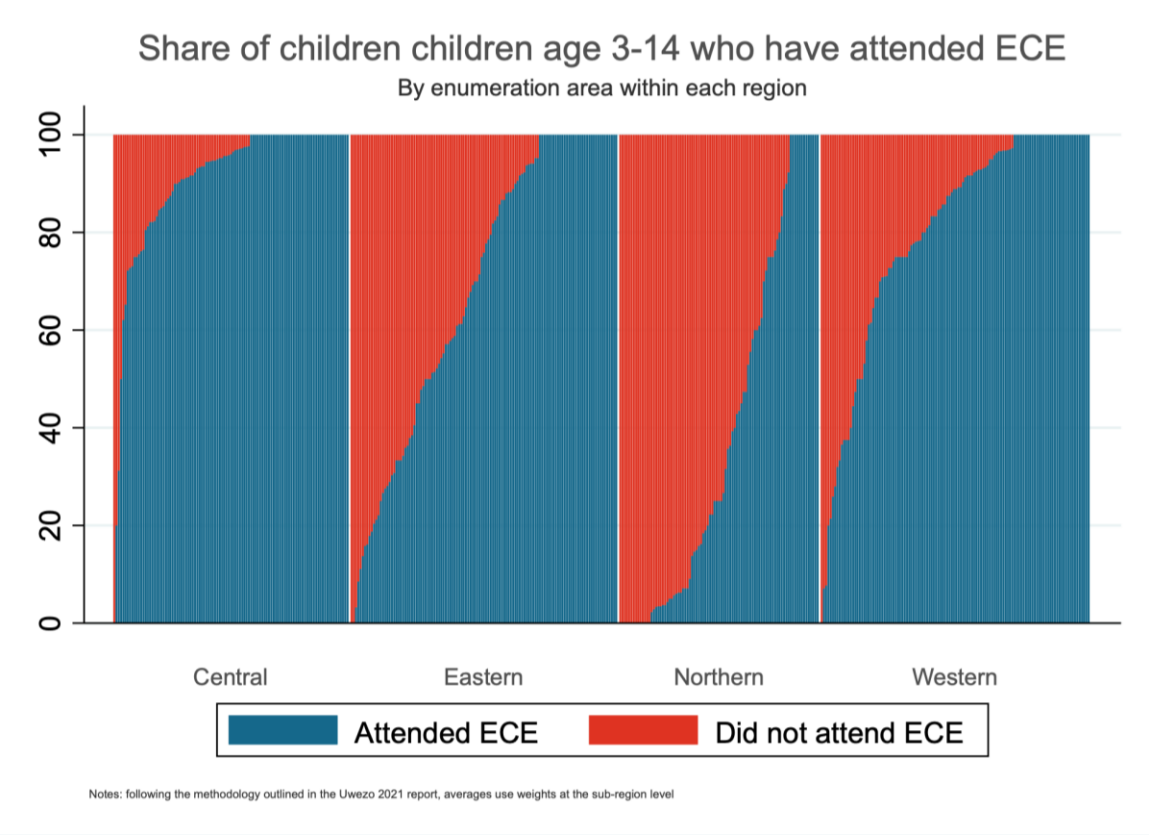


Figure 4

4. Wealth does moderate the extent to which children have access to ECE, but it does not explain the cross-regional differences in ECE enrollment:

There is a strong relationship between ECE attendance and engagement and household wealth across the Uwezo data. For example, between the poorest and richest 20% segments of the population, there is a gap of 20 percentage points—1 in 5 additional children—among children aged 3-14 who attend or have attended ECE. This is also for a period that is 7 months longer, or 50% higher than that of families in the lowest 20% of household wealth in Uganda.

Table 1: participation in early childhood education by wealth quintile

Wealth quintile	Share of children aged 3-14 who have attended ECE	Average number of years of ECE attended
Poorest 20%	52%	1.2
Second poorest 20%	61%	1.4
Middle 20%	65%	1.5
Second richest 20%	71%	1.7
Richest 20%	72%	1.8

Notes: following the methodology outlined in the Uwezo 2021 report, averages use weights at the sub-region level.

Given the large differences in ECE enrollment by district and household wealth, one might also explore whether the differences in regional participation in ECE are explained by variations in the wealth or socioeconomic status of families across the different regions. However, the Uwezo data shows that wealth differences are not as stark as the regional differences. Figure 5 below shows ECE enrollment by region and socioeconomic status at the national level. That is, families in the 'richest 20%' group in the Central region have a similar level of household wealth as those in the 'richest 20%' group in other regions, as the wealth classification was done at the national level.

Strikingly, enrollment rates vary significantly more by region than by household wealth. For example, the poorest 20% of households in the Central region have an attendance rate that is over two and a half times as large as that of the richest 20% of households in the Northern region. Similarly, the richest 20% of households in the Eastern region are enrolling their children in ECE at a rate comparable to those in the poorest 20% of households in the Western region.

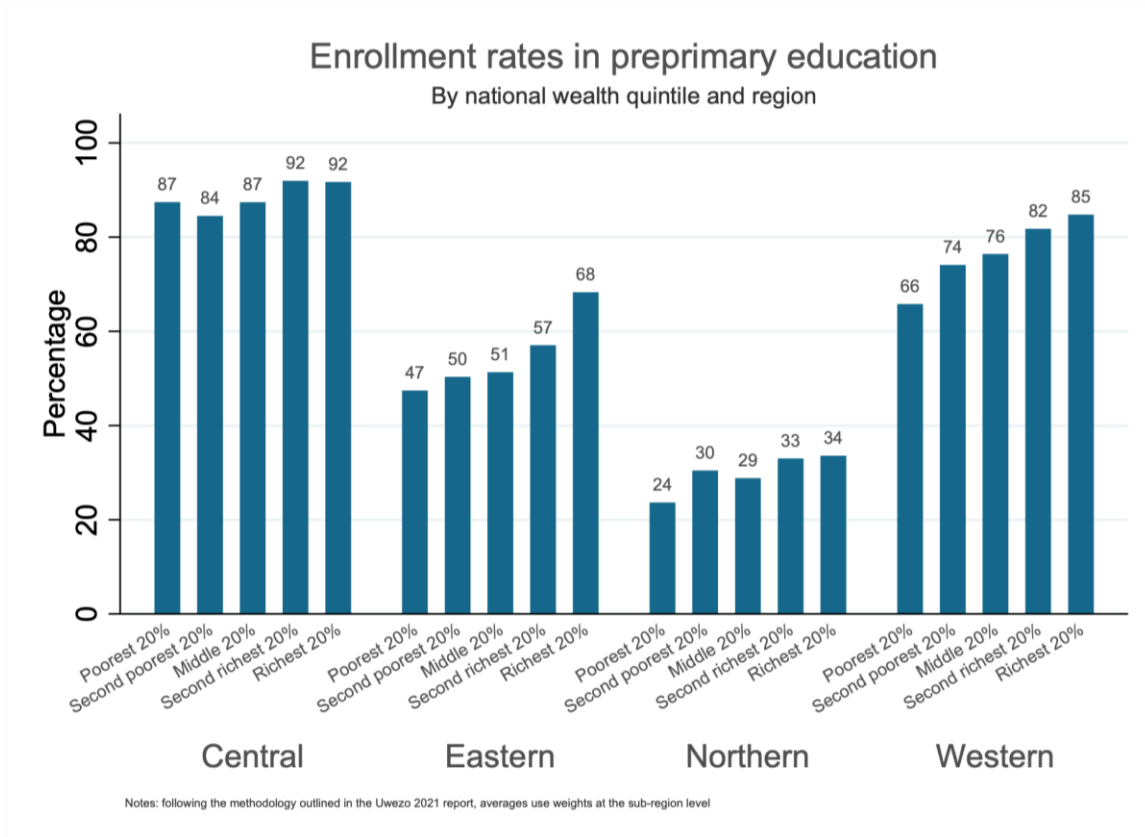


Figure 5

These findings suggest that, although household wealth plays a significant role in families' decisions to enroll their children in ECE, the regional availability of ECE services is also likely to play a significant role in this decision. Households with significantly lower financial means in regions that are better served still enroll their children in ECE at much higher rates than those who are likely to afford sending their children to other regions that are not as well served by ECE providers. Targeted intervention is required in the most underserved regions to ensure that families, which would have otherwise enrolled their children in ECE but do not have quality options, can do so.

5. For the most part, girls attend ECE at a higher rate than boys — except for those in the richest sectors of the population

Another potential determinant of ECE participation in Uganda is gender — although to a lesser extent than geography or wealth. Similarly to what has been documented in other Uwezo policy briefs in terms of girls having, on average, stronger enrollment levels than boys in Uganda, girls are 2 percentage points more likely to have attended ECE in Uganda and to do so for 23 days. Figure 6 breaks up these figures by household wealth, and girls enroll in ECE at a higher rate for most socioeconomic groups, except for weather families where girls enroll at a slightly lower rate than boys — although this is still higher than the enrollment rate for boys of all other socioeconomic groups.

Although girls enrolling in ECE at a higher rate than boys is a consistent pattern in the data, the magnitudes of these differences are not very large and are unlikely to fully explain subsequent differences in learning outcomes between boys and girls. Moreover, households that are led by females are 3 percentage points

more likely to send their children to ECE for over a month and a half longer than their counterparts with a male head of the household — even after taking into account their socioeconomic characteristics. Yet, female heads of households engage their children in ECE at the same rate regardless of the gender of their children. In this sense, the gender of the head of the household is a slightly stronger determinant of ECE participation for children, but it is still a weaker predictor than household wealth or geography.

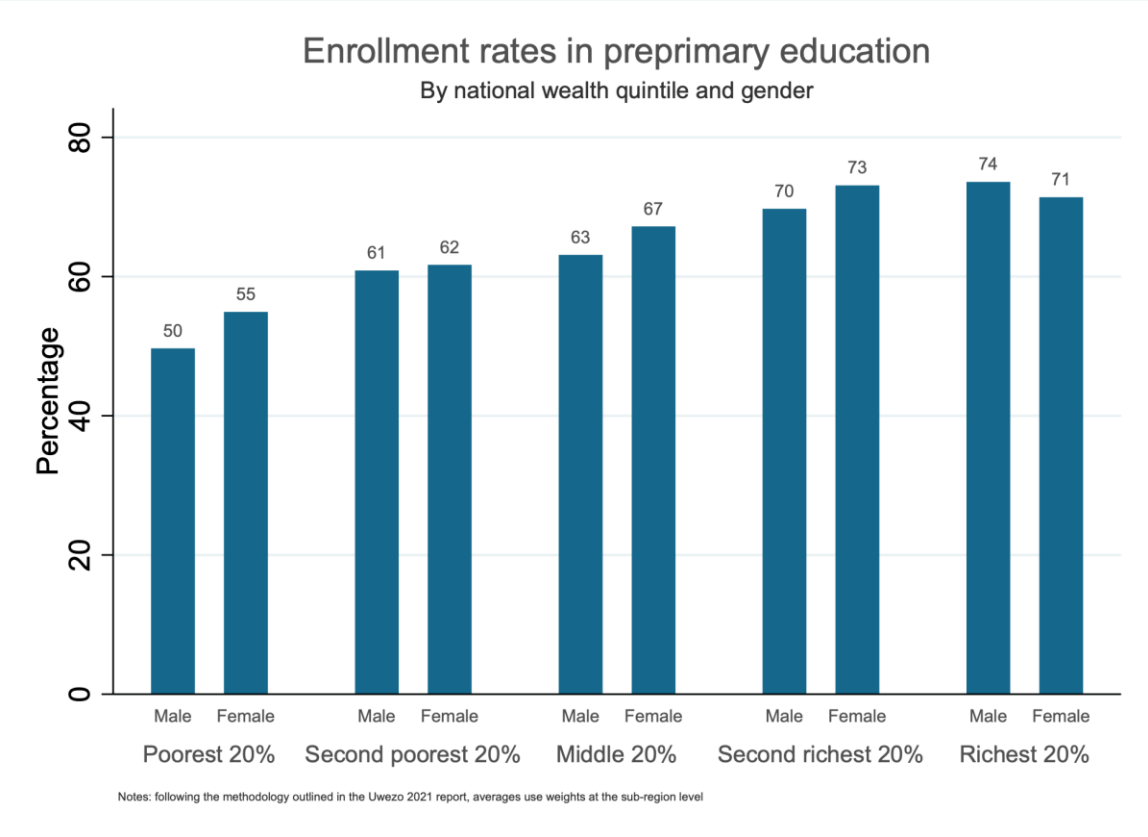


Figure 6

Learning outcomes and Early Childhood Education in Uganda

To examine patterns in learning outcomes by whether pupils attended ECE, we use data from the Uwezo household survey conducted in 2021. Our analysis focuses on children aged 3-14, which is the intended age range for pre-primary and primary education, regardless of enrollment status. This age group is highly policy-relevant due to its large size and is also a major focus of the Uwezo data collection effort. For detailed information on the sampling methodology, please refer to the Uwezo National Learning Assessment Report, 2021 (Uwezo, 2021).

6. Children who attended ECE display significantly higher learning outcomes than their peers who did not — even after accounting for their socioeconomic background

Ugandan children who attended ECE have significantly higher learning outcomes than their peers who did not, even after taking into account potential differences in socioeconomic background. For example, they are 10 percentage points more likely to be able to read words in English and to reach at least the subtraction level on the numeracy assessment. Given that, on average, an additional year of age is correlated with 7 additional percentage points in the likelihood of reaching these subskills, this means that Ugandan children who attended ECE are approximately 1.4 years — that is, 17 months — further ahead in their learning trajectory relative to those who did not attend, even though this analysis compares children of the same age and similar socioeconomic background. In other words, if there are two 8-year-old children of very similar socioeconomic background, age, gender, and region, and one of them attended ECE and the other one did not, the learning outcomes of the one who did are more similar to the children who are between 9-10 years of age with a similar personal background than those of the 8-year-old.

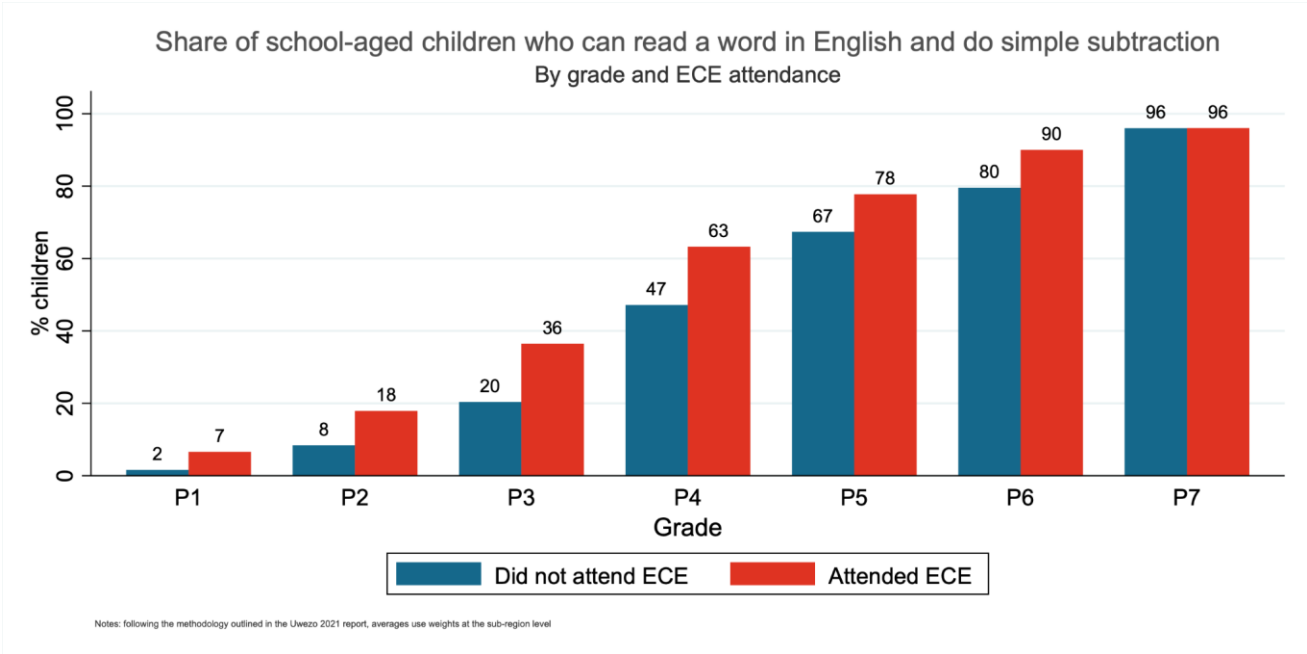


Figure 7

Interestingly, children who attended ECE report to have been enrolled in education for 2.4 years longer than those who did not enroll in ECE. Yet, their learning outcomes — although significantly higher — are still only 1.4 years higher than those who did not. This suggests that the rate of learning currently in Ugandan ECE is even slower than in Primary education, and as such, that there is significant scope to improve not only access to ECE but also its quality.

7. If access to ECE in all regions were increased to match the level in the Central region, national learning outcomes would increase significantly — but the learning crisis would still be far from solved

To better understand the potential gains in overall learning outcomes that broadening access to ECE might have, one can conduct a thought experiment: given what is currently known about ECE enrollment rates across the country, and what the average difference in learning outcomes is between children who attended ECE and those who did not, what would happen to learning outcomes if every region had a similar

attendance rate to that in the highest performing region in this regard, that is, the Central region? To do so, we multiply the share of children who would be reached by such an increase in access in each region by the average gain in learning outcomes — proxied by the share of children who can read at least a word in English and at least reach the subtraction level in Maths — associated with attending ECE.

We find that if every region had an ECE enrollment rate similar to that of the Central region (89%), the share of children aged 3-14 across the whole country who can read at least a word in English and at least reach the subtraction level in Maths would go from 25% to approximately 30% — that is, an increase of one-sixth of the current rate. Importantly, this also depends on the quality of education in ECE: if the "boost" from attending ECE in Uganda was doubled, the share of children mastering these skills would increase to 35%. In other words, increasing the quality and quantity of ECE participation are two important factors to improve school readiness and learning outcomes in Uganda.

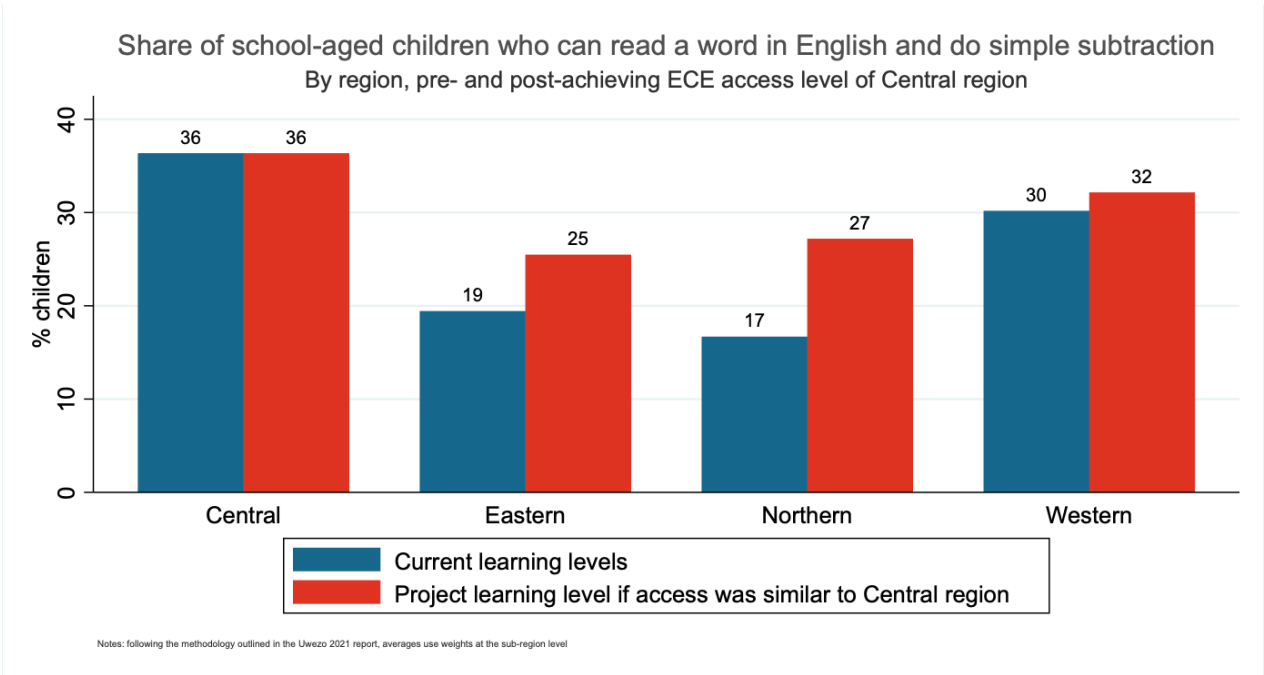


Figure 8

Looking forward

The volume of research supporting the value of ECE and best practices to implement high-quality systems at scale has been growing at a fast pace in recent decades. From the point of view of a policymaker, it is important to consider the current local landscape, alongside these international experiences and recommendations, to ensure that when an expansion in the access and quality of ECE is provided in Uganda, the probability of success is high. Some of the issues that we recommend policymakers consider include:

- Consistently in the Uwezo data and international studies, **children who attend ECE have significantly higher learning outcomes later on, and possibly better outcomes in other domains as well.** The evidence is overwhelmingly positive in favor of the benefits of attending ECE — both for pupils and educational systems and economies as a whole.

- Urgent action is required in Uganda, as the country is 45-50 years behind regional and global peers on issues related to ECE access and pre-primary enrollment. **Policies that seek to expand access to ECE are paramount**, both in terms of broad participation of as many children as possible and the number of years that children attend ECE as well.
- **Some regions have significantly more serious needs for greater access to ECE services than others**, and hence, policies aimed at expanding access to ECE in Uganda will need to be more targeted toward certain areas, at least at first as the country navigates these potential first steps to universal provision of ECE.
- **Expanding sheer access to ECE is not enough; the quality of the services provided is key as well.** ECE is not daycare, and careful attention needs to be paid to the day-to-day experience of children in ECE, including aspects like curriculum, teacher training, materials, and facilities. Hence, policies that seek to increase access to ECE must be balanced with efforts to maintain and improve quality, and investments in quality early learning should be prioritized to boost learning for children (Bendini and Devercelli, 2022).
- Beyond the classroom, **increasing the number of families with access to ECE can also serve as a pipeline to provide families with other services required for adequate child development** for the youngest children, such as nutritious school meals or medical services for infants and mothers.

Annex

Table 2: difference in learning outcomes between children (age 3-14) who attended ECE and children who did not on selected variables

Subject	Outcomes	[1]	[2]	[3]	Average yearly growth	Average difference as a share of average yearly growth
Maths	Uwezo level (standardized)	0.41*** (0.06)	0.14** (0.05)	0.15*** (0.03)	0.19*** (0.01)	123%
	Can do basic subtraction exercises	0.18*** (0.02)	0.08*** (0.02)	0.06*** (0.01)	0.08*** (0)	133%
	Observations	10325	8991	8991	12521	
English	Uwezo level (standardized)	0.5*** (0.06)	0.24*** (0.04)	0.13*** (0.02)	0.17*** (0.01)	171%
	Can read short words in English	0.22*** (0.03)	0.11*** (0.02)	0.05*** (0.01)	0.08*** (0)	158%
	Observations	10368	9014	9014	12574	
Local language	Uwezo level (standardized)	0.38*** (0.08)	0.24** (0.09)	0.11** (0.05)	0.16*** (0.01)	152%
	Can read short words in local language	0.17*** (0.04)	0.1** (0.05)	0.06* (0.03)	0.08*** (0.01)	138%
	Observations	3912	3529	3529	4838	
Aggregate outcomes	Can read short words in English and do simple subtraction exercises	0.18*** (0.02)	0.09*** (0.02)	0.04*** (0.01)	0.07*** (0)	148%
	Observations	10171	8862	8862	12318	
	Can read short words in English/local language and do simple subtraction exercises	0.15*** (0.03)	0.09** (0.04)	0.04 (0.02)	0.07*** (0.01)	133%
Observations	4698	3453	3453	3980		
Controls		N	Y	Y	N	
Enumeration area fixed-effects		N	N	Y	N	

Notes: each point estimate comes from regressing the outcome of interest on a binary variable equal to 1 if the pupil reports having attended pre-primary education for at least one year, and 0 otherwise. The list of controls include variables for the age of the pupil, gender, indicators for different types of disability, an indicator for whether their mother went to school, an indicator for whether the pupil is displaying appropriate grade progression if in school, and indicators for the type of school attended (public/private/community). The average yearly growth is calculated as the average of the three point estimates for each outcome, divided by the average annual growth. All regressions use weights following the methodology outlined in the Uwezo 2021 report, where estimations with maths and English outcomes use weights at the sub-region level, and estimations that include outcomes for local languages use weights at the district level. Standard errors clusters at the level of the enumeration area, consistent with the sampling approach. Statistical significance as follows: ***p<0.01, **p<0.05, *p<0.10.

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