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POLICY BRIEF · CAMEROON

Cameroon's Rural Energy Expansion Offers an Opportunity to Improve Learning Conditions for Primary School Pupils

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Key messages

- **Expand reliable household energy access** in underserved rural communities under the leadership of the Ministry of Water and Energy (MINEE), given its positive association with children's reading outcomes.
- **Integrate targeted parental learning-support programmes** into rural household energy initiatives through coordinated action between MINEE and the Ministry of Basic Education (MINEDUB).
- **Equip mothers, fathers, and other caregivers** with practical strategies to support children's reading and numeracy, as parental support is associated with better learning outcomes among lower-performing pupils.
- **Pilot and evaluate the combined energy-access and parental-support approach** before national scale-up to confirm its effectiveness, cost and feasibility.

Cameroon's rural electrification plan offers an opportunity to support primary school pupils

Cameroon has committed to ensuring that children complete primary school with basic reading and numeracy skills, yet learning outcomes remain weak. In the 2019 assessment, 46.3% of pupils performed below the minimum proficiency level in reading and 66% in numeracy. Rural pupils were particularly disadvantaged: 31.2% were below minimum proficiency in reading, compared with 15.6% in urban areas; the corresponding figures for numeracy were 66.5% and 19.1%.

Cameroon is also expanding rural electricity access and cleaner household energy technologies through the Rural Electrification Master Plan (PDER) and the LPG Master Plan. However, energy and education policies are largely implemented separately. This misses an opportunity: better household energy conditions may support learning at home, but they do not guarantee that all children will achieve better outcomes.

Coordinating household energy initiatives led by the Ministry of Water and Energy (MINEE) with parental-support programmes led by the Ministry of Basic Education (MINEDUB) could help more children benefit. Delivering both interventions in the same rural communities could also reduce duplication in targeting and community mobilisation.

The research project

This study examines whether household energy access is associated with Grade 6 pupils' reading and numeracy outcomes, whether the relationship differs across performance levels and between rural and urban areas, and whether mothers' or fathers' homework support changes the pattern.

The analysis uses nationally representative 2019 PASEC data for 4,723 Grade 6 pupils in 272 Cameroonian schools. Ordinary least squares (OLS) models estimate average associations, while quantile regression models examine how these associations vary across the performance distribution. Because the data are observational, the findings show relationships between energy access, parental support and learning outcomes; they do not establish causality.

Key findings

The evidence points to three policy-relevant findings.

Figure 1: Estimated association across the learning performance distribution

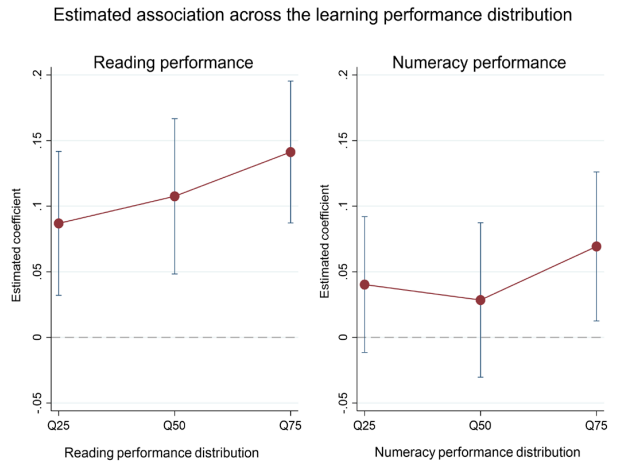
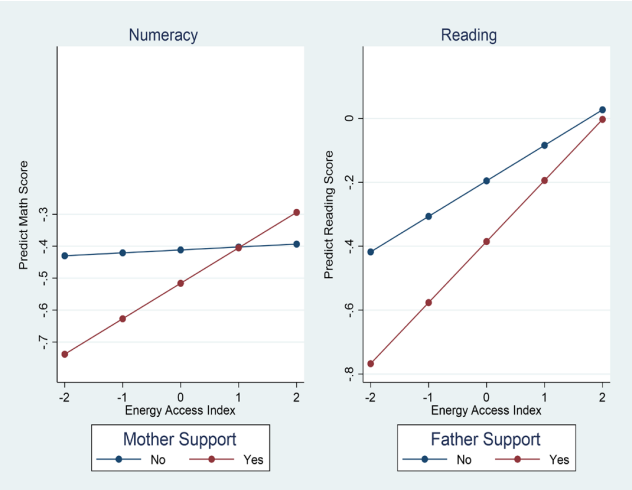


Figure 2: Estimated learning outcomes by energy access and parental support



1. Household energy access is linked to stronger reading performance, but not to average numeracy performance

Energy access alone is therefore unlikely to address learning gaps across subjects or groups of pupils.

2. The relationship is strongest among higher-performing pupils

Household energy access is positively associated with reading across the performance distribution, with the strongest relationship at the top. For numeracy, the association is statistically significant only among higher-performing pupils. The pattern suggests that energy investment alone may leave lower-performing pupils behind.

3. Parental support may extend the benefits to pupils being left behind

In rural areas, the relationship between energy access and learning outcomes changes when parental homework support is present. The analysis finds that:

- When mothers provide homework support, household energy access is positively associated with better numeracy outcomes among initially low-performing pupils.
- When fathers provide homework support, household energy access is associated with modest additional reading gains.

Yet these average results mask important differences across pupils: the positive reading pattern becomes more pronounced as performance rises, while in numeracy it emerges only at the upper end of the performance distribution.

Implications for policy

The evidence supports a staged approach: continue improving rural energy access, test targeted parental support alongside it, and scale only if the combined intervention proves effective (Table 1).

Conclusions and policy messages

Household energy access is associated with stronger reading outcomes, but the relationship is uneven and does not extend to average numeracy performance. Yet these average results mask important differences across pupils: the positive reading pattern becomes more pronounced as performance rises, while in numeracy it emerges only at the upper end of the performance distribution. Moderation analysis further shows that parental homework support emerges as a potentially important complement in rural areas. Maternal support is associated with better numeracy outcomes among initially low-performing pupils, while paternal support is associated with modest additional reading gains.

These findings justify closer coordination between MINEE and MINEDUB but not immediate national scale-up. A targeted pilot, accompanied by monitoring and evaluation, should test whether combined energy and parental-support interventions improve outcomes in practice before institutionalization.

Roadmap for implementation and upcoming research

MINEE and MINEDUB should lead a staged pilot in underserved rural communities, with MINPROFF supporting mobilisation and the Ministry of Finance and relevant partners supporting financing and evaluation.

Table 1: Policy options

Policy option	Evidence basis	Intended benefit	Resources	Feasibility	Main risk
Expand reliable rural household energy access	Positive association with reading; no significant average association with numeracy	Better conditions for home study	High	Aligns with existing energy plans	Unequal benefits; poor reliability
Pilot parental-support modules alongside energy programmes	Parental support is associated with more inclusive reading and numeracy patterns in rural areas	More inclusive learning benefits	Moderate	Can use schools and community networks	Low participation; gendered delivery
Evaluate the combined pilot	Observational evidence cannot establish causality	Test effectiveness before scale-up	Moderate	Needs agreed indicators and evaluation capacity	Weak baseline or delivery data
Scale only if effective	Positive pilot results	Sustained delivery	High	Joint financing	Premature scale-up

Short-term (0–12 months): target, co-design and establish a baseline

MINEE should:

- Use updated georeferenced data to select underserved rural communities with primary schools and limited household access to electricity and clean cooking.

Ministry of Basic Education (MINEDUB) should:

- Use MINEE's targeting data to identify pilot households, review existing PAREC parental-engagement activities, and co-design short reading and numeracy modules for mothers and fathers.

Medium-term (12–36 months): implement and evaluate the combined pilot

MINEE should:

- Deliver reliable household energy support with clear quality and maintenance standards.

MINEDUB should:

- Deliver practical reading and numeracy modules to mothers and fathers through schools and community structures.
- Track participation, delivery quality and pupil outcomes against a baseline.

MINPROFF should:

- Mobilise community networks and address barriers to sustained parental participation.

Long-term (after evaluation): scale what works

MINEE and the Ministry of Finance should:

- Expand rural energy access as pilot results and available financing allow.

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About this brief

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