



## **TERMS OF REFERENCE**

**For**

**Landscape analysis**

**Of**

**The role of Language**

**In**

**Early Grades Mathematics Education**

## **1. Purpose**

This is a call for service providers to conduct a landscape study on the role of language in the teaching and learning of mathematics in the early grade (Grade R – 4). Zenex wishes to undertake this process to examine current constraints, practices and available research/evidence to better understand how language is used to enhance teaching and learning in early grade mathematics. The study should consider published research, Department of Basic Education policy documents on language of learning and teaching in schools and verified data from school interventions and evaluations.

The TORs are targeted at academics, practitioners and individual consultant involved in the area of language and mathematics in education.

## **2. Background and rationale**

Language is critical for cognitive development as it provides the concepts for thinking and therefore a means for expressing ideas and asking questions (Vygotsky, 1989). Traditionally, the challenges associated with learning mathematics were largely seen as coming from the cognitive demands of mathematics itself. It is now widely accepted that language is a prerequisite for mathematics learning and teaching (Sharma, 2016). Mathematics is strongly connected with language and to succeed in mathematics, learners must be able to competently understand and use mathematical language (Walshaw, 2009).

According to the Curriculum Assessment Policy Statement (CAPS), learning to communicate mathematically is central to what it means to learn mathematics. Learners are expected to participate in a variety of mathematical talk and written practices, such as explaining solution processes, describing conjectures, proving conclusions, and presenting arguments. The official description of the mathematics learning area emphasises the role that language plays in the expression, development and contestation of mathematics (Setati, 2003).

South Africa has 11 official languages with English and Afrikaans being the most academically developed. The South African legislation and education policy does not prescribe which of the 11 languages schools must use for learning and teaching. This responsibility is left to the school governing body, which is made up of the school principal, staff members and parents. In terms of The Language in Education Policy (LIEP), the language of instruction in a school can only be an official language. While English-speaking learners and most Afrikaans-speaking learners learn through the medium of their home language throughout schooling, and also take it as a subject, African language speakers in Grades 1, 2 and 3 are taught in their home language and then switch to a different medium of instruction (usually English) from Grade 4.

The multilingual nature of South African society makes the development and implementation of language policies complex, especially in education, where non-indigenous languages still play an important role. It also affects how the learning of additional languages is understood and interpreted, especially in an environment where multiple languages are used, and because of the interactions that are possible among the languages and the processes involved in learning them (Cenoz & Genesee, 1998).

### **3. Scope of the landscape study**

The Foundation is calling for proposals to undertake a landscape analysis to inform its strategy and to build evidence of the role of language in mathematics education in Grade R - 4 in the country. The landscape analysis should entail the following:

- What are the challenges/difficulties of teaching and learning mathematics in African languages in South African classrooms?
  - What pedagogical approaches do teachers employ?
- What are the challenges/difficulties of teaching and learning mathematics in multilingual classrooms in South Africa?
  - How monolingual mathematics resources are integrated teaching multilingual classrooms?
- What is the impact of the transition to English at grade 4 on the learner's understanding of mathematics?

Implementing partners are expected to employ innovative approaches in undertaking the study, including.

- Relevant extensive literature review.
- Review of evaluations on the interventions conducted in this area.
- Qualitative studies

### **3.1. Deliverables**

The study should provide a comprehensive overview of language usage in the early grades implemented between 2016 and 2021.

### **3.2 Proposal Submission and Selection Process**

The applicant must submit a proposal to the Foundation that sets out how they will undertake this landscape analysis. Applicants can also collaborate with other individuals and organisations to ensure that the required capacity and expertise is available within their team.

The proposal must include:

- A brief outline of your understanding of the task
- An outline of the process, methodology and landscape mapping strategy that you propose.
- A plan with high-level activities, period and budget.
- Experience and expertise of the organisation and team that will undertake the study.
- List of team members. This includes brief CVs of the team leader and researchers/evaluators.

Following the submission of proposals, a shortlist of potential applicants may be required to attend an interview process. The proposal will be assessed against the following criteria:

- Understanding and interpretation of the task
- The approach to the task, including methodology and data collection and analysis
- Experience and expertise in the field

- Organisational capacity
- Cost

#### 4. Deliverables and time frame

Deliverable	Date
Submission of proposal	15 July 2022
Letter of appointment	30 July 2022
Meeting to agree and finalise the scope of work, methodology, and plan	05 August 2022
Final Report and presentation	30 September 2022

#### 5. Intellectual Property

The appointed Implementing partner will assign to Zenex Foundation its copyright to all data, instruments, documents, and reports emanating from this study.

Permission may be sought by the implementing partner to use any data from the landscape Analysis. Permission will not be unreasonably withheld provided the data will make a positive contribution to the sector and all reports; presentations emanating from such acknowledge the Foundation's role and copies are shared with both parties.

The results of the findings will be shared with the broader sector and other participating stakeholders.

## **6. Budget and contact details**

The total amount allocated to undertake The Study is R100 000.00

### **6.1 Contact Details**

Submit your Proposals to:

**Mr. Sam Rametse**

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