



## Interventions and Development of Mathematics Education for Primary Schools

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My presentation discussed the work of two research and development projects in my country, Malawi, which I coordinated since 2014, and how the work responded to the needs and context of mathematics education in Malawi. For more than two decades, Malawi has been concerned about low learner achievement in mathematics as indicated by national and international assessments. The concerns are similar to other countries in sub-Saharan Africa, where the mathematics achievement of most learners in primary schools is below their grade level. There have been some interventions aimed at addressing this concern by targeting schools, teachers and learners. I shared these briefly as part of the background. Then I shared the work of 'my' two projects called *Improving quality and capacity of mathematics teacher education in Malawi project (2014-2019)*, and *Strengthening numeracy in early years of primary school through professional development of teachers project (2017-2022)*. I focused on the research and interventions by the projects, in particular the intervention on counting in the first two grades of primary school.

Counting in the first two grades of primary was identified as something that teachers do with students in every mathematics lesson. We observed that teachers used songs and play to count with learners and that this was exciting and motivating for the students. However, the counting was always starting from 1, and counting forwards in ones. The project introduced an intervention in the form of workshops and lesson study where teachers participated in counting activities including counting principles, counting forwards and backwards, choral counting and counting collections. The teachers were encouraged to use the counting activities in their teaching, and they were requested to conduct lesson study on counting to learn about their teaching and students' learning. We visited the schools to observe lessons, discuss with the teachers and offer professional support.

From the lesson observations and discussions with teachers, we found that the teachers had enhanced their understanding of teaching counting. Teachers used more mathematically meaningful counting activities in their lessons; students were counting forwards and backwards from any number, skip counting, as well as identifying patterns when counting on an arrangement of numbers. The teacher adapted their song and play to include these. Furthermore, teachers own reflections reported improvement of their teaching of counting after the intervention. The findings have implications for research in mathematics education.

I concluded by emphasising that interventions need to acknowledge and strengthen existing skills in teachers while developing new skills. The teachers were good at counting with young students through songs and play in a motivating way. The intervention needed to strengthen their approach, by keeping the counting songs and extending from the rote counting to more mathematically meaningful counting. There is a lot we can learn from contexts like Malawi to complement our understanding of mathematics education that we learn from other 'more visible' contexts. Mathematics Education research associations in the various regions such as MERGA and SAARMSTE have a role to play.