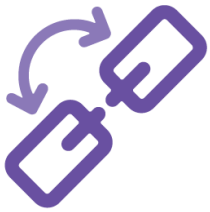
# SOUTH AFRICAN NUMERACY CHAIR PROJECT INITIATIVES

## BINDING CONSTRAINTS IN EDUCATION REPORT

A binding constraint is defined as one that, if not addressed first, prevents sustained improvement in all areas



A recent report[1] provides an overview of a large research project undertaken by a team of economists at Stellenbosch university in 2015/16 under the Programme to Support Pro-poor Policy development.

The binding constraints approach adopted by this research project recognises that addressing systemic challenges effectively requires a high degree of prioritisation. It is impossible to simultaneously address all issues. Certain things must be tackled first, as they preclude progress in other areas.

This report together with the research articles, interviews and discussions that underpin it identifies four binding constraints which must all be addressed if there is to be a meaningful improvement in learning outcomes for poorer children in South Africa. Four 4 binding constraints emerged from this research:

- Weak institutional functionality
- Undue union influence
- Weak teacher content knowledge and pedagogical skills
- Wasted learning time and insufficient opportunity to learn

The report states that these four factors interact and lead to weak educational outcomes.

At the 2016 Maths Chairs Community of practice forum, the SANC project were asked to group our offerings according to the constraints that they address. The graphic below indicates the two constraints our work specifically addresses.

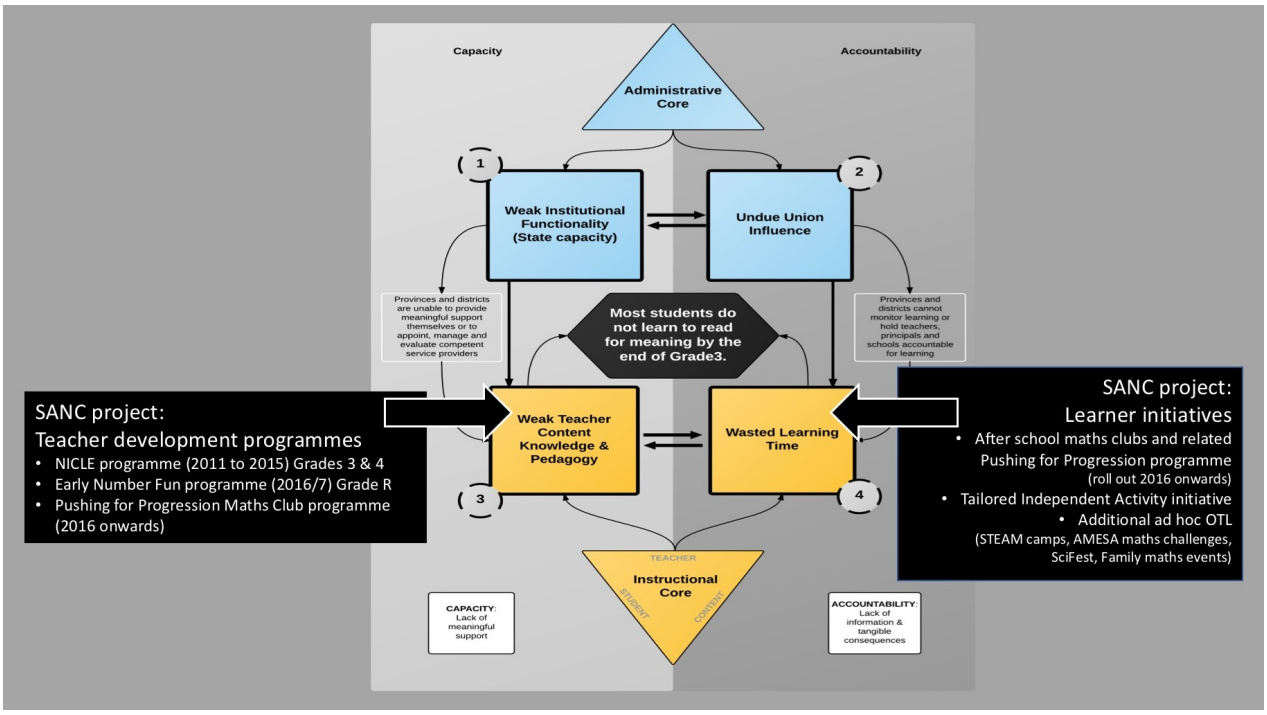
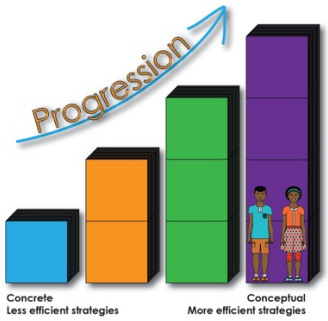



**Figure 1:Areas where SANC project work contributes**

[1] Identifying Binding Constraints in Education: synthesis report for the Programme to support Pro-poor Policy development (24 May 2016), van der Berg, Spaull, Wills, Gustafsson and Kotzé

# SOUTH AFRICAN NUMERACY CHAIR (SANC) PROJECT: INITIATIVES THAT RESPOND TO THESE CONSTRAINTS


## TEACHER DEVELOPMENT PROGRAMMES: INCREASING KNOWLEDGE AND PROFESSIONALISM

Through a regular longitudinal community of practice informed development programme with teachers from 17 schools and are developing a strong committed and passionate teaching community. Our teacher development programmes have a strong focus on:

| | |
|---|---|
| • Sense making | • Using conceptual key resources |
| • Progression from concrete | • Developing productive learning dispositions |
| • Mental mathematical fluency | • Homework practices |
| • Use of efficient strategies | • Language practices as a resource |

As well an increase in learner performance, this focus has seen changes in teachers':

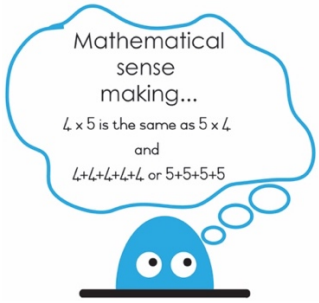
- Take up of leadership roles
- Ways of understanding of mathematics
- Classroom practice

## LEARNER INITIATIVES: INCREASING OPPORTUNITIES TO LEARN

### AFTER SCHOOL CLUBS

Clubs provide learners with access to sense making and recovery for progression as well as spaces where they are able to spend more time working with mathematics. Clubs focus on:

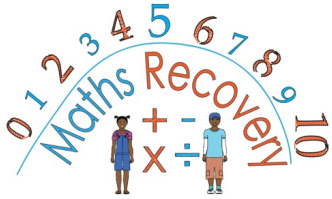
- Strengthening learners' mathematical foundations
- Sense making, connection, conceptual understanding
- Increasing efficiency and progression
- Extending and challenging
- Developing positive learning dispositions




### TAILORED INDEPENDENT ACTIVITY

Our take home tailored independent activity books allow teachers to provide learners with booklets that learners work with at home. Features include:

- Learners work at their own pace
- Assist in strengthening learner mathematical foundations
- Focus in sense making, connection, conceptual understanding and progression
- Support revising concepts from earlier grades




### AD HOC ACTIVITIES

Arranged annually, these happen on an ad-hoc basis. Our project has been instrumental in setting these up in the community and creating models for how they work.

| | |
|---|---|
| • Maths and science camps | • Family maths events |
| • AMESA maths challenges | • SciFest activities |