

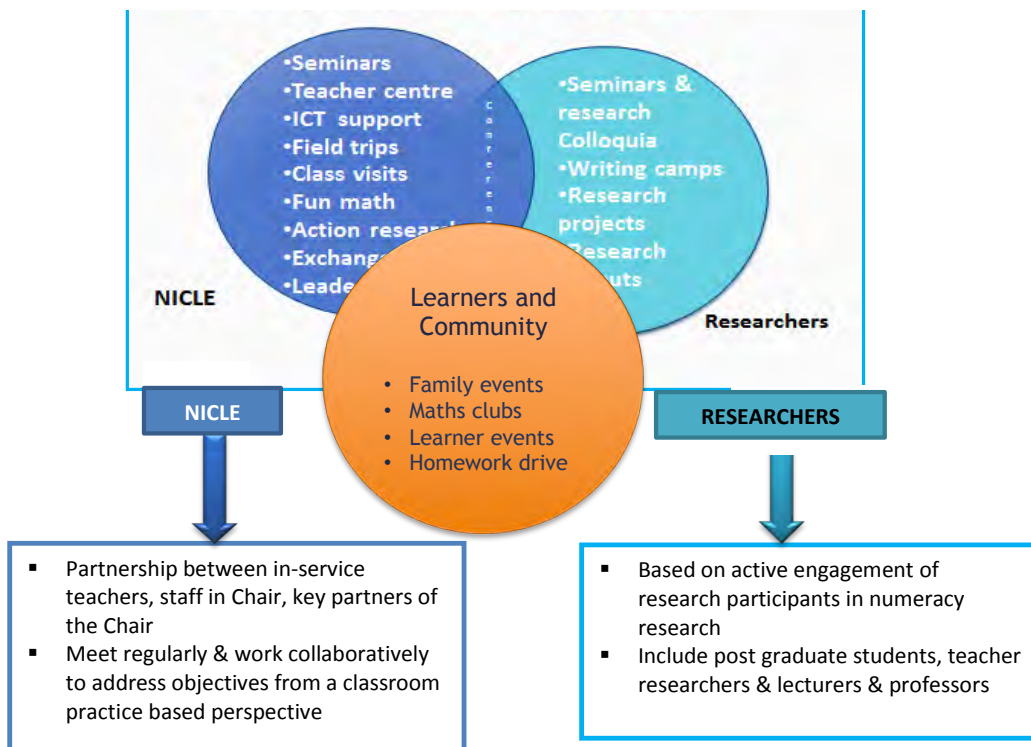
# STRENGTHENING MATH LEARNING DISPOSITIONS

South African Numeracy Chair Project  
Rhodes University

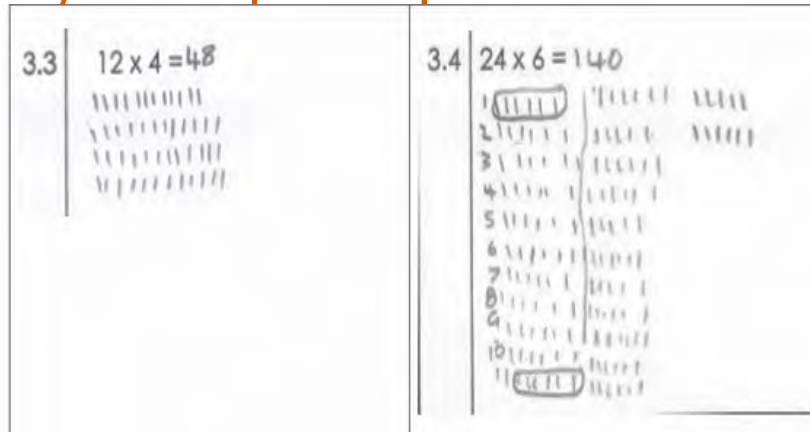


PME Tasmania: July 2015  
Prof Mellony Graven

- A hub of mathematical activity, passion and innovation
- Interconnected communities of practice



- ANA results - by Gr 9 national ave 11%
- By grade 4 most learners 2 grades behind
- Majority can't participate - work is beyond ZPD



- Whole class teaching, ritual participation, little written work, books - focus neatness & marked for inspection (4 sums a day)
- Absence of sense-making, creative and independent thinking, steady effort and resilience



## Clubs as opportune spaces

- \* Actively promote active participation, argumentation, resilience, fun, messy exploration - mistakes are great learning opportunities!
- \* free from grade specific curriculum demands - recover and extend
- \* learners can work at own pace, peer support, activities can be individually tailored, volunteer support harnessed
- \* for those living in poverty conditions (i.e. the majority) providing needed opportunities for continued academic learning outside of school hours.
- \* Increasing learner agency
- \* Challenges: schools closed in the afternoon



## Clubs opportunities for our own learning

- trial methods/ ideas/ resources for NICLE
- Empirical field for research team enabling strong relationship between research and development
- Dual approach with teacher development - enabling catalysts for modeling new ways of participating

|                      | May                | Nov  | May 2013  |
|----------------------|--------------------|--|---|
| Self evaluation      | 2                  | 9  | 9   |
| Sam is...            | Good at maths      | Sam loves Maths because: he knows maths very well  | Listens a lot and can remember what the teacher tells him. He is working everyday in his book. If he has done everything he shows the teacher and then fixes mistakes   |
| Feelings about maths | I don't like maths | I'm loving maths. It's so nice to be in maths class. It's my favourite thing. I have a (good work) sticker in my book. When I am big I will study it, maybe become a teacher, it will be fun for me to do maths with children. With other children we play school in class and I give them maths problems. Its lovely to do maths. | I love maths because its nice to do it and we learn more (in club) than what we do at school.<br><br>Other: In maths club we do harder activities. Its nice we have fun |

**Table 1: Jess's responses to mathematics dispositional questions**

|                              | Ways of participating/ understanding   |
|------------------------------|--|
| Leonard and Bernie's teacher | <ul style="list-style-type: none"> <li>- Leonard's maths improved a lot. He is enjoying every lesson.</li> <li>- He (Leonard) likes to solve the problems on his own. Even his reading skills improved. He likes to draw in order to illustrate his problem.</li> <li>- Yes Leonard understands how to solve problems. He can work on his own and likes to explain how he got an answer and is proud to help others</li> <li>- Bernie's confidence and group participation improved. She loves maths and likes group work and to discuss while solving problems</li> </ul> |
| Jess's teacher               | <ul style="list-style-type: none"> <li>- Jess and the other learners definitely benefit from club. Although she struggles I can see she do her best to participate.</li> <li>- Their problem solving methods improved. They are very confident.</li> </ul>   |
| Sipho and Sonny's teacher    | <ul style="list-style-type: none"> <li>- Yes they were very quiet - ever since they joined the club they are lively.</li> </ul>  |
| Akhona's teacher             | <ul style="list-style-type: none"> <li>- Yes Akhona has become confident in answering questions verbally.</li> <li>- The fear of giving a wrong answer (hesitating) has decreased. She starts to take chances. She is still struggling with certain concepts but at least now she tries to find solutions for answers and not leave it hanging.</li> </ul>   |



## South African Numeracy Chair (SANC)Project



We are a hub of mathematical activity, passion & innovation that blends teacher & learner numeracy development with research in mathematics education in Grahamstown and South Africa.

### Within the Chair endeavour, our key projects include:

- [NICLE](#) teacher development programme
- [Starting After School Maths Clubs and Resources](#)
- [Homework Drive](#)
- [Grahamstown Numeracy Buzz](#): Family events, SciFest etc

### Community of Practice

The Chair participates in an annual Community of Practice forum. Latest presentation: [COP Presentation 2013](#)

### Latest SANC News

Read more on [Archive page](#)

- [Steve Lerman's lecture slides and Steve Lerman Vygotsky talk transcription July 2014](#)
- Prof Graven was invited to participate as a role model and mentor in the DST-NRF Research Career Advancement Fellowships Launch, which took place in Cape Town yesterday. Mellony hosted a table which focused on "Strategising Ways In Which Career Advancement And Societal Responsibilities Can Support Each Other".
- June NICLE session focused on teaching and learning measurement. [Read more](#)

