



AIMS

African Institute for
Mathematical Sciences
SOUTH AFRICA

Drawing on the expertise of
partnering institutions to promote
IBSME as a common approach to
teaching and learning

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South African Population

55.7 million

Age \leq 35)

36.7 million (66%)

9 provinces

20.1 million (36%)

11 languages

AIMS South Africa,
Cape Town



Source: STATS SA

Primary Schools

- ~ 14 600 primary schools
- Taught in mother tongue to grade 3
- Language of Learning and Teaching – English (90%) or Afrikaans (10%) (from Grade 4)
- SACMEQ III report: 79% of mathematics teachers in South Africa who taught Grade 6 learners obtained below the levels required for the learners to pass Grade 6

Secondary Schools

- ~6270 secondary schools
- 6.6% of secondary schools produce half the national passes in mathematics
- Top 1000 schools of the 93.4% remaining schools: teacher qualifications and teacher experience had no statistical significance in relation to the learners' results
- TIMSS 2011 Report, Grade 9 learners performed better by teachers who specialised in Subject Content Knowledge (SCK) and Pedagogical Content Knowledge (PCK)

School Context



www.wynghs.co.za/



www.schoolsplus.co.uk/millthorpe/facilities/main-school-hall/



www.citi.org.za/2015/03/19/unlocking-innovation-technology-development-khayelitsha/

School Context



Classroom Environment

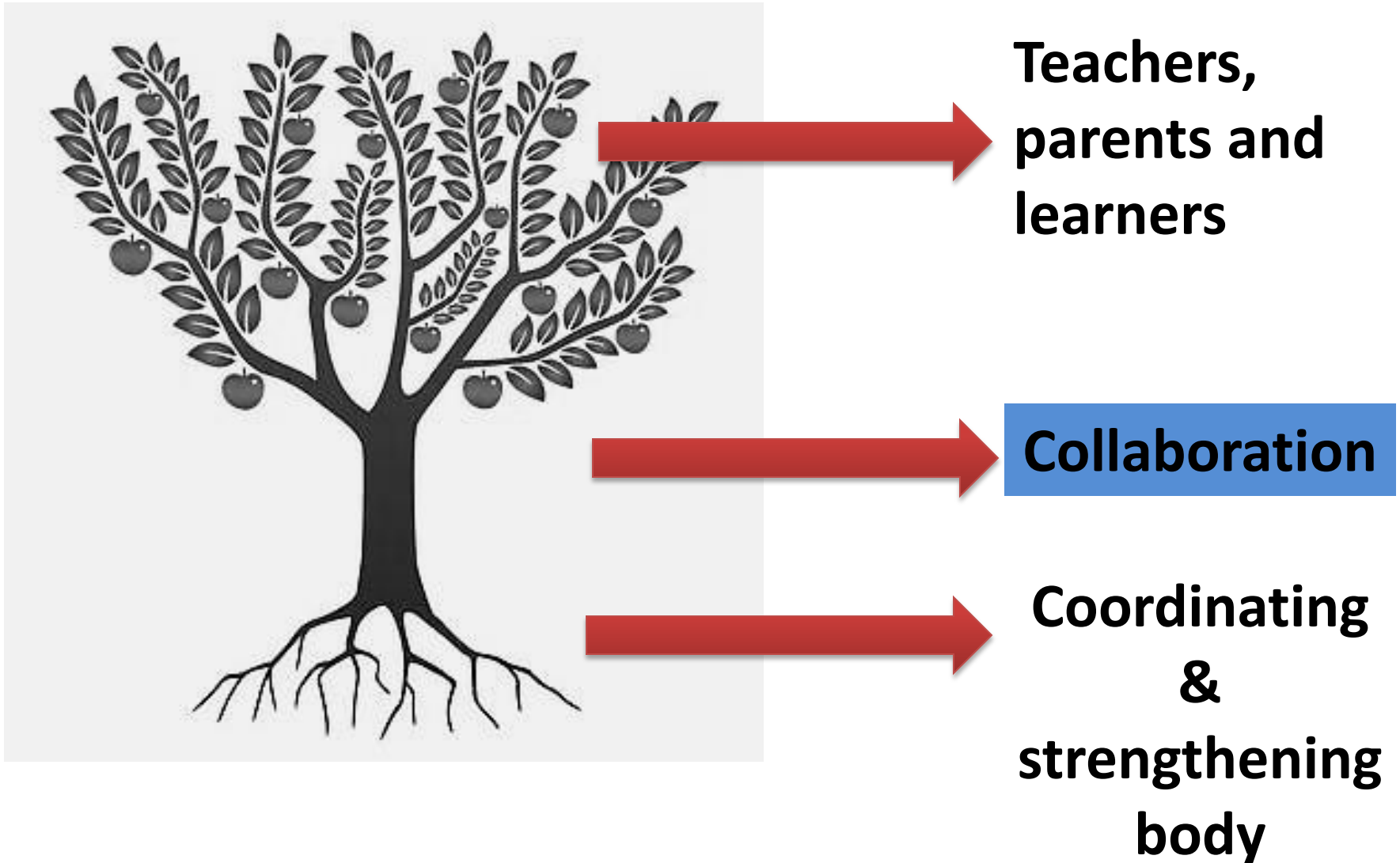


Interventions

- Upgrade qualifications
- Specialisation short courses
- Workshops
- Innovation projects
- Cluster projects
- Content gap

Little coordination across interventions and institutions.

Proposed approach to promote IBSME



Initial Collaboration

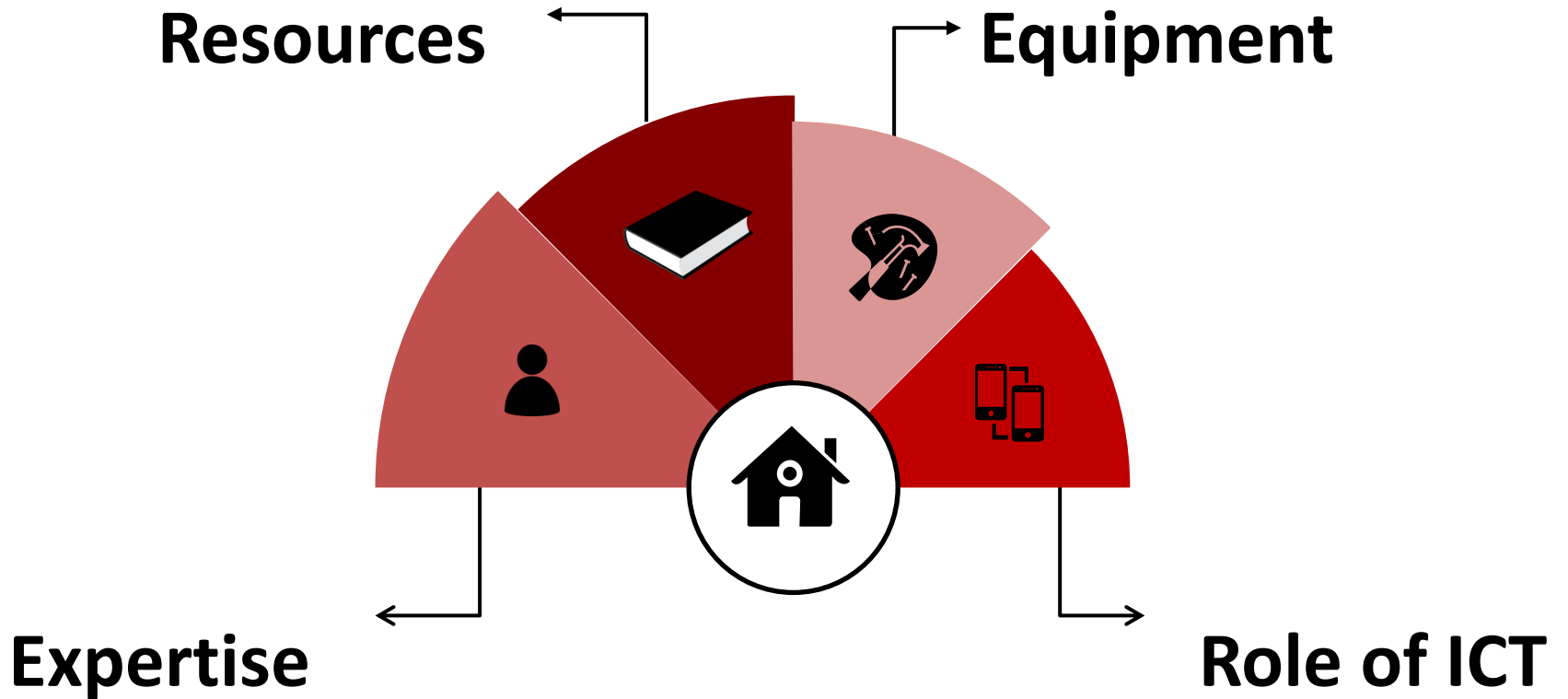
- AIMSSEC (AIMS Schools Enrichment Centre)
- Primary Science Programme
- University of Cape Town (Schools Development Unit)
- University of the Western Cape
- Western Cape Education Department



AIMSSEC

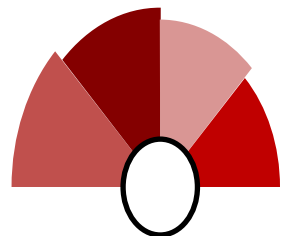


Teacher Training



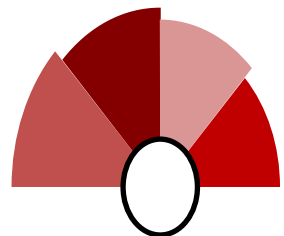
Expertise

- Rural and disadvantaged schools
- Face-to-face, distance and blended learning
- School-based support
- Research-informed interventions
- Integration of theory with context
- Teacher mentorship programme
- Collaboration between scientists and teachers



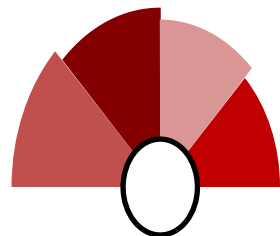
Resources

- Textbooks
- Learner support materials
- Professional development materials
- Online resources
- Endorsed/accredited courses
- Western Cape Education Department ePortal



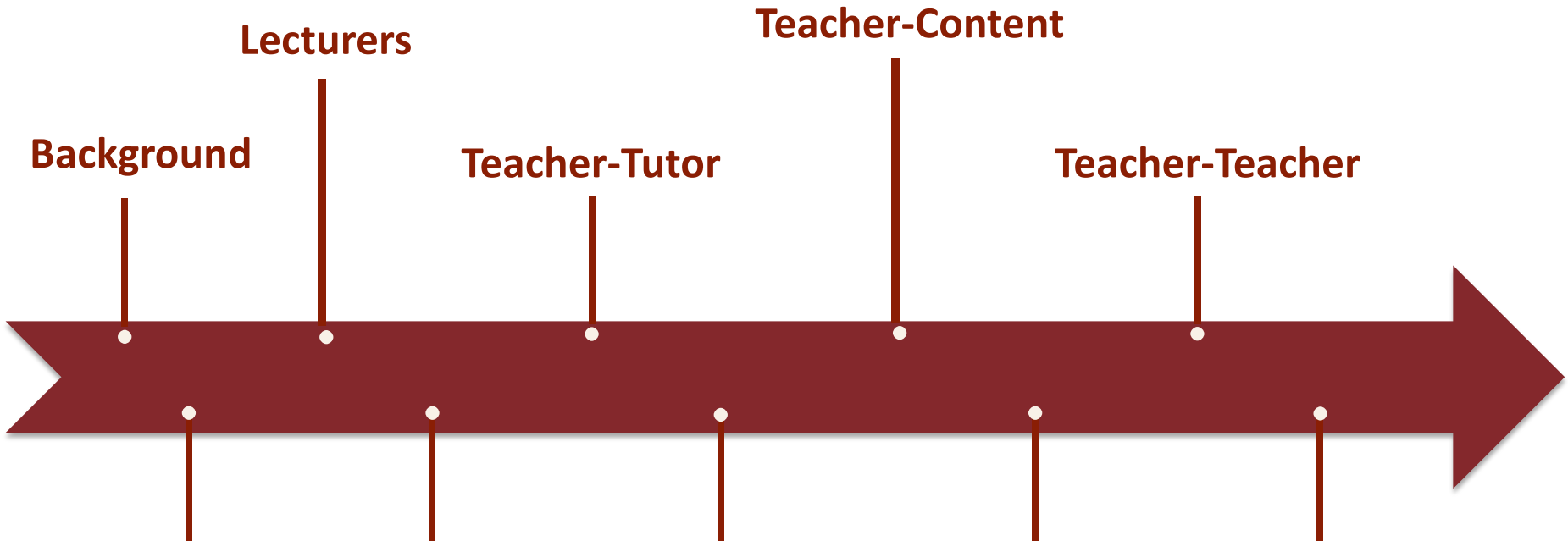
Equipment

- Office space at AIMSSEC, teaching facilities at two universities and one NGO, one boarding school
- Cape Teaching and Leadership Institute – Professional Development Centre of the Western Cape Education Department
- ICT infrastructure and devices being rolled out in Western Cape to all schools



Role of ICT

Problems



Background

Lecturers

Teacher-Content

Teacher-Tutor

Teacher-Teacher

Training

- Teaching Tools
- MS Office
- GeoGebra
- Internet Skills
- Communication

Technology

- Google Apps
- Moodle
- Skype
- Vidyo

Technology

- Gmail
- Moodle
- WhatsApp

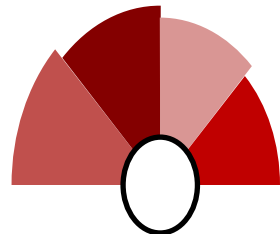
Technology

- Telematics
- SMART IWB

Technology

- AH Blog
- Social Media

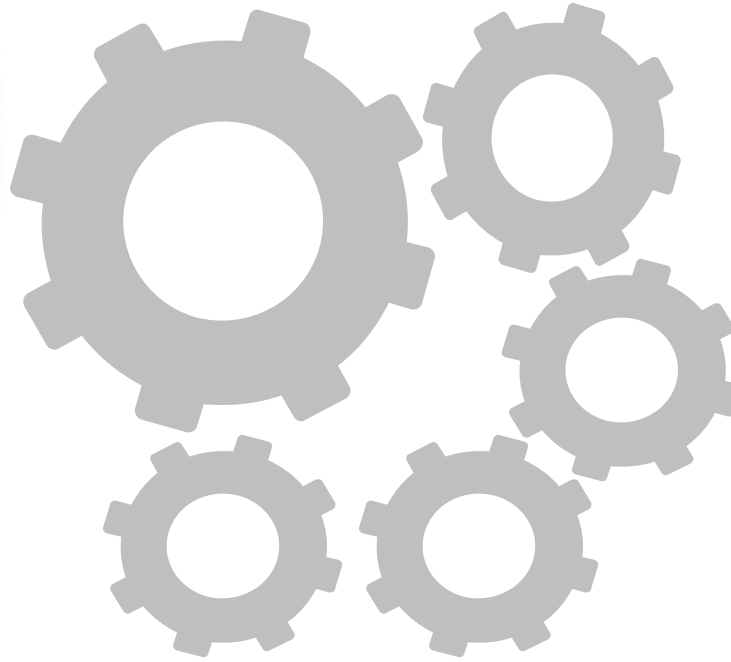
Solutions



Professional Learning Model



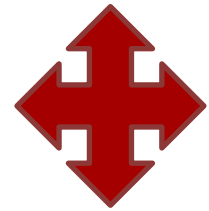
Teachers



Free resources



**World class
teacher trainers**



**Professional
Pathways**



Tutor system



PLNs

Thank you