

ASSAF Forum on School Maths and Science Programme



PHYSICAL SCIENCES &
TECHNOLOGY GROUP

What we know

- ❑ Low participation by learners
- ❑ Low performance from those who enter
- ❑ Inadequate numbers of educators with appropriate qualifications
- ❑ Inadequate new entrants to teaching
- ❑ Inadequate in-service opportunities to upgrade content knowledge and professional skills

What we know Contd.

- ❑ Inadequate (English) language skills of learners reaching grade 10
- ❑ Shortage of learning and teaching resources
- ❑ Too few subject advisors
- ❑ Classes are too large

Origins

- Previous educational policies
- Negative attitudes by learners
- Lack of perceived relevance
- Cultural differences and expectations?

Origins Cont.

- ❑ Poorly qualified (black) educator corps
- ❑ Poorly resourced schools especially in rural areas and poor urban areas
- ❑ Weaknesses in community and parental support

Six Knowledge Areas & Time Allocation

- Matter and materials (25.00%)
- Systems (18.75%)
- Change (18.75%)
- Mechanics (12.50%)
- Waves, sound and light (12.50%)
- Electricity and magnetism (12.50%)

Competencies to be Developed

- ❑ Scientific knowledge and enterprise
- ❑ Tentativeness and contestation
- ❑ Contextualisation
- ❑ Powers and limitations of science
- ❑ Socio-cultural relevance of science
- ❑ Socio-scientific issues

Learning Outcomes

- Doing (skills), applying and constructing knowledge
- Knowing (knowledge)
- Being and becoming (values and attitudes)

Ideal profile of grade 12 physical science completer.

Should be able to:

- Identify and solve problems-has content and psolving-skills
- Make decisions based on critical thinking
- Work cooperatively with others as a team
- Act as responsible citizen-science education for citizenship
- Communicate effectively
- Use S & T to understand how the world works economically, socially, technologically, culturally, and environmentally

Educational and Career Paths

- Academic courses in science and science-related programmes
- Professional science-related programmes
- Vocational career-related programmes

Suitability of NCS Exam

- ❑ Is the selection of core content appropriate and adequate?
- ❑ Are the skills to be developed appropriate and adequate?
- ❑ Do the exam papers assess the knowledge and skills specified in the curriculum?

Suitability of Exam

- ❑ Does the exam adequately test higher level thinking skills?
- ❑ Is the relative weighting of the learning outcomes in the exam appropriate?
- ❑ The NSC exam examines grade 12 work only? Is this appropriate?

Suitability of Exam Contd.

- ❑ Could the exam be contributing to poor results? What should be done differently?
- ❑ Does the syllabus provide sufficient grounding as preparation for further study in the subject?
- ❑ Should that be a priority? If not, what should the priority be?

Participants' outputs: What we can do

- Comments and recommendations-
together with justifications

THANK YOU
