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Paper No. 7
Developing Scientific and Technological Culture in The Commonwealth

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Hydra-Headed Monster

- Growth of S & T phenomenal
- Products and practice meet with universal acceptance
- Create careers & job opportunities
- Improve quality of life
- Enhance economic development
- Results and values ???

S&T in The C'wealth

- Not seen as integral part of popular culture
- Seen as foreign to popular/local culture
- School science isolated from scientific culture
- Rejection by many students
- Neither acceptable nor understood by the community

Natural Philosophy

- Feudal aristocracy in science has an historical origin
- Natural philosophy replaced old philosophies and scriptural teachings
- Science was institutionalised in the 17th C
- The Royal Society marked the beginning of feudalism

School Science

- Growth of science made it an alternative to old philosophy
- Source of acquiring skills, was the cultural and intellectual basis for a new form of life
- Science as part of the school curriculum in the 19th C
- Concern was mainly on "pure" science

A Language of Nature

- Scientific activities gave rise to scientific culture
- A product and process of scientific activities
- Became a way of interpreting and representing the world
Scientific Culture

- Aggregate knowledge, communication tools, technology and skills, behaviours, values and mores which govern the universal practice and use of science.
- Has two aspects:
  - operational-technical
  - and the utilitarian

The Two Cultures

- The pursuit of science created two cultures.
- The image of science presented by school science questioned.
- School science presents one form of world view.
- Relevance of school science in other cultures

C’wealth Co-operation

- Historical origins cemented through:
  - Arts & Culture
  - Sports
  - Political & Economic development
  - Education - exchange of personnel & scholarship
- Encouraging development of scientific culture is neglected
Why S & T Culture

The idea of scientific culture is to explore scientific education as the basis on which the general population understands the nature of science as a system of thought, and builds up its scientific picture of the world from a common international frontiers. (Solomon, 1996)

At least three main reasons for developing S & T culture arise:

1. The totality of human subsumes every endeavor
2. Science Education as part of education is a cultural enterprise
3. Learning is efficient when meaning making is situated within an environment familiar to the learner

Culture as Foundation

- Culture as the totality of all human subsumes every endeavor
- Science Education as part of education is a cultural enterprise
- Learning is efficient when meaning making is situated within an environment familiar to the learner

WV Differences

Cultural Border Crossings

Cultural Differences | Border Crossings
---------------------|---------------------
Congruent            | smooth
Different            | managed
Diverse              | hazardous
Discordant           | impossible
Globalization

- Effects of globalization will demand more change in our way of life.
- The change will place greater demand on the use of the scientific way of thought.
- New science education-for-all beyond 2000+ requires a global scientific culture.
- Many programs are already underway.

S&T & Globalization

- International effort towards the demands of globalization.
- Intra-national development among scientists and science students.
- Knowledge to understand and make appropriate choices.
- Reinforce scientific literacy for economic and political development.
- Acquisition of S&T culture is implicated.

Strategies

- Restructure science education.
- Focus on the utility part of scientific culture (S&T literacy).
- Use familiar materials and processes.
- Teach science through indigenous science and technology.
- Accommodate and assimilate both world views productively.