

Developing scientific and technological culture in the Commonwealth

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Advancing Scientific and Technological Culture in the Commonwealth

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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 ???

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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

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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

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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

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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

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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

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C'wealth Co-operation

- Historical origins cemented through:
 - Art & Culture
 - Sports
 - political & economic development
 - education- exchange of personnel & scholarship
- Encouraging development of scientific culture is neglected

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Why S & T Culture

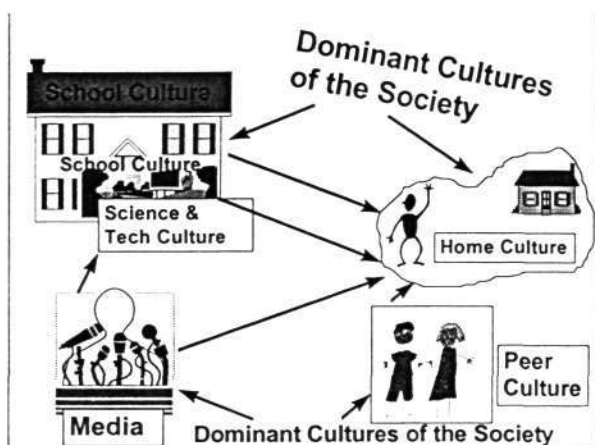
- "The idea of scientific culture is to explore scientific education as the basis on which the general population understands the nature of science as a system of thought, and builds up its scientific picture of the world from a common international frontier" [Solomon, 1996]
- At least three main reasons for developing S & T culture arise

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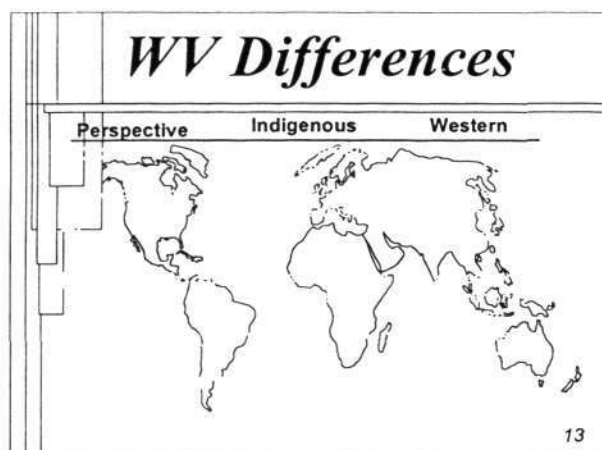
Culture as Foundation

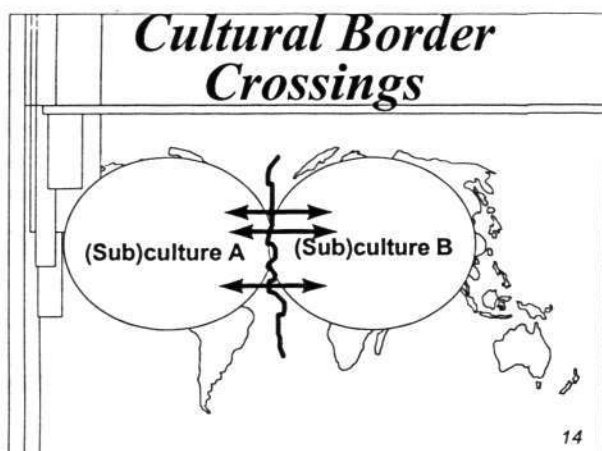
- Culture as the totality of all humans subsumes every endeavour
- Science Education as part of education is a cultural enterprise
- Learning is efficient when meaning making is situated within an environment familiar to the learner

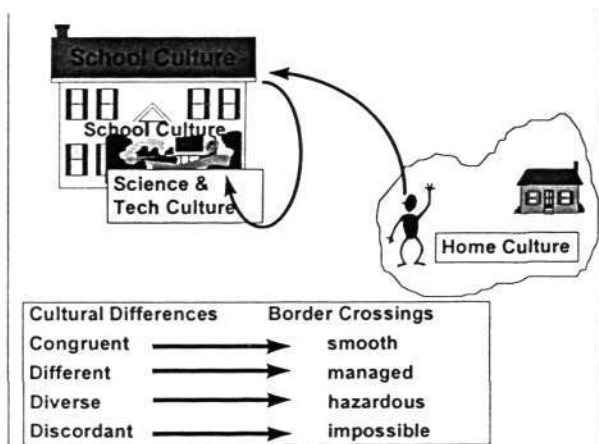
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Globalization

- 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 underway¹⁶

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

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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

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