



A proposal for teacher professional development in West Bengal and Bihar

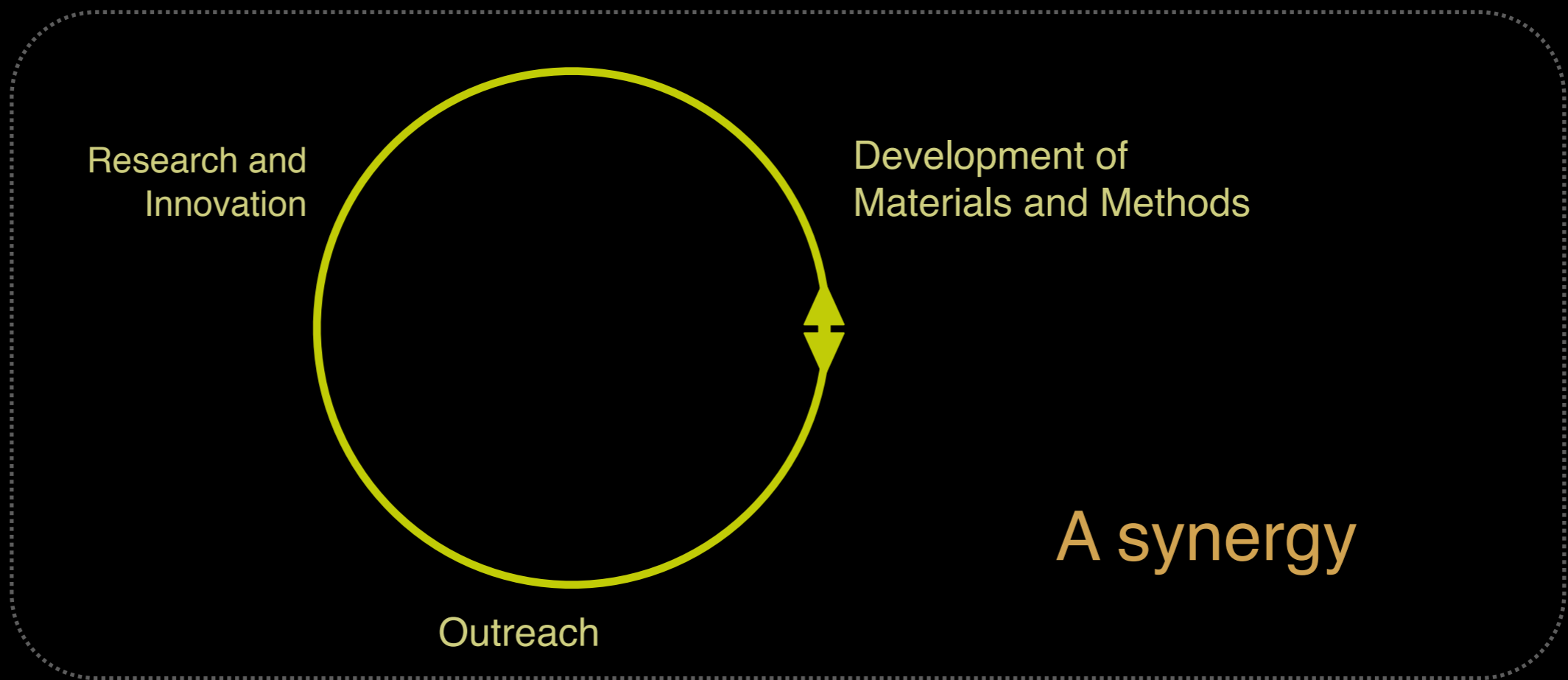
Submitted to MHRD, November 2011

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www.hbcse.tifr.res.in

Seminars in Kolkata on December 2 & 3, 2011
National Council of Science Museums
Saha Institute of Nuclear Physics
MHRD Regional Meeting (East & North-East)

HBCSE's Aim

To improve the quality of science and mathematics education in the country from primary school up to undergraduate level



Specifically we aim to:

- Generate new ideas Research and Innovation
- Translate them to useable forms Development of materials and methods
- Demonstrate or implement the ideas on a small or large scale Outreach

HBCSE - Finance and Infrastructure

- 1974-81 A project within TIFR, supported by the Dorabaji Tata Trust
- 1975-92 Housed in the Nana Chowk Municipal Secondary School
- 1981-97 A unit of TIFR
- 1992 Moved to Anushaktinagar Campus
- 1997-Present A Centre of TIFR
- 2002 TIFR a Deemed University
- 2002 Guest House; 2004 Olympiad Block; 2009 NIUS Labs and Hostel

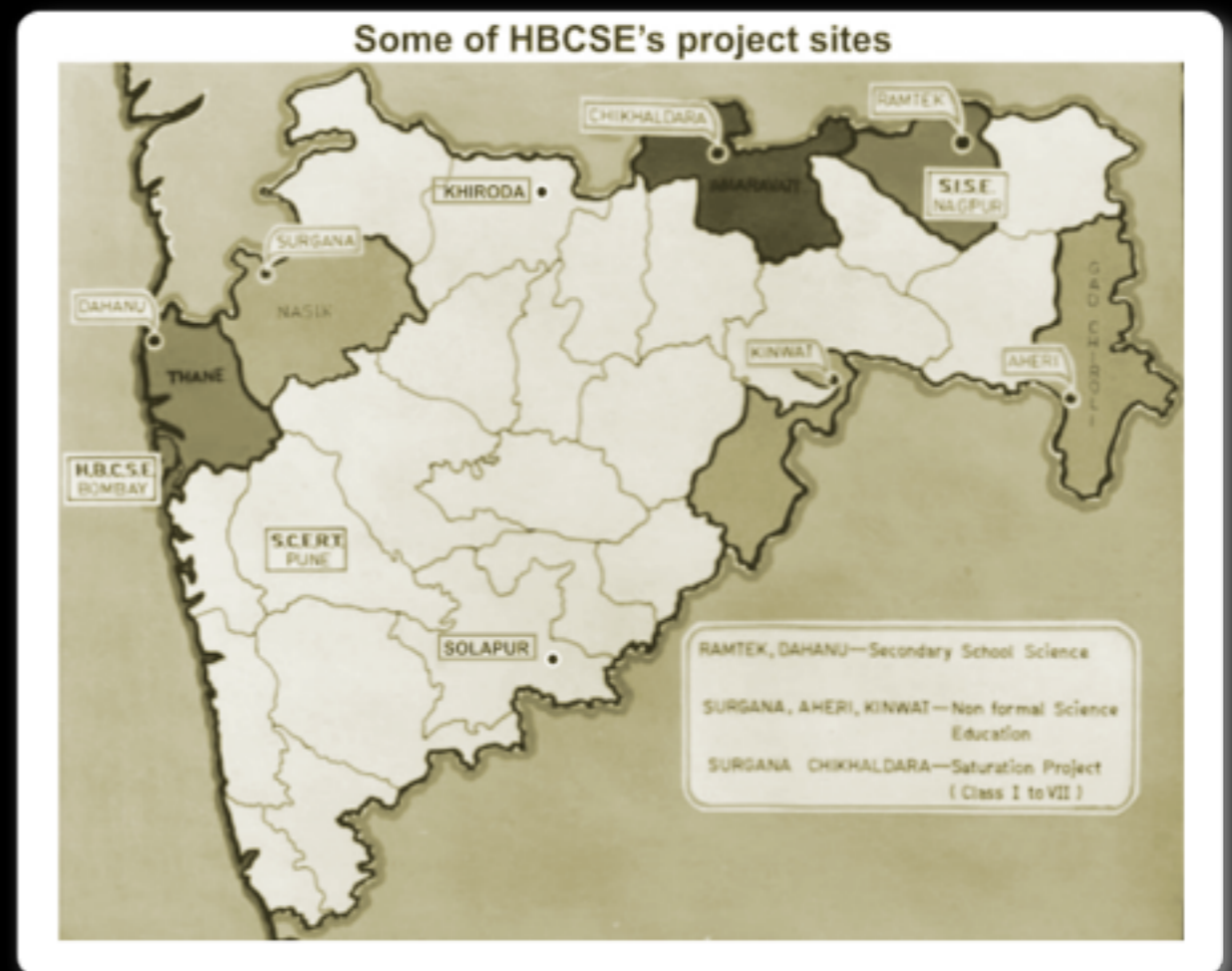
Projects in Rural Maharashtra (1975-98)

Rural projects

- Khiroda (Jalgaon)
- Pabal (Pune)
- Surgana (Nashik)
- Chikhaldara (Amravati)
- Ashram schools of Thane, Pune and Raigad... and others

Municipal Schools

- BMC (1970-83)
- SC/ST Talent Nurture (1980-86)
- SMC (1990-93)



Motivation for HBCSE's Early Projects (1975 -98)

- Root of the problem in social inequities
- Focus on first generation learners - Rural and municipal schools
- Language as a reflection of social inequity and also as a tool to challenge it
- Integration of research with field work - within the dynamics of an intervention

Popular Science Writings Enriched through Fieldwork

In Marathi, Hindi, English, Urdu

Some early books in 15 languages



Curricula Based on Research, Fieldwork and Classroom Trials



- Homi Bhabha Curriculum for Primary Science and Mathematics
- Textbooks, Workbooks and Teacher's books in English, Hindi, Marathi, Urdu

The epiSTEME series of Conferences

A biennial conference series to review research in Science, Technology and Mathematics Education (STME)



Since 2004

Drawing on philosophy, cognition, history and socio-cultural studies, providing a common forum for researchers from science, technology and mathematics education

- Historical, Philosophical and Socio-cultural Studies of STM: Implications for Education
- Cognitive and Affective Studies of STME
- Curriculum and Pedagogical Studies in STME



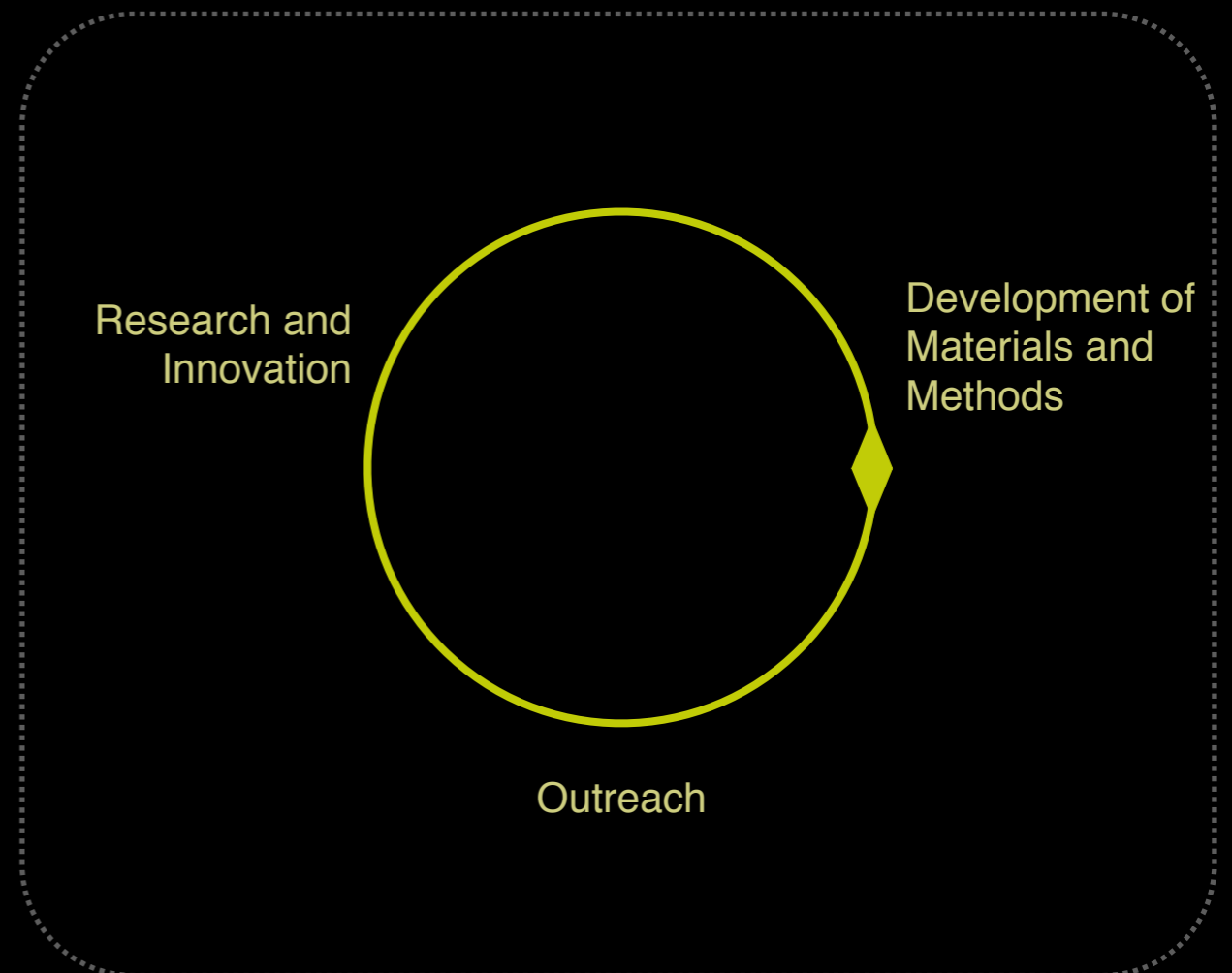
Programs at higher secondary and college level



- **Science and Mathematics Olympiads**
 - 5-step process of selection and orientation
 - Experiments, problem sets, pedagogical articles
- **National Initiative on Undergraduate Science**
 - Extended nurture of selected undergraduates for advanced studies and research in science

HBCSE's proposal for teacher professional development

- A synergy of research, development and outreach
- 50 teacher educators each in West Bengal and Bihar
- Translating a National consensus from policy level to practice
- A “new” area for HBCSE

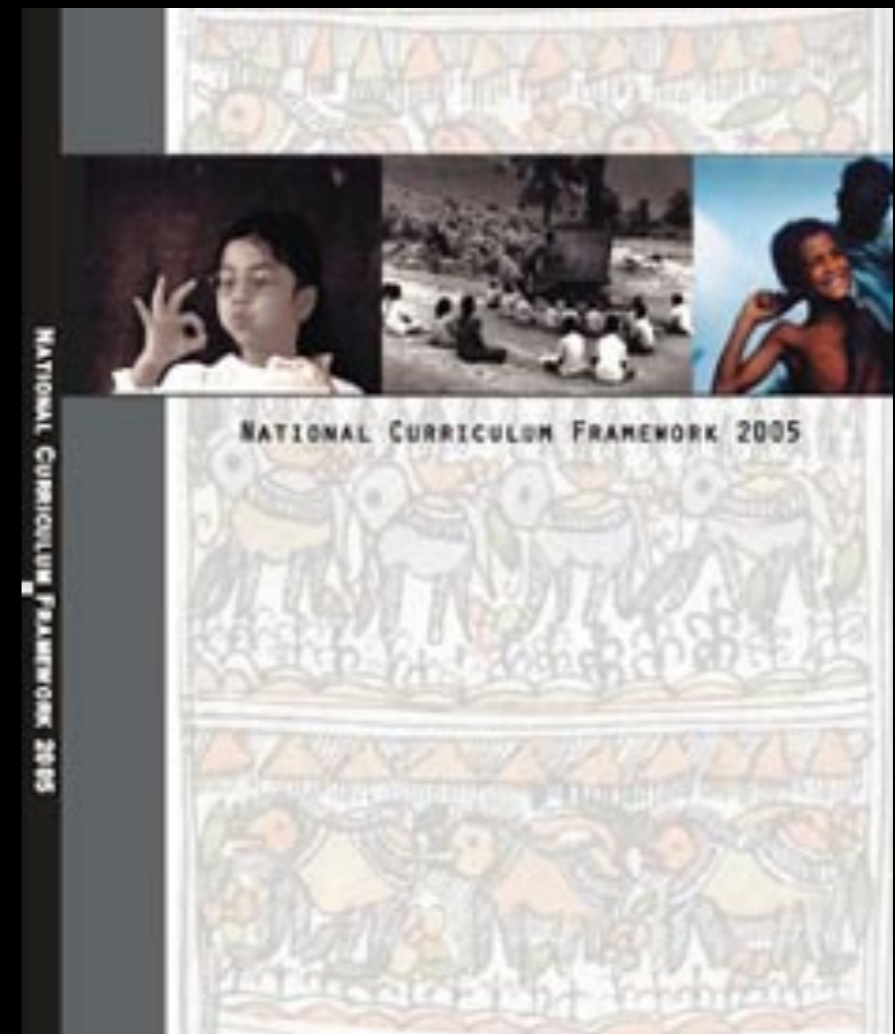


A National Consensus

- National Curriculum Framework NCF, 2005
- National Knowledge Commission - Report to the Nation, 2006
- Right to Education Act RTE, 2009
- National Curriculum Framework for Teacher Education NCFTE, 2010

A new vision of education NCF 2005

- Active participation of students in guiding learning
- Reasoning as opposed to authority
- Prior knowledge and abilities as starting points
- Space for students' expression through speech, writing and action
- A culture of listening and discourse



A new vision of education NCFTE 2010

- Teachers are central to any educational reform
- Teacher education open and flexible
- Dialogical exploration rather than didactic instruction
- Diversity in social contexts and environments
- Reflective practice rather than fixed knowledge base

National Curriculum Framework for Teacher Education

*Towards Preparing Professional
and Humane Teacher*

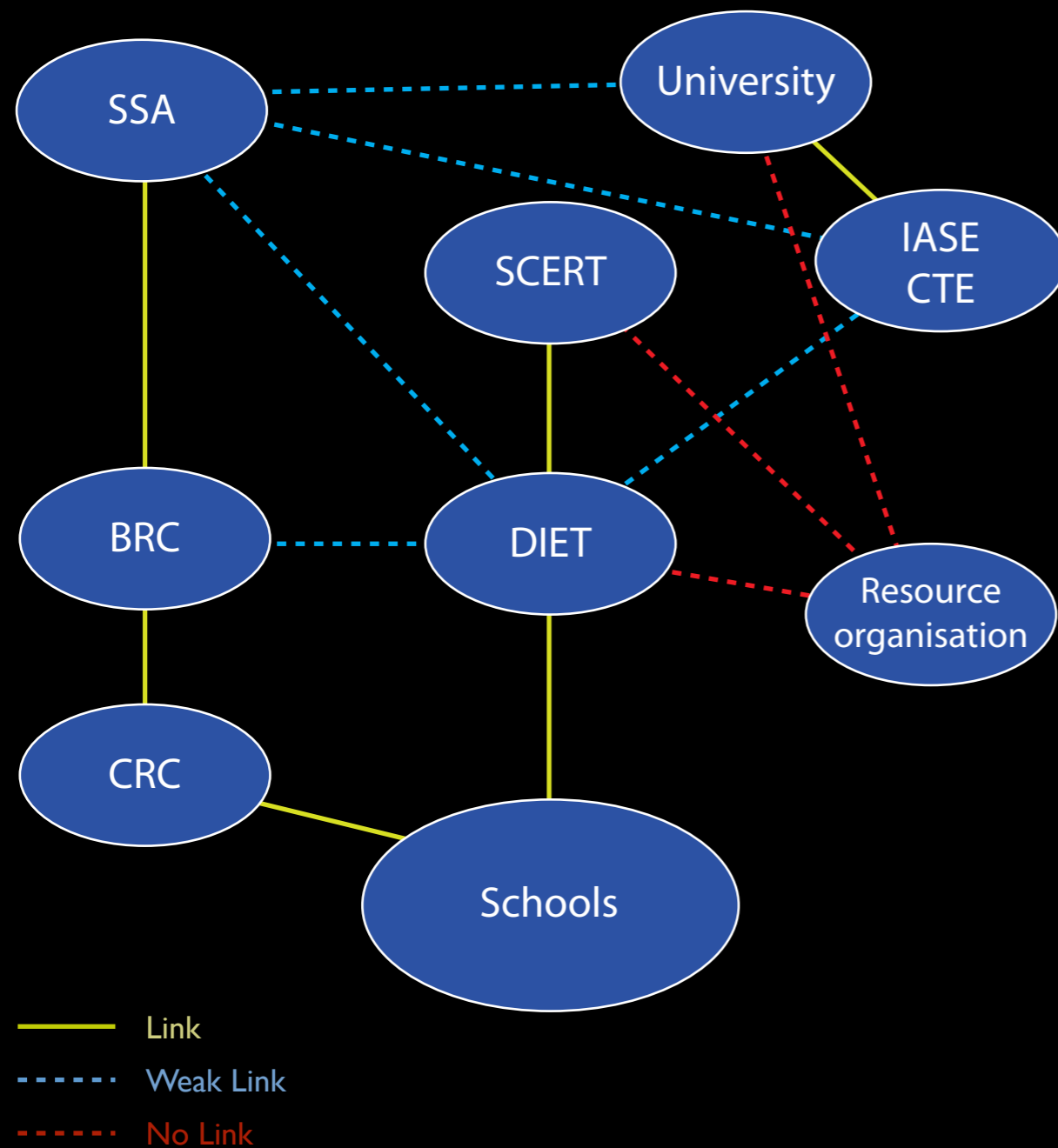


National Council for Teacher Education
New Delhi

A churning of ideas on teacher professional development in India

- International conference on Teacher Development and Management, Vidya Bhavan Society, Udaipur, February 2009
 - <http://www.vidyabhavansociety-seminar.org/announcement2009.htm>
- International Seminar on Pre-Service Elementary Teacher Education, New Delhi, February 2010
- International Conference on Issues in In-service Development of Elementary Teachers, Bhubaneswar, October 2010

In-service teacher education: Institutional structures



- Top-down transmission model
- Fund-driven not need-driven
- Dispersing “reforms”
- No continuity in time

Source:

<http://www.vidyabhavansociety-seminar.org/announcement2009.htm>
MHRD, 2009

Scale of the problem

- 5.3 million teachers at elementary and secondary level
- 772,000 teachers with no teaching certification
- 250,000 teachers are under-qualified
- 1.2 million teaching positions are vacant
- 12 states have adequate teacher education capacity
- 8 states with very high numbers of untrained teachers are: Assam, Bihar, Chhattisgarh, J&K, Jharkhand, Orissa, UP and West Bengal

Source: Report of the International Conference on Issues in In-service Development of Elementary Teachers, Bhubaneswar, October 2010

HBCSE's proposed intervention

- 50 teacher educators each from WB and Bihar DIETs
- Survey and needs assessment - February-March 2012
- 2 weeks contact programs with 50 teacher educators at a time (August-November 2012)
- Two 3-day follow-up visits in each State (January-March 2013)
- Proposal for resource enhancement - Books, laboratories, internet

Principles of the intervention

- Teacher autonomy
- Academic concerns
- Link content with pedagogy
- Address beliefs and attitudes
- Integrate professional practice with professional development



<http://teacher-ed.hbcse.tifr.res.in/documents/tpd>

Building mechanisms

- Yearly calendar
- Planning of programs
- Putting together resources
- Methods of engagement
- Teacher networks at different levels



Schedule of meetings

- Phase I: In-field meeting and Working Group meeting (Feb - Mar 2012)
 - Survey and needs assessment
- Phase II: Contact sessions, In-field meetings and Working Group meeting (Aug - Nov 2011 and Jan - March 2013)
 - 2-week contact sessions for 50 teacher educators from each state
 - 2 In-field visits per State
 - 1 Working Group meeting for year-end review
- Planning for Phase III (2013-14) would be done towards the end of 2012

Expected outcomes

- Course materials, print and video documentation
- Methods and mechanisms (systemic)
- Resource persons for the next phase
- Networks at District, State and National levels

We invite your support and collaboration.

Thank You !