Research and Development that Makes a Difference:
Opportunities and Challenges in Education

Dr. Philip Hallinger
Chair Professor of Leadership and Change
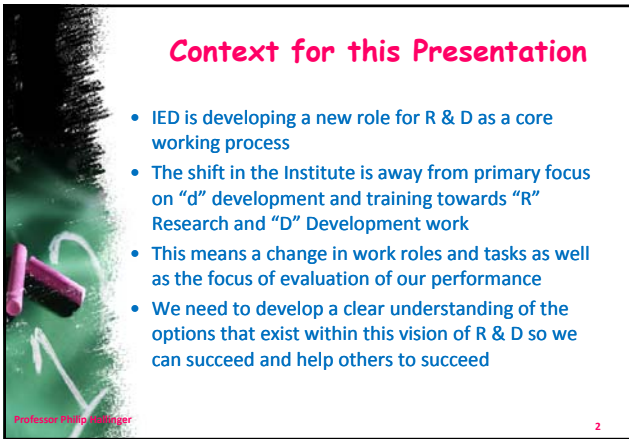philip@ied.edu.hk

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Context for this Presentation

- IED is developing a new role for R & D as a core working process
- The shift in the Institute is away from primary focus on "d" development and training towards "R" Research and "D" Development work
- This means a change in work roles and tasks as well as the focus of evaluation of our performance
- We need to develop a clear understanding of the options that exist within this vision of R & D so we can succeed and help others to succeed
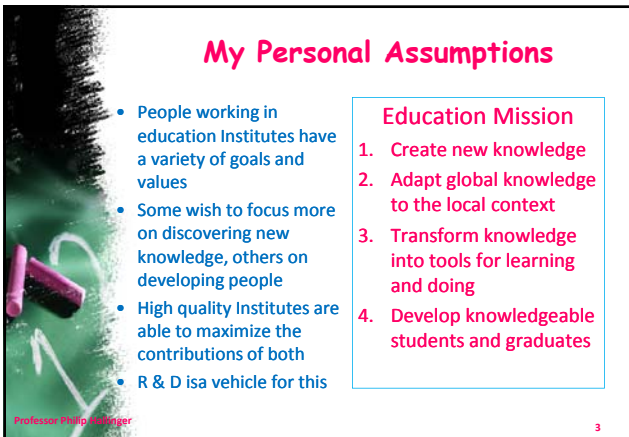
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My Personal Assumptions

- People working in education Institutes have a variety of goals and values
- Some wish to focus more on discovering new knowledge, others on developing people
- High quality Institutes are able to maximize the contributions of both
- R & D isa vehicle for this

Education Mission

1. Create new knowledge
2. Adapt global knowledge to the local context
3. Transform knowledge into tools for learning and doing
4. Develop knowledgeable students and graduates

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Purposes of the Presentation

1. To identify the contributions of Research and Development to the long-term improvement of education research, policy and professional practice

2. To illustrate this through several R & D examples

3. To clarify and emphasize the importance and value of "D" Development work in addition to basic and applied "R" Research

4. To explore challenges and opportunities in developing an institutional program of Research and Development at IED (with Professor Y.C. Cheng)

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Illustrations of Research and Development Process

1. Applying research to school improvement
2. Learning to lead change
3. Measuring Leadership
4. Developing student problem-solving

Practical Process Research & Development

Neal G. Anderson

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What is Research and Development?

- Systematic process of using theoretical, empirical and practical knowledge for the improvement of policy and professional practice
- Cycle of identifying a problem, locating relevant knowledge, conducting research (as needed), integrating findings into knowledge tools that can be used for training (e.g., curriculum, teaching techniques) or practice (management tools or software)
- R & D also involves systematic evaluation of these tools both for understanding effectiveness and formative improvement

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R & D Cycle
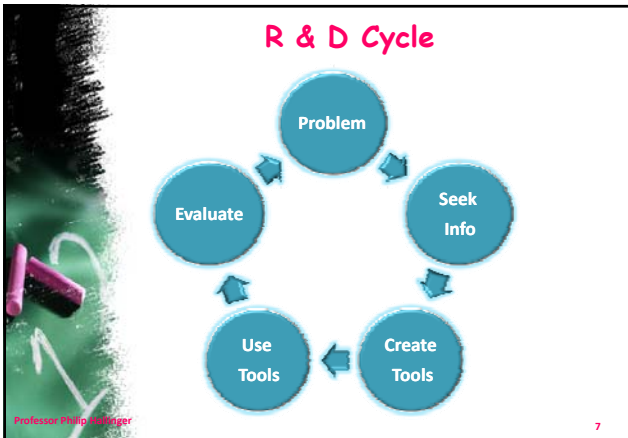
- Problem
- Seek Info
- Create Tools
- Use Tools
- Evaluate

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R & D is a Valued Approach in Fields Outside of Education

1. Identified a problem
2. Sought information through synthesis and new research
3. Developed tools that applied knowledge
4. Use in practice
5. Evaluate results
6. Improve tools and contribute back to knowledge

New Technologies in Farming

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Transforming Knowledge of School Improvement

The ITCOT Simulation

Problem:
How to Improve Learning in Schools

- Large-scale curriculum reforms in USA during 1960s and 1970s
- Disappointing results and publication of Coleman (1968) report which said schools made little contribution to learning outcomes
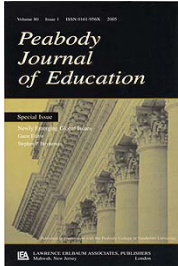- Problem recognized by policymakers

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Seek Information

- Dean of Peabody College initiated a faculty project to examine the multi-disciplinary knowledge base on factors that impact student learning
- Faculty members wrote syntheses of the research in their areas (teaching, curriculum, home, school organization etc.)
- Results were published in Peabody Journal of Education (Hawley et al, 1984)

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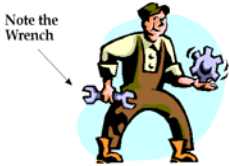
Develop Tools

- After publication Dean Hawley suggested that few educators would read the journal
- Fewer would understand how to apply the results to practice
- He initiated the **development** phase of the R & D cycle" -- Develop Tools

Note the Wrench

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Develop Tools:
Apply Research to Practice

- We developed ITCOT computer simulation based on the faculty review of literature
- Helps practitioners understand **how to apply research** on school and teacher effects to practice
- Incorporates theory of organizational change

In the Center of Things

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Use Tools

- ITCOT was disseminated by Peabody nationally
- Used widely in training with principals and school improvement teams in training in USA, Europe
- Used in Hong Kong as well as other parts of Asia

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Evaluate and Improve Tools

- We conducted evaluations of ITCOT to understand its impact on learners
- Updated the knowledge base over time (Hallinger & Heck, 1996)
- Improved the tool and contributed to knowledge (Hallinger & McCary, 1991, 1992)

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Learning to Lead Change in Schools

Making Change Happen!

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Problem:
Many Changes, but Nothing Changes

- Era of rapid change
- Schools are the "graveyards of partially implemented innovations"
- Urgent need to manage changes to benefit students and society

New Math	Whole Language
SMI	Calcu-lators

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Research:
Educational Change and Reform

- Implementation of global change in schools (**special issue on global reforms, JEA, 1998**)
- Quantitative and qualitative studies of change in schools
- Identified **both** differences and similarities in change process of schools

Journal of Educational Administration

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Development:
Problem-based Computer Simulation

- Used knowledge of change management to design PBL computer simulation: Making Change Happen!
- Simulates process of change implementation in schools (Hallinger, Crandall & Ng, 2000)
- Grounded in theories of change & empirical research (Fullan, Hall, Rogers, Kotter)

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Use in Practice

- Used with principals, teachers, parents, school councils (including Hong Kong) to understand how to lead school change and improvement
- Adapted for use from education to corporate organizations

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Research:
Cultural Impact on Change

- Edited special issues of **Peabody Jnal of Ed. and Jnal of Ed. Admin., lead article in UCEA Review 1995** culture in ed admin
- Conducted quantitative study on instructional leadership in Thailand (Hallinger & Taraseina, 1994)
- Qualitative case studies of leadership and school change (Hallinger & Kantamara, 2000, 2007)
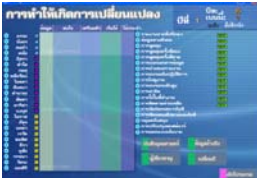
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Development:
Adapted Simulation for Asian Contexts

- Doctoral Students conducted studies of school change in Asia
  - Korea
  - Thailand
  - Malaysia
- **Adapted** and **translated** the simulations to reflect local culture
- "Greng jai"
- Small-scale evaluations Hallinger & Kantamara, 2000, 2001; Ng, 2000; Park, 2004
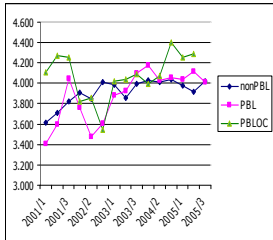
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Evaluation
Studies of the Simulation

- Research on implementation of the change simulation (Hallinger et al., 2002, 2003, 2006, 2007)
- Evaluate learning
- Contribute to knowledge of learning via PBl and by simulation

Mean Module Rating

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Measuring Leadership

Principal Instructional Management Rating Scale

Problem:
Research, Policy, Practice

- Context of research in the 1980s combined with policy concerns for educational reform in the USA (Nation at Risk, 1982)
- Research on effective schools conducted in the UK and USA identified "strong instructional leadership by principals" as important factor
- However, unclear definition and lack of measurement of the instructional leadership construct held back research on determining if and how school leaders "make a difference"
- Same issues limited efforts to assess and improve the "practice of leadership" in schools

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Seek Information

- Reviewed existing research on principal leadership (Murphy, Hallinger & Mitman, 1983)
- Develop a conceptual framework (Hallinger & Murphy, 1985; Murphy & Hallinger, 1985)
- Conduct empirical research (Hallinger, 1983)

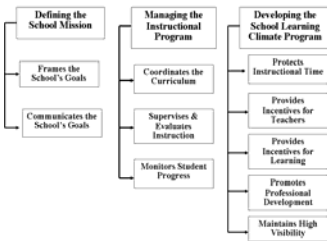**The Elementary School Journal**

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Develop Tools:
PIMRS Instructional Leadership Model

- A framework is a conceptual tool that "frames" what we look at
- Can be used for curriculum design, job definition, needs assessment

Defining the School Mission → Managing the Instructional Program → Developing the School Learning Climate Program

- Frames the School's Goals
- Communicates the School's Goals
- Coordinates the Curriculum
- Supervises & Evaluates Instruction
- Monitors Student Progress
- Protects Instructional Time
- Provides Incentives for Teachers
- Provides Incentives for Learning
- Promotes Professional Development
- Maintains High Visibility

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Develop Tools:
Principal Instructional Management Rating Scale

- PIMRS
  - 3 leadership dimensions and 10 subscales
  - 50 behaviorally anchored Likert items
- Addressed the need for better instrumentation
- Provided tools for use in research and practice

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Use in Practice

- Instructional Leadership model became the most widely used globally
- Model adopted by leadership centers for design of curricula & assessment tools
- PIMRS instrument used in more than 125 studies internationally
- PIMRS instrument used by school districts for evaluation and development

Using Assessments
To Maximize
Performance

Define the Job

Assess Talent
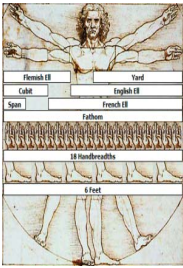
Select Talent

Develop Talent

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Evaluate and Improve

- Evaluate properties of the instrument in different settings e.g., elementary vs. secondary, different cultures
- Improve & disseminate the instrument
- Publish what has been learned: Hallinger & Murphy, 1985; Hallinger, Taraseina & Miller, 1994

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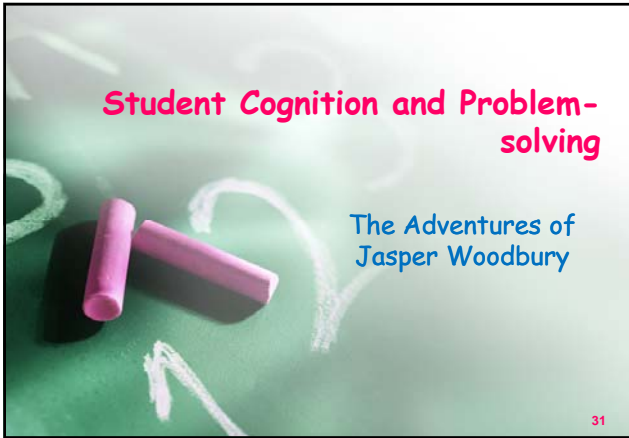
Student Cognition and Problem-solving

The Adventures of Jasper Woodbury

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Problem:
Development of Student Problem-Solving

- Poor performance among students in math and science
- Difficulties in integrating problem-solving with content teaching
- New opportunities afforded by learning technologies

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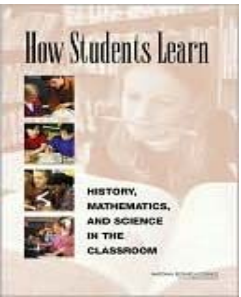

Seek Information

- Review research on approaches to active teaching
- Review research on expert-novice approaches to p-s
- Examine uses of learning technology

How Students Learn

HISTORY,
MATHEMATICS,
AND SCIENCE
IN THE
CLASSROOM

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Develop Tools:
Computer/Video-based Materials

- Faculty from different dept's used common cognitive framework for constructing materials
- Science, teacher education, special education, ed admin
- Hawley, Bransford, Sherwood, Fuchs, Hallinger

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Use Tools Locally and Internationally

- Use in schools locally with teachers
- Developed communities of practice around use of Jasper series
- Integrated into teacher training programs nationally and internationally
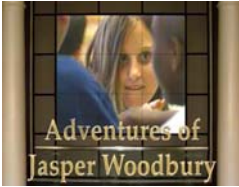- Created closer relationships to schools

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Evaluate and Contribute to Knowledge

- Conducted follow-up research on the use of Jasper series on:
  - Individual p-s
  - Group p-s
  - Classroom climate
  - Teacher effectiveness
- Adapted the design based on evaluation results
- Also led to new understandings of cognition in teaching

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Wrap-up

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Model for R & D in Graduate Research

- Useful framework for both Master, Ed.D. and Ph.D. but with different requirements
- Suitable for the application and evaluation of new knowledge generation, transformation and evaluation

以问题为本的学习
在领导发展中的运用
IMPLEMENTING
PROBLEM BASED LEARNING
IN LEADERSHIP DEVELOPMENT

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Value of the R & D Model to the Development of HK IED

- Provides a "home" for knowledge generation & knowledge application
- Values abstract and practical contributions
- Emphasizes the need for collaboration
- Offers opportunities to link with top-level institutions
- Creates value for society

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Dr. Philip Hallinger, September 2008

Q & A

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Thanks for your kind attention.

Professor Philip Hallinger
philip@ied.edu.hk

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