

RICH LEARNING FOR
EVERYONE,
IN CHINA
AND IN THE WORLD

Adaptive Tutorial
Learning

China November 2005

Quotes from background material
for Second International
Conference on Compulsory
Education

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Most areas that have not achieved universalization concentrated at poor, minorities and remote areas that are sparsely populated and with poor transport facilities, which resulted in a high cost for educational provision for a small proportion of the population. The difficulties in universalizing compulsory education in those areas include scarce funding, inadequate facilities, and teachers with undesirable quality.

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When it comes to urban areas, compulsory education has not been fully accessible to disadvantaged groups, such as migrant children, who are at high risk of dropout and cannot receive compulsory education of the same quality as local children. Children with disabilities and children from poor families often fail to receive free compulsory education.

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These problems are not
unique to China!

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Learning today

- Major problems everywhere, including illiteracy
- Many do not learn everywhere
- The rich have better learning than the poor

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How can we improve learning?

- Major improvements needed
- Each student is unique, in many ways
- Learning must react to uniqueness
- Schools may not be enough

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Improving learning

is critical for all.

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With the development of economic and educational structural reform, especially through the goal of achieving a "XiaoKang" society (where the society members are all moderately well-off) during the first two decades of the century raised at the 16th National Congress of the Chinese Communist Party; the importance of a national compulsory education program (hereinafter referred to as NCEP) was reaffirmed. Giving priority to universalizing national education, it put forward an even higher demand for promoting compulsory education in China.

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EVERYWHERE better learning is necessary

to overcome our major problems.

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Schools may not be enough

- We must investigate other possibilities

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Adaptive tutorial learning with computers

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The Vision...



“In the early twenty-first century people will be able to study what they want, when they want, where they want, and in the language they prefer, electronically.”

Peter Knight, Education for all Through Electronic Distance Education, *International conference on Distance Education*, Moscow, July 1994.

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Our New Approach...

- Focuses on **student learning** issues
- Works for very **large student numbers** from widely **different backgrounds**
- Is **highly adaptive** to the **needs of each student**, **interactive**, and **tutorial**

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Our New Approach...

- Works **in schools** and also where **no schools or universities exist**
- Is **affordable** and **available** for **everyone**
- Is **sustainable**
- Works for the **rich** and the **poor**

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Dakar meeting goals for 2015.

- For young children:
 - Every child should have a primary education
- Gender:
 - Girls should receive education equivalent to boys

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The key:

Adaptive learning

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Adaptive Learning

- Adaptive learning for all.
- Each student learns at a **unique pace**, and continues in an area **until successful** .
- Highly interactive **computer-based learning modules**.

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Adaptive Learning

- Tutorial modules, like Socrates
- time between student inputs **typically less than 20 seconds**.
- Answers are **free form**, **not Multiple choice**.

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Adaptive learning

- **Questions and replies** determine student learning problems. Help is given. The program verifies that the help was successful.
- The **program decides** based on **student input and past performance** what learning **material is to be presented next**.

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Adaptive Learning

- **Peer learning** with small groups of students at the displays **encourages critical thinking**, increases student interests and retention.
- **If teachers and other adults** are available, they **can play an important role in learning**.
- **Current technology** is **sufficient**. No tactics from artificial intelligence are needed.
- Learning is **enjoyable**.

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Adaptive learning

- The system for producing such modules has been **under development for many years**.
- Designers are excellent teachers in the area

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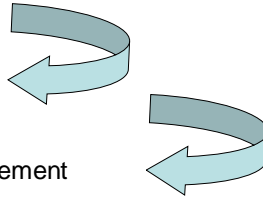
Adaptive learning

- Units moved to many languages and cultures
- Used globally

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Irvine Geneva System

- Design
- Implementation
- Evaluation and Improvement



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Design

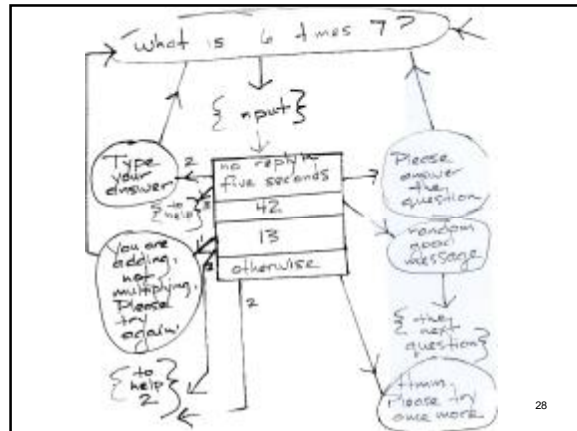
- Overall design
 - Brainstorming
 - Description of each unit

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Design

- Detail design
 - Design groups of about four
 - No leader
 - Usually one week
 - Excellent teachers and researchers
 - Scripts – on paper and in computer

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After design

- Implementation
- Evaluation And Improvement

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Evaluation

- Evaluated with thousands of all types of students, with wide economic backgrounds, gender, and cultural backgrounds.
- Evaluated both in schools and in locations with no or weak schools.
- Improved after evaluation.

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Benefits - new approach

- Costs lower than now
- Many students learn faster
- Students enjoy learning
- Everyone learns well
- Lifelong learning
- Global market

- Full details in new book

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China could lead
the world

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Theodore Hesburgh

- the dream is impossible if education is visualized as it has always has existed in recent centuries: a schoolroom with a teacher and students. . . .we need a completely new plan and vision for worldwide access to education at all levels, if the next century is to see a quantum leap in educational opportunities everywhere.

- Theodore Hesburgh, Templeton, John Marks, editor, *Looking Forward: The Next Forty Years*, 1st ed. Harper Business, NY, 1993.

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Further Information...

Bork, Alfred & Gunnarsdottir, Sigrun (2001). ***Tutorial Distance Learning – Rebuilding our Educational System***, Kluwer Academic Publishers, New York.

- Available in Chinese

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Draft of new book
and other information

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