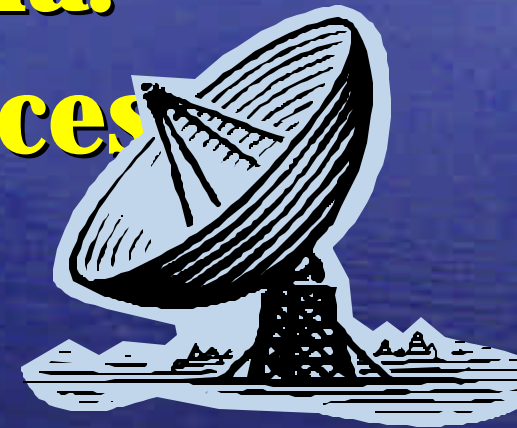# Information and Communication Technology in Education in China: Policies and Practices

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2005-10-31

# Ⅰ. The Progress of ICT Development in Education

# Ⅰ. The Progress of ICT Development in Education

**A.** ICT in education in China was developed on the basis of its achievements in the area of instructional technology

**B.** With this foundation, ICT in Education is developing quickly

A. ICT in education was developed on the basis of its achievements in the area of instructional technology

1   Concept of instructional technology

2   Developmental Stages of instructional technology

3   Achievement in the different stages of instructional technology

A. ICT in education was developed on the basis of its achievements in the area of instructional technology

1. Concept of IT Education

   **To achieve the highest standard of education through the integration of modern and traditional educational media**

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A. ICT in education was developed on the basis of its achievements in the area of instructional technology

2. Developmental Stages of instructional technology -- 3 stages

Emergence Stage:  1920's to 1940's

Early Development Stage:  1950's to pre-Cultural Revolution

Fast Development Stage:  Reform/Opening to end of 1980s

# A. ICT in education was developed on the basis of its achievements in the area of instructional technology

3. Achievement in the different stages of instructional technology

（ⅰ）　**Infrastructure, hardware**

（ⅱ）　**Teaching resources**

（ⅲ）　**Contemporary distance education**

# B With this foundation, ICT in Education is developing quickly

**1.** **Launching related policies**

**2.** **Initial achievements**

# B  With this foundation, ICT in Education is developing quickly

## 1. Launching related policies

o    The proclamation of the full implementation of intensified educational reforms by the State Council on 13th June 1999

o    The dispersal of ICT Education in primary and secondary schools by the Ministry   of Education  on 14th November 2000

o    The proclamation of Reform and Development in Elementary Education by the State Council on 29th May 2001

# B. With this foundation, ICT in Education is developing quickly
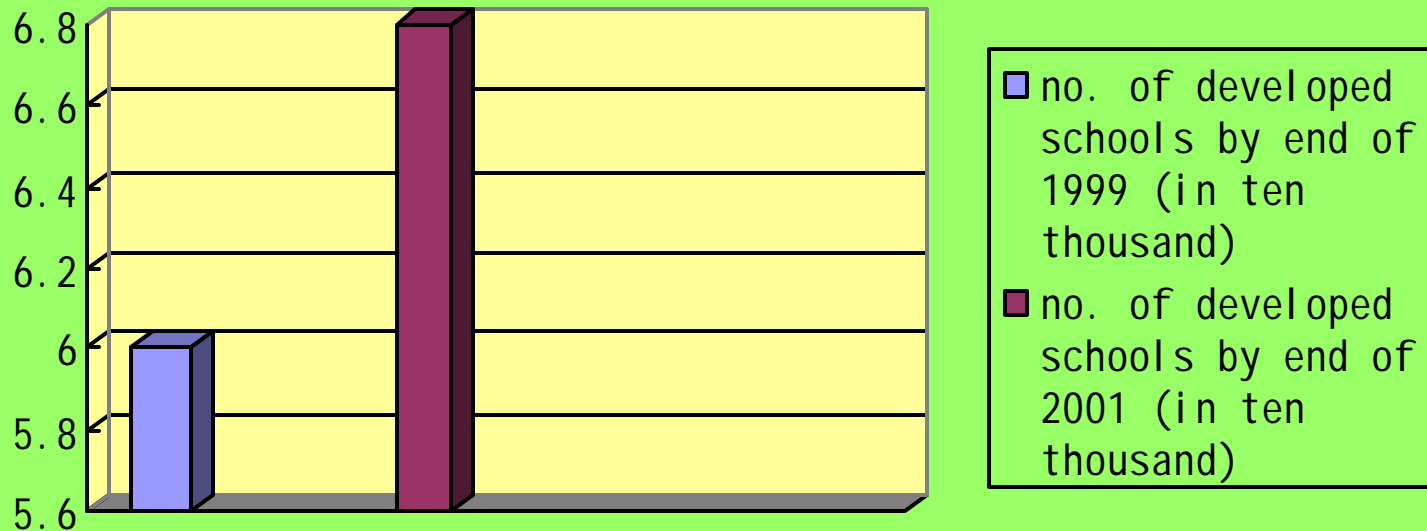
## 1. Launching related policies

Starting from 2000, the Ministry of Education convenes a country-wide ICT-in-Education Conference for primary and secondary schools annually

# B. With this foundation, ICT in Education is developing quickly
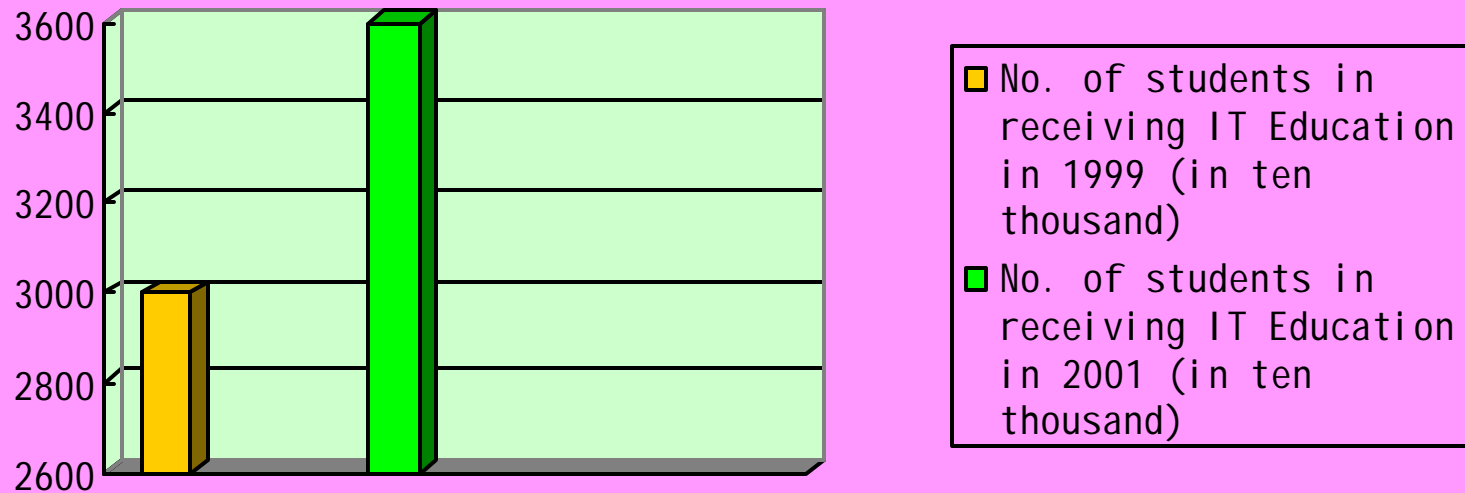
## 2. Initial achievements
### i. The continuous increase of schools in developing ICT in education



Legend:
- no. of developed schools by end of 1999 (in ten thousand)
- no. of developed schools by end of 2001 (in ten thousand)

# B With this foundation, ICT in Education is developing quickly

## 2. Initial achievements

### ii. The increase of students who receive ICT Education



Legend:
- No. of students in receiving IT Education in 1999 (in ten thousand)
- No. of students in receiving IT Education in 2001 (in ten thousand)

# B With this foundation, ICT in Education is developing quickly

## 2. Initial achievements

### iii.  Rapid increase in the no. of computers in schools and school-net connections

| Time | No. of computers (in ten thousand) | No. of schools in school-net |
|---|---|---|
| End of 1999 | 165 | 3,000 |
| End of 2000 | 584 | 26,000 |
| End of 2003 | 663 | 35,000 |

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**B.** With this foundation, ICT in Education is developing quickly

**2.** Initial achievements

iv.  Content and emphasis of ICT in education has changed and the student-computer ratio has improved

**B.** With this foundation, ICT in Education is developing quickly

**2.** Initial achievements

v. The exponential growth of computers connected to Internet and Internet usage

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# B. With this foundation, ICT in Education is developing quickly

## 2. Initial achievements

vi. Establishment a platform for distance education

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

A. Curriculum Development

B. Resources Development

C. Contemporary distance education

D. Application of information technology

E. Teacher professional development

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

A. Curriculum Development

1. Courses in ICT

2. Integration of ICT and the Curriculum

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

## A. Curriculum Development

1. **Courses in ICT**
   - ICT course for Primary and Secondary school students(2000)
   - Comprehensive practices(2001)
   - ICT course for high school students (2003)

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

A. **Curriculum Development**

ICT course aims to:

- develop students' interest and awareness on ICT
- help students understand and master basic knowledge and skills
- realize the development of ICT and its great impacts on daily living and S & T.

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

**A. Curriculum Development**

The **goals of** ICT course for Primary and Secondary school students (2000)

- 'To gain abilities in information searching, information transfer, information handling and information application
- To gain understanding and knowledge regarding ICT related issues such as culture, ethics and social matters
- To be responsible and ethical in using IT
- To utilize ICT skills in life-long learning and collaborated leaning, and build up the necessary foundation for future study, employment and living in the IT society' (curriculum guide)

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# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

A. Curriculum Development

Comprehensive Practices
(New Curriculum Reform in 2001):

- ICT education
- Research related study
- Social service and implementation
- Implementation and technology training

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

## A. Curriculum Development

Comprehensive Practices (16-20% of study hours in 9-year curriculum)

To enhance students' social responsibility and build up their capacity for innovation and application through their first-hand experience in collecting and handling information, solving problems by utilizing knowledge and communication as well as team work power

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

A. Curriculum Development

ICT course for high school students

The Principle:

- To enhance students' morals in using IT and become ethical citizens in the IT era

- To cultivate a positive IT environment which will be a platform for life-long learning

- To care for students as a whole and to develop distinguished ICT curriculum

- To cultivate students' abilities in problem-solving, and promote utilization of IT skills in innovations

**II.** **The Current Situation of ICT Implementation in Primary & Secondary Schools**

A. **Curriculum Development**

Successful Implementation of ICT in lessons

VCD show

**II. The Current Situation of ICT Implementation in Primary & Secondary Schools**

**A. Curriculum Development**

1. **Courses in Information Technology (Current Situation is not optimistic)**

   - **Syllabus arrangement cannot fully match curriculum demands**

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

## A. Curriculum Development

### 1. Courses in Information Technology (Current Situation is not optimistic)

- Similar to computer course

**II.  The Current Situation of ICT Implementation in Primary & Secondary Schools**

**A.  Curriculum Development**

**1.  Courses in Information Technology (Current Situation is not optimistic)**

- **Uninteresting and Impractical content without much help to students**

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

A. **Curriculum Development**

2. Integration of ICT and the Curriculum (not thorough enough)

- Very limited time for students to use computers in other academic subjects
- Little usage of Internet in interactive learning
- Low ICT utilization in the stages of concept formulation and knowledge enhancement
- Low proportion of ICT utilization to cultivate teacher-student interaction
- Uneven distribution of computers in urban and sub-urban schools

# II.	The Current Situation of ICT Implementation in Primary & Secondary Schools

**B.** Resources Development

1.  Government investment in items of resources development

2.  Participation of enterprises and schools in resources development

3.  Web sites for education topics

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

**C. Contemporary distance education**

1. Training for 'Tomorrow's Females Teachers'
2. 'Aid-the-poor' showcase in long-term development of modern primary & secondary education in the West
3. China-UNDP/403 Long-term Education Plan
4. Internet messaging trial centres in village secondary schools
5. Showcase of modernized long-term education development

## II. The Current Situation of ICT Implementation in Primary & Secondary Schools

### D. Application of information technology

The Ministry of Education issued the "Standard for Technology Use in Education Management" in 2002. This timely proclamation of a practical and comprehensive standard signified the healthy development trend of standardization in the country's education management.

# II. The Current Situation of ICT Implementation in Primary & Secondary Schools

## E. Teacher Professional Development

– Training of management staff
– Training of teachers in academic subjects
– Training of teachers in ICT
– Training of ICT and web management technicians

# III. Problems & Solutions

# III. Problems & Solutions

**1. The enormous gap between pedagogical objectives and implementation**
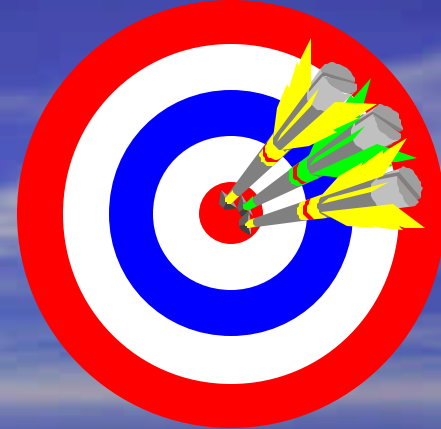
Our pedagogical objectives are advanced and up to international standards

But there is a gap with actual implementation

What we need is changes in ideology, appropriate training, progressive attitude, dedication, innovations and technical know-how

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# III.    Problems & Solutions

## 2.    Lack of educational resources

Lack of educational resources to meet the demands of newly reformed curriculum and academic subjects, and to solve the problems in the need of quality education

An urgent need to accelerate creation of educational resources including research and development in education software, construction of web sites, platforms, databases and broad band

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# III.   Problems & Solutions

**3.** **Standard of teachers not high enough**

An urgent need to heighten teaching staff's standard so as to normalize ICT development in education through their effort

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# III.  Problems & Solutions

## 4.  Unbalanced distribution of investment resources

A general problem in "emphasizing hardware, neglecting software ; emphasizing construction, neglecting application"

The international ratio of hardware : software : service is at least 4 : 3 : 3

e.g.:   the ratio is 15 : 1 in one southern cities with the investment amount of ¥150 Million of which total expenses in software, application and training amount to less than ¥10 Million

It is **essential** to arrive at a reasonable investment framework
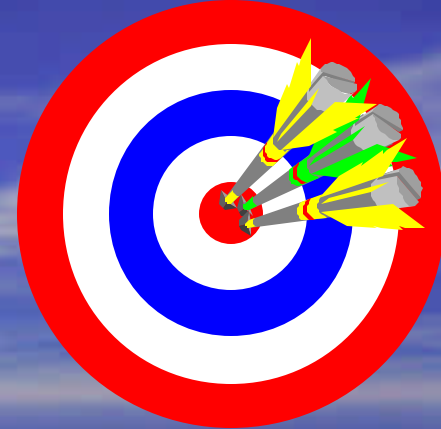
**5.** **Single pathway of ICT education**

Cannot rely on the single pathway of schools, but from multiple approaches to build up ICT in education through families, communities, libraries, museums, science & technology centres, ICT training centres and research institutes

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*Let's work hard together in further developing and improving ICT in education*

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