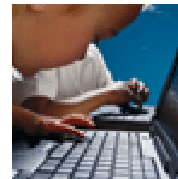




#6. ICTs for education and building human capital



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Visions of the Information Society: The role of ICT in education and building human capital

International Telecommunication Union

Frances Cairncross, The Economist

Kaija Pöysti, Blue White Venture

Geneva, 25 February 2003

**Visions of the
Information Society**

**The
Economist**



Why the interest in ICT in education

- Education is a key driver of growth, competitiveness and human welfare
- But it is expensive to provide...
- ...and often inaccessible.

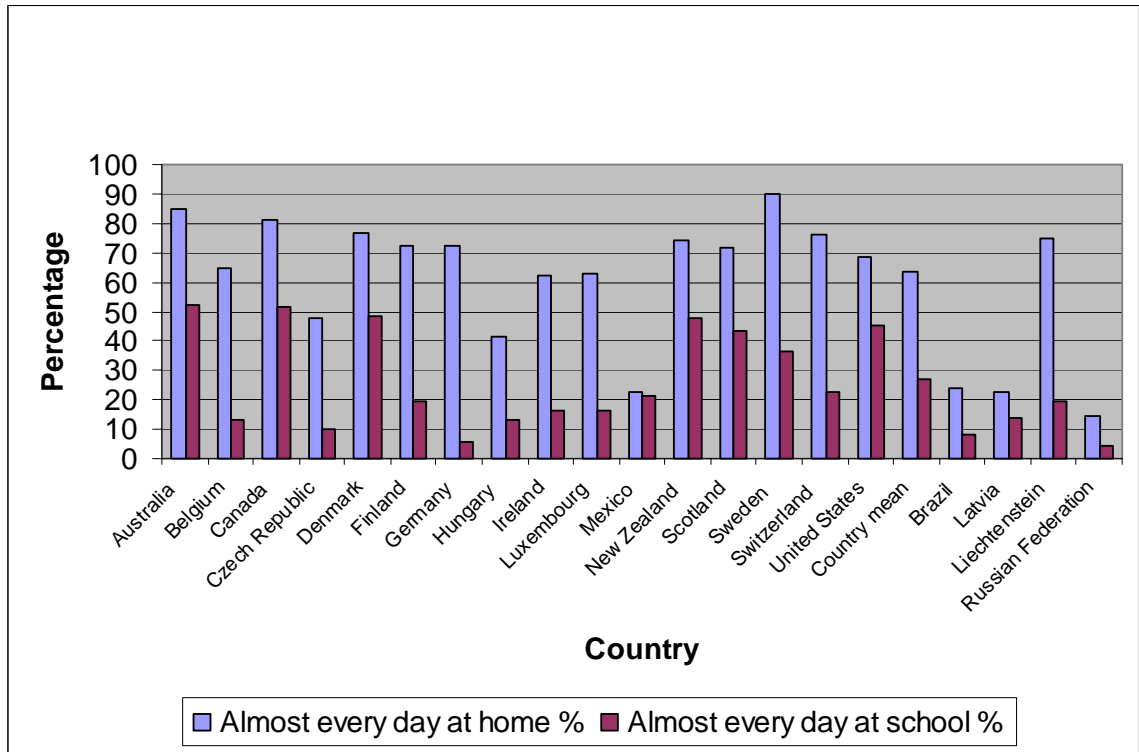


Countries' readiness for ICT in education varies greatly

- Access to computers
- Broadband (or any) networks
- Connection costs
- Use of English



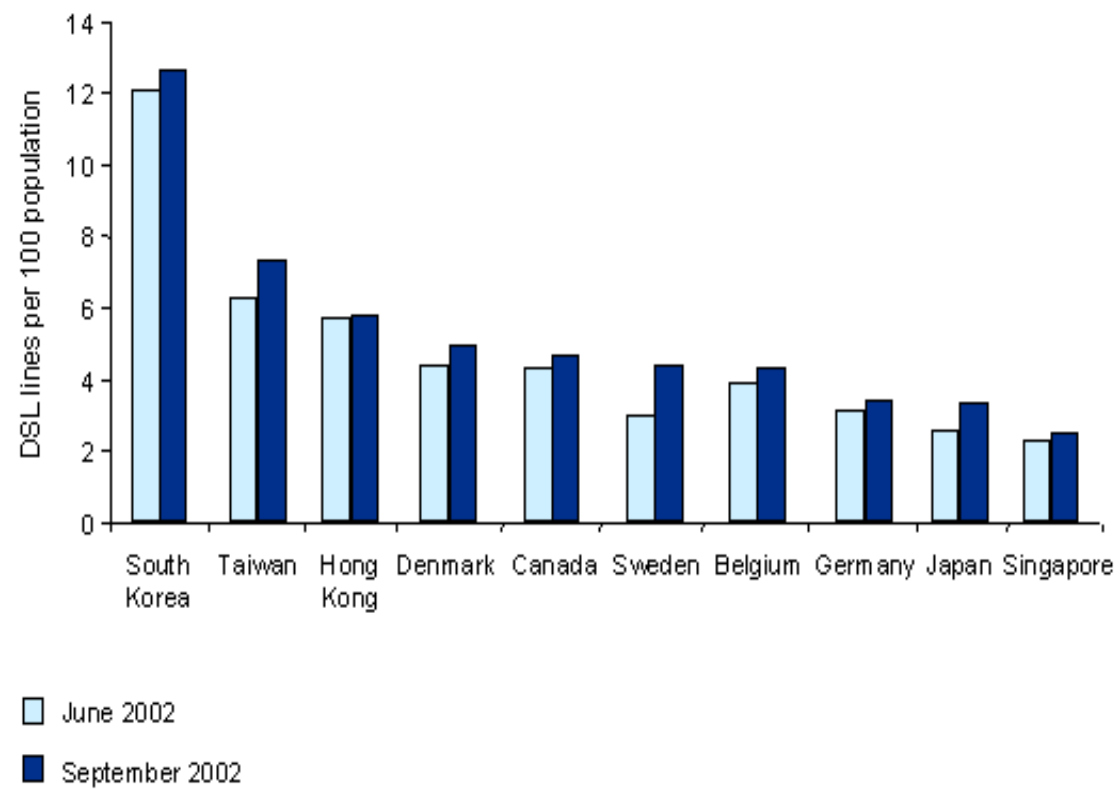
Access to computers for 15-year-olds



- Better access at home than at school
- But much better access in rich countries than in poor



DSL networks

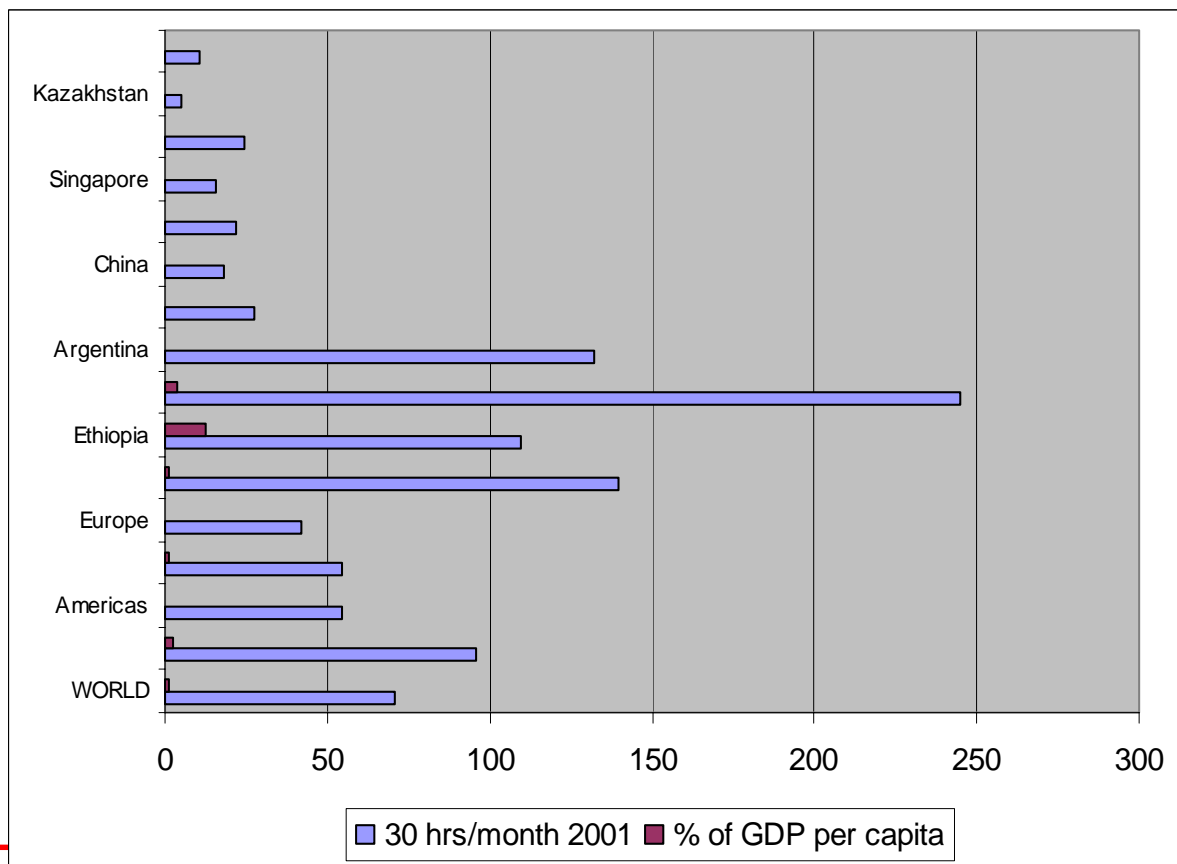


- Differences are striking among rich countries...
- ...and among poor ones

Source: point-topic.com



Cost of connection



- Cost for 30 hrs of Internet access per month (in US\$) varies a great deal



Educational uses of ICT:

- In administration
- In schools
- In universities and higher education
- In training

...Clear that some are much more successful than others....

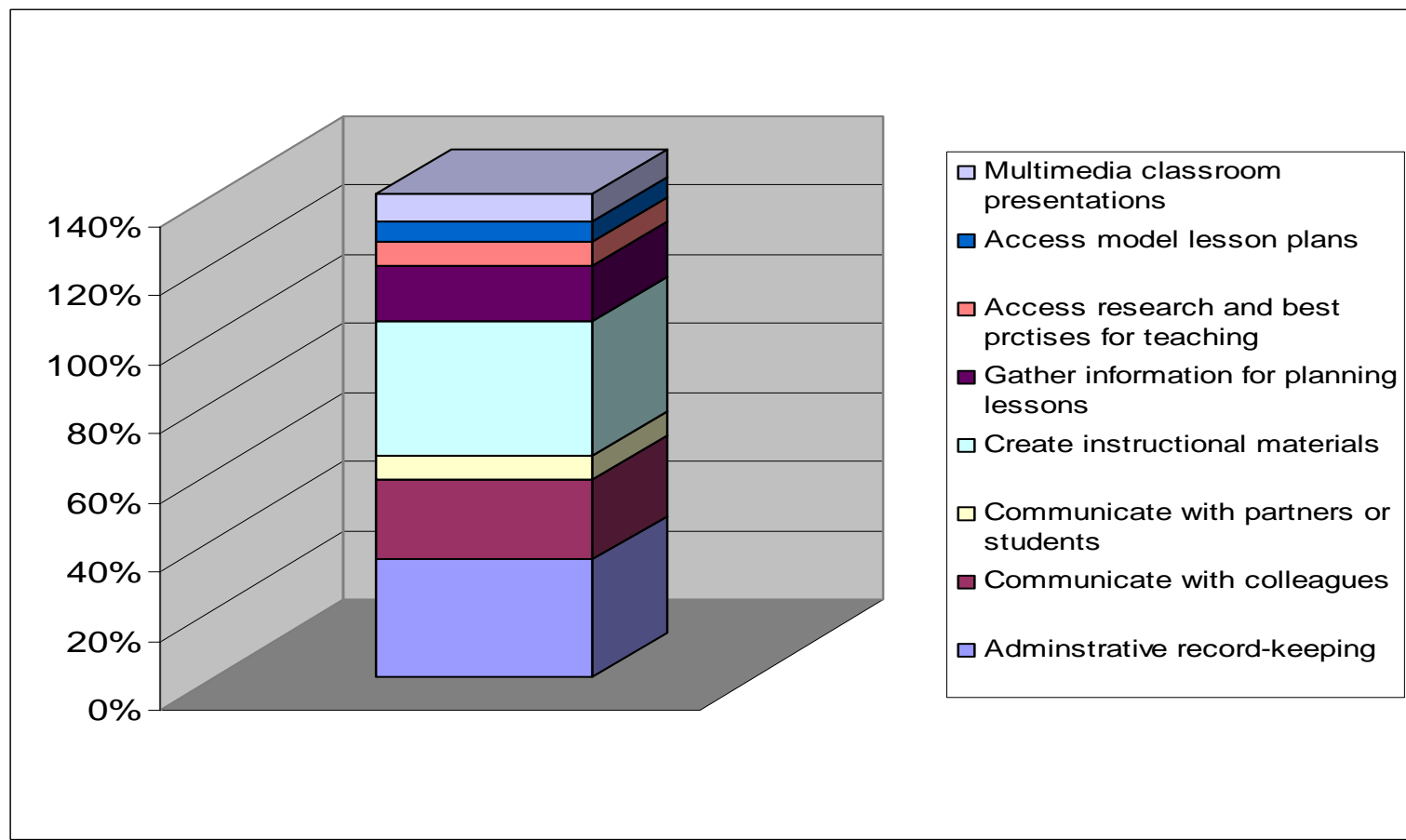


Uses of ICT in schools:

- To save costs?
- To improve administration?
- To teach computer literacy?
- Or to revolutionise teaching?



How US teachers use computers in class





In other words, ICT used mainly for communication and lesson preparation, rather than as a teaching tool.



Do children learn better?

- Measuring educational interventions is always tough. But -
- - more insistence on cost-benefit analysis.



The Angrist/Lavy study is bad news:

- A rare study with a control group
- Schools had been using computers for a year
- No consequent shortage of cash for other education

“The costs are clear-cut and the benefits are murky.” Dr Joshua Angrist



And there are unexpected costs:

- Essential to train both teachers and support staff
- Hardware isn't all you need
- And systems need replacing



Costs that get forgotten:

- Professional Development
 - Include also hiring substitute teachers for the ones being trained plus the trainers
- Support
 - One full-time technician supports 100 to 250 users
- Connectivity
 - Connection costs represent 7-15% of ongoing costs
- Software
 - In companies, equals to 20-25% of hardware cost
- Replacement Costs
 - Replacements needed every 3-5 years
- Retrofitting
 - Wiring old schools – wireless can be an option, but not always

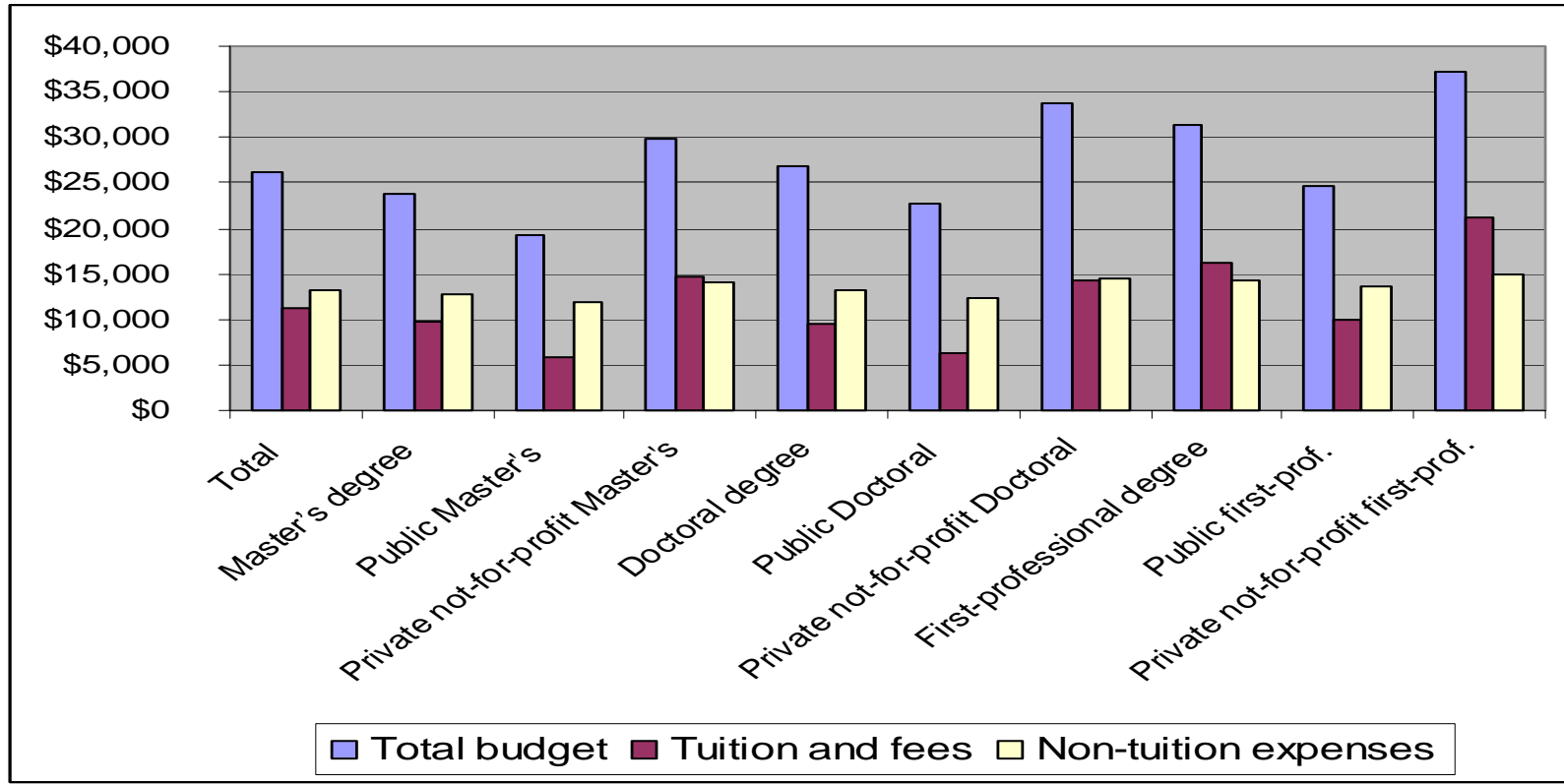


Why higher education is different:

- Students increasingly pay part of cost
- Not essential to be physically present
- Not essential to attend full time



Cost of Education in the US





Three versions of ICT in higher education:

- As schools do: for administration, and to assist conventional education.
- To give flexibility and reach to campus-based learning (hybrid model)
- For pure distance learning, delivered to satellite campus or individual student.



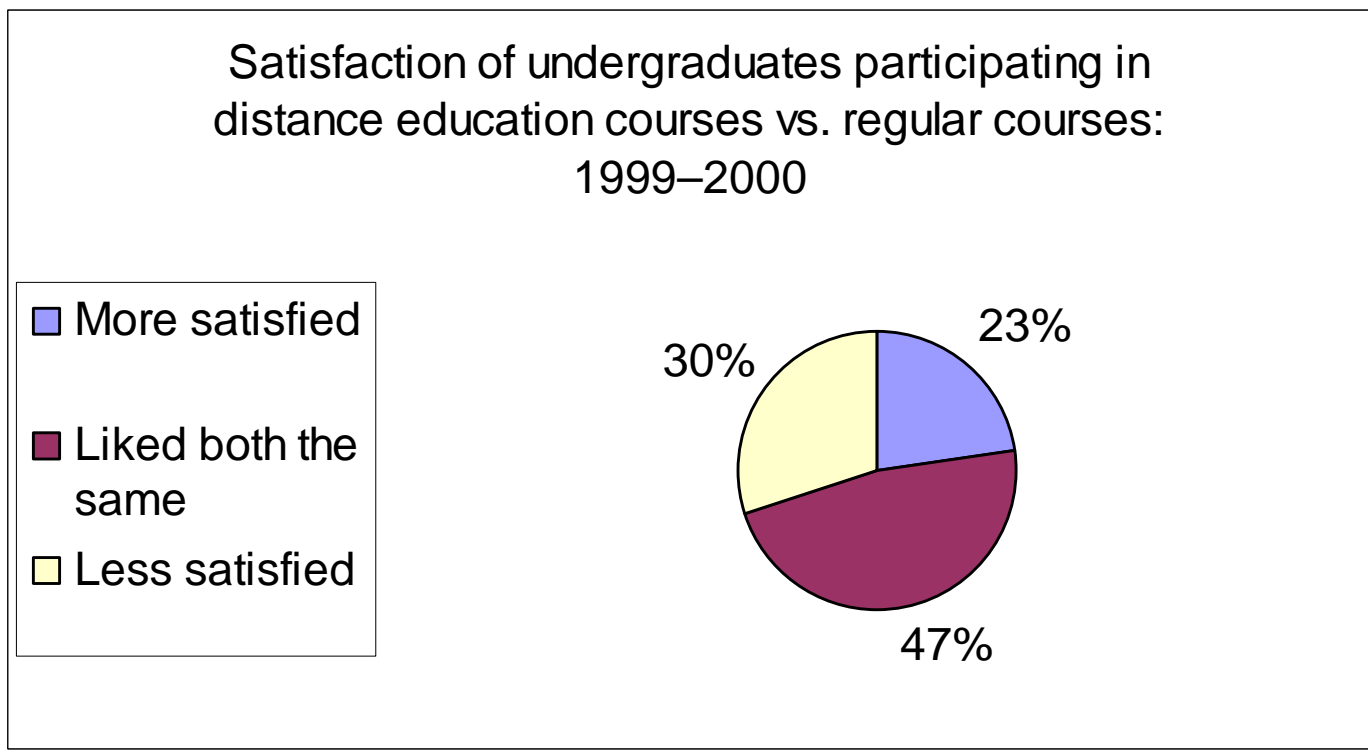
Who benefits?

- Older students with family commitments and jobs.
- Students in developing countries who have no other option.
- Students who want to take courses in other countries.



Satisfaction with online university courses

Of all undergraduates in the US, 8.4% took any online courses in 1999-2000





The challenges include:

- High start-up costs
- Courses must be completely redesigned
- Big training requirements
- Students need expensive kit
- Revenues may disappoint
- Several online universities have closed



ICT in training:

- Toughest cost-benefit tests of all
- Demand to minimise time away from work
- Business travel cut by 9/11 & recession
- Employees may be geographically scattered
- Likely to be highly motivated
- Good access to ICT
- Courses easily updated



So - a winner?



Um.

- ICT in some form accounts for 10.5% of all training time.
- The share of corporate training budgets spent on learning technologies rose from 3.7% in 2000 to only 4.6% in 2001.



Moreover...

- Teaching computer skills accounted for 55% of all ICT-delivered training in corporate America in 2000.
- However, 72% of all training in computer skills is delivered not by ICT but in a classroom, by a live instructor.
- And only 6% of all formal corporate training is delivered by an instructor to a remote location.



Clearly, American companies have not yet found ICT the best way to upgrade human capital.



So no future for ICT in training?

- Probably, will be most useful for just-in-time learning -
- - and for reinforcing what has already been learnt.

Main moral: beware of hype, and proceed with caution



Lessons Learned

- Countries' readiness for ICT in education varies greatly. Poor countries may have the greatest potential to gain, but the worst infrastructure.
- Many education policymakers seriously underestimate the total costs of operating ICT-based learning.
- The pressure to show benefits is growing.



More lessons

- ICT's greatest benefit in education may still be as a management tool.
- Teaching computer skills in developing countries is important for competitiveness.
- Well-designed ICT can give access to students who are poor, disabled or scattered.
- It is most likely to be cost-effective with very large numbers of students (as in developing countries).



Lessons for developing countries:

- Online education provides access in rural areas and to teachers from other countries
- Internet provides free teaching material
- Requires inexpensive connections
 - Wireless, WiFi, satellite etc. can provide new solutions
 - Look for simple and working solutions
- BUT: tariff policies and monopolies can hinder development



Finally...

**Without skilled instructors, no
electronic delivery can achieve
good results.**



**But neither can traditional
teaching, come to that**



Resources website: www.itu.int/visions

Visions of the Information Society - Microsoft Internet Explorer

Address: <http://www.itu.int/osp/spu/visions/>

Visions of the Information Society

The dramatic development of information and communication technologies (ICTs) has revolutionized the way people work, interact and conduct their daily lives. It has transformed the global economy and heralded a new and dynamic "information society". In this context, the *Visions of the Information Society* project aims to present the perspectives of the developing and industrialized worlds, and zooms in on four key themes of the information society - see highlights below. For more information on this project, please contact Lara Srivastava at the [Strategy and Policy Unit](mailto:lara.srivastava@itu.int) of ITU (lara.srivastava@itu.int).

These themes will be discussed in a series of Conferences to be held in Geneva in February 2003 - click [here](#) for more details about the *Visions* event or download our [Visions Brochure](#) in [English](#), [French](#) or [Spanish](#).

	The information society: A developing world perspective		The information society: A developed world perspective
<ul style="list-style-type: none">■ MAIN PAGE■ On-line resources■ ITU Background paper■ More...		<ul style="list-style-type: none">■ MAIN PAGE■ On-line resources■ ITU Background paper■ More...	
	Network security: Protecting our critical infrastructures		Fostering globally accessible and affordable ICTs
<ul style="list-style-type: none">■ MAIN PAGE■ On-line resources■ ITU Background paper■ More...		<ul style="list-style-type: none">■ MAIN PAGE■ On-line resources■ ITU Background paper■ More...	

Full-length publications will be available in June 2003 (Web/CD-Rom)