

# Implementing the Digital Education Revolution

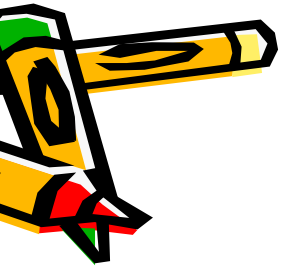
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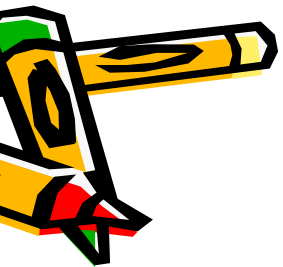


# What is the DER really about?

How to make ICT central to the processes of teaching and learning in Australian schools

Dealing with all of the issues which prevent this from happening

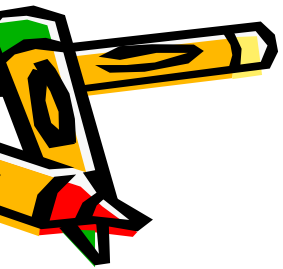
- Lack of ubiquitous computing environment which just works
- Lack of ability to connect teachers and students with each other and with all of the people and resources they need all the time everywhere at an affordable price
- Lack of content matched with easy to use tools which make it easier to use technology in the classroom than work without technology
- Complex and unworkable copyright and intellectual property protection regimes
- Lack of staff who are skilled and confident users of technology



# How is technology used in schools



ICT is not central to the process of education in schools  
It supports administration and private study for individual students  
but it is often peripheral to classroom instruction  
In most other facets of our lives, ICT is becoming central  
It has transformed how business processes operate and has had a major  
impact on social interactions  
The impact in education has been far less wide and deep  
Technology is pervasive in students' private lives and in employment, not  
schools





# The Digital Education Revolution

Announced as a \$A1 billion four year election commitment in 2007

Now a five year \$A2.2 billion program

The core rationale for the policy was described as follows:

*Information and communications technology is no longer just another subject taught by schools, it is a means of learning across all subjects - from English to mathematics and science, to the humanities, technical and applied studies, music and visual arts. It is also a driver of productivity and growth across all sectors of the economy, from farming and mining to manufacturing and services"*



# Digital Education Revolution - Funding



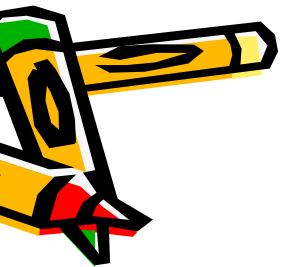
Investment of \$2.2 billion over five years (2008-2012) to improve student access to world class ICT.

Key funding elements:

National Secondary School Computer Fund - \$2.1 billion over 5 years for provision and effective utilisation of computers for all Year 9 to 12 students;

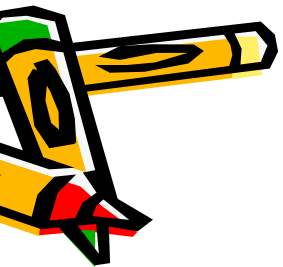
- \$10 million over three years to develop support mechanisms for schools;
- \$32.6 million over 2 years for online curriculum tools, resources and supporting technical frameworks;
- \$40 million for projects to support professional learning on the use of ICT in schools.

\$100 million for fibre connections for schools, as part of the roll out of the National Broadband Network



# National Secondary School Computer Fund - Implementation

- Commonwealth is providing funding, not provisioning computers
- It has conducted three rounds of funding intended to bring the ratio of computers to students to 1:2
- ICT requirements for students with disability are being handled flexibly
- Funding to move schools to a 1 to 1 ratio is based on numbers of students in years 9 to 12 and distributed under a National Partnership
- \$807 million has been provided upfront to meet 'on-costs'



# What are we trying to achieve

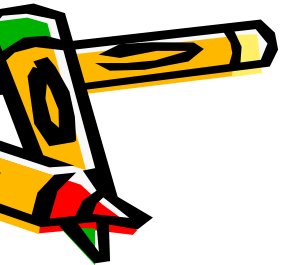
- The deployment of the NSSCF in NSW Government schools provides an excellent example of what we are trying to do
- NSW is moving from a highly variable provision
- It is the process of ensuring all schools have an ICT infrastructure which works
- And teachers and school administrators can move from trying to be bad managers of ICT infrastructure to innovators in the use of ICT



# Key telecommunications issues

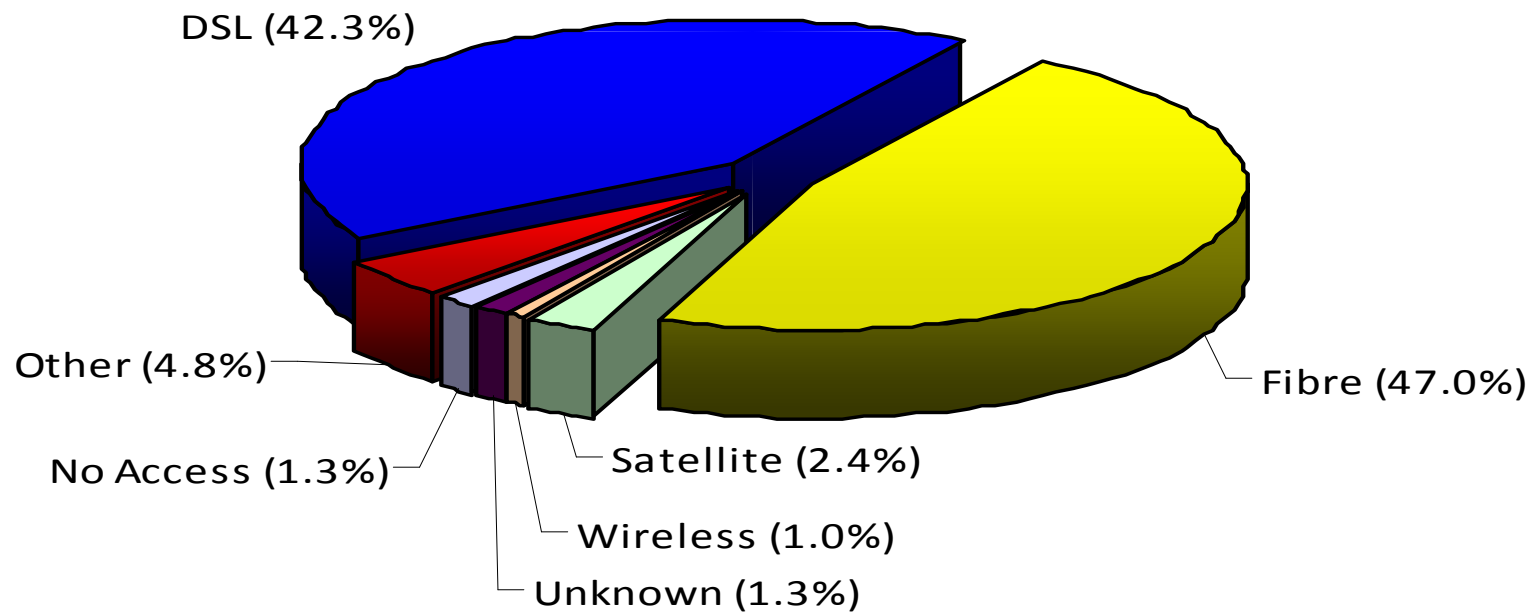


- The majority of Australian schools do not have connections which will allow them to do things like run class room to class room video conferences or live demonstrations of how a telescope works
- Even where schools do have fibre, they pay for their connections in a way which makes it impossible to afford to use the connections to the full
- The Digital Education Revolution commitment is to provide all schools with a symmetrical, scaleable network connection priced so that they can use it to the full

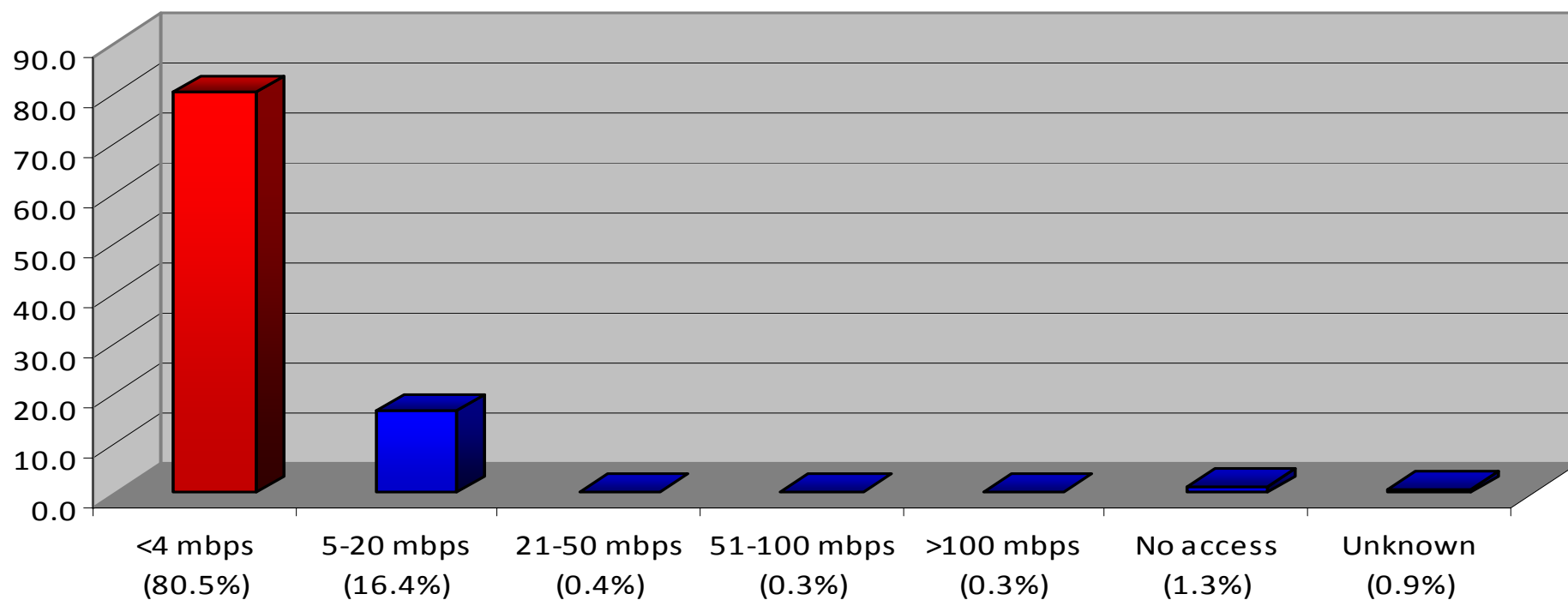




# Broadband technology used by Australian schools



# Bandwidth used by Australian schools



# Fibre Connections to Schools Initiative (FCS)

- The Government has committed \$100 million to the FCS initiative
- It is being implemented in a coordinated way with the National Broadband Network
- The Government is also investing \$70 million in the Vocational Education Network
  - a request for information is in the marketplace at the moment
- Education authorities are also continuing to invest in upgrading their networks
  - Particularly the NSW recent Telstra contract
  - And the Catholic Education Network



# Beyond the Infrastructure

Ubiquitous computing capacity and a fully effective national network will not be enough to achieve the objectives of the DER

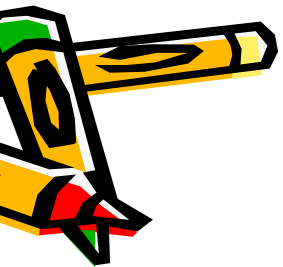
There has to be compelling content, linked to curriculum and designed according to sound pedagogical principles

And there need to be easy to use tools which can connect learners with resources, services and each other

Teachers need tools which make it easy to carry out their core educational role using technology

All the elements of an integrated solution need to be worked on

Otherwise individual elements will not deliver their potential



# How to get there

We have an agreed high level description of what we are trying to build

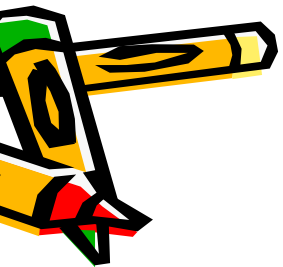
- the Strategic Plan for the Implementation of the DER

We have articulated priorities and key actions to be undertaken to move us towards the desired end state

- in the form of an Implementation Roadmap

- <http://www.deewr.gov.au/Schooling/DigitalEducationRevolution/Pages/default.aspx>

We are setting up expert advisory structures to refine the overall priorities and make recommendations on what projects should be funded to deliver specific outcomes



# Teaching challenges

Teacher pre-service education coverage of ICT issues is often relatively cursory

A significant proportion of the teaching workforce is not engaged or confident in the use of ICT as part of their pedagogy

The issue for the Australian Government is how to make sure all teachers in all schools can be part of the DER

The Government has recently announced a \$40 million fund for projects to address teacher and school leader professional development

The Government has also announced funds to develop tools to complement State systems

The Government is providing tools for teachers to assess capabilities and scope their professional development needs





# The importance of copyright

Copyright can be a major impediment

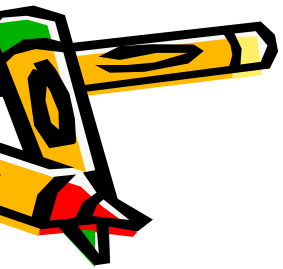
On line you want to copy/communicate all the time

Every student and every teacher is a 'publisher'

Copyright law is complicated and slow to change

Trying to solve copyright issues at the point of use is inherent  
problematic

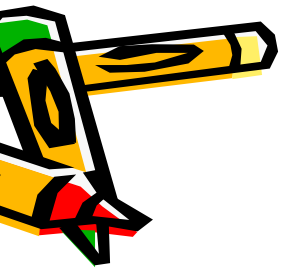
One option is to create large bodies of material which are  
copyright cleared in advance so teachers and students can use  
and manipulate them without facing uncertain costs and  
liabilities





# The Education Revolution and the Digital Education Revolution

- The DER will not be successfully implemented without other elements of the ER agenda
- Successful implementation of the DER will facilitate successful implementation of key elements of the ER
- Key elements are the transparency agenda and the National Curriculum



# Transparency

- The Deputy Prime Minister has committed to enriching the data on the My School website
- This will include data on funding for schools
- She has also stated that there must be transparency of what happens in classrooms
- There is a need to make sure data on performance is actively used by schools and teachers to improve performance
- Driving real change in the provision and utility of ICT systems in schools is the only way to achieve this



# National Curriculum

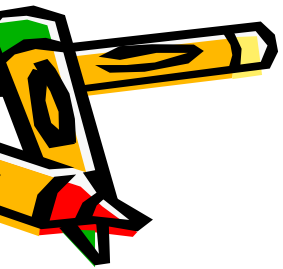
- There will be a need to provide 'professional development' on the National Curriculum
- And to ensure implementation of the curriculum is truly national
- Providing on line exemplification, assessment materials and teacher self assessment and certification is a most effective way of achieving this
- The National Curriculum will provide the framework for a truly national approach to development of content, tools and collaboration support





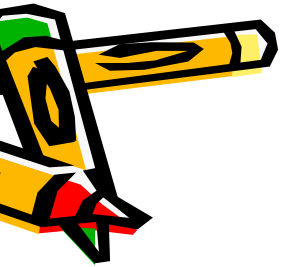
# Why don't teachers use ICT

- It is not just because they are old
- The preconditions for easy and effective use still do not exist
- Teachers who use technology in their private lives do not necessarily use it in class
- The obvious solution is to actually make the technology more useful
- Teachers are used to sharing and collaborating
  - better tools to do that on line will be important
- Also to use the technology itself as a mechanism for engagement
  - particularly Web 2.0 tools



# Role of Web 2.0

- The key features of Web 2.0 are
  - ease of use
  - massive numbers of developers
  - Amazing speed of development
- The key problem is how to reconcile its 'wild west' nature with schools duty of care
- In many ways this is the key problem to solve



# Longer Term

Teaching in schools has been a very slowly changing thing

Technology is eventually going to transform teaching

- First by making one to many teaching more efficient
- Then by changing model

Areas of specialist teaching are likely to be the first areas where traditional approaches break down

