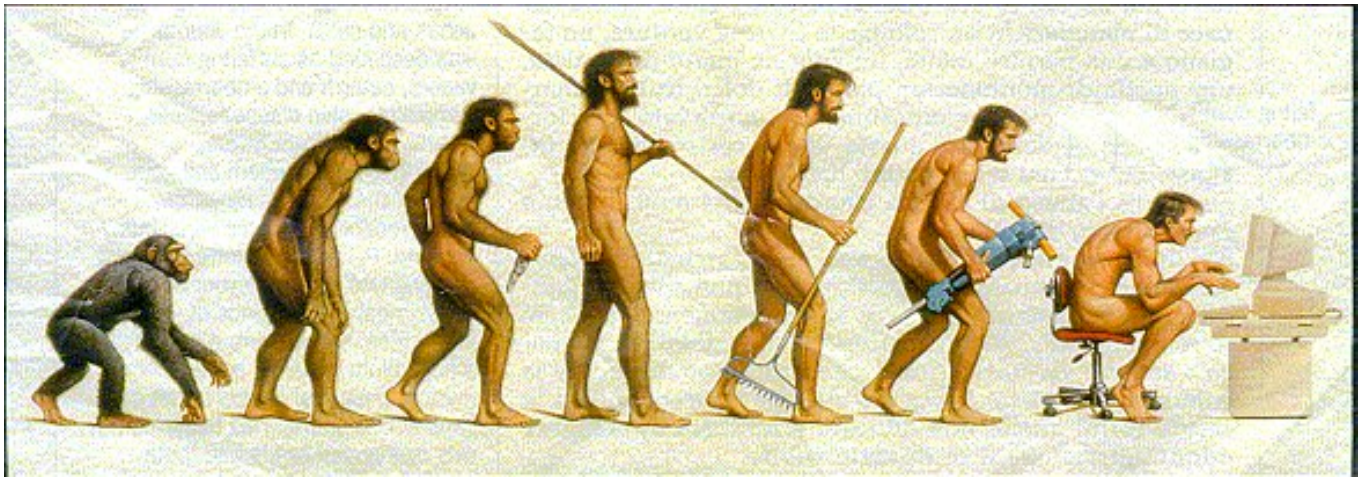
RESEARCH EVIDENCE THAT UNDERPINS THE CHANGE FROM ICT TO THE NEW COMPUTING CURRICULUM



Dr Christina Preston, Professor of Education Innovation
MirandaNet Fellowship
University of Bedfordshire

MIRANDA NET FELLOWSHIP

Who are you?

Which communities of practice do you belong to?

Can you name a government policy in curriculum change that has been underpinned by research findings?

Where the money is research follows..this is not a blue skies approach

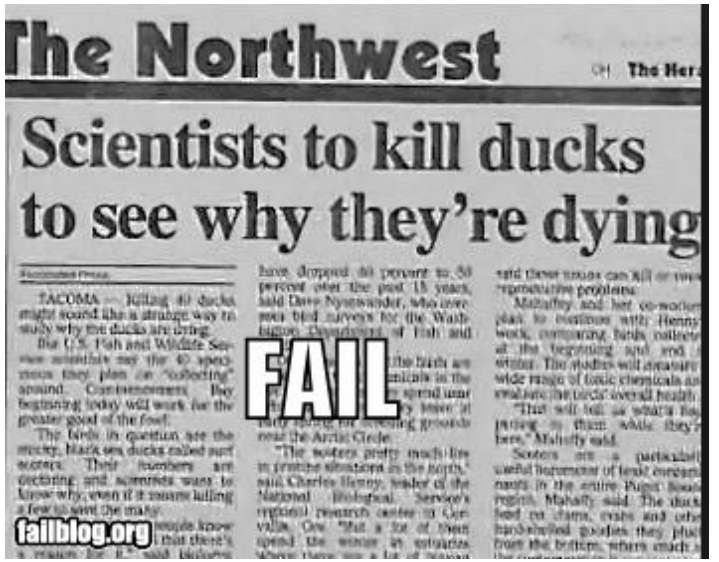
1997 – 2007 ‘Boom Years’

£5 billion spent by New Labour on the technological infrastructure alone despite the warning from researchers about the significant obstacles to using digital technologies to effect transformation when there is no consensus on what transformation is…

Some obstacles

Lack of effective CPD; wrong trainer specification; appropriate spaces; technical hitches; assessment, examination and reporting demands; teachers’ doubts and lack of support for risk taking.

MirandaNet NOF evaluation 2004
www.mirandanet.ac.uk/tta

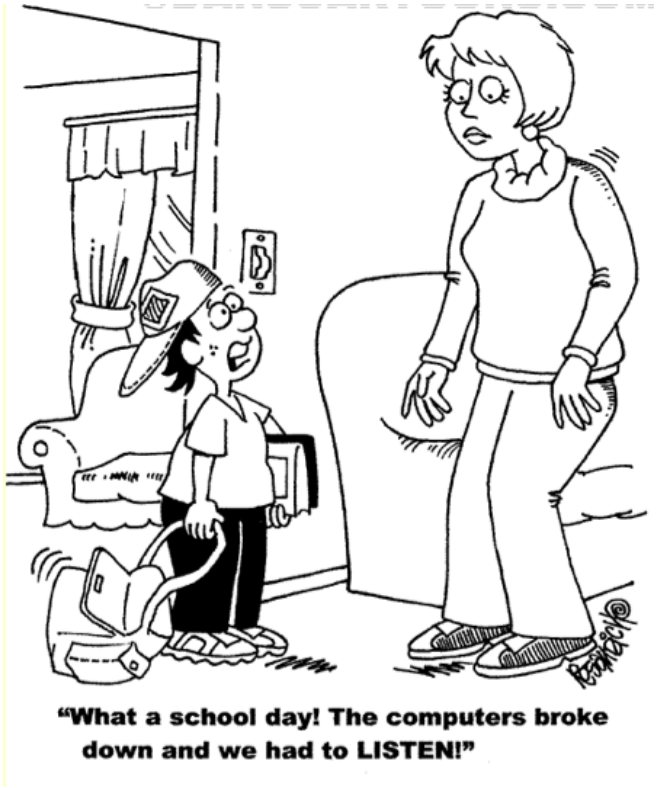


Which part of NO do you not understand? The N or the O?

Blair/Brown initiative 2005

Gordon Brown boasted of a £1.67bn investment enabling schools to be "no longer blackboard and chalk ".

“Interactive whiteboards are large touch-sensitive panels connected to a digital projector and a computer. In schools, their big attraction is that they can display video and graphic material directly from the web - **and that everyone can join in**”.



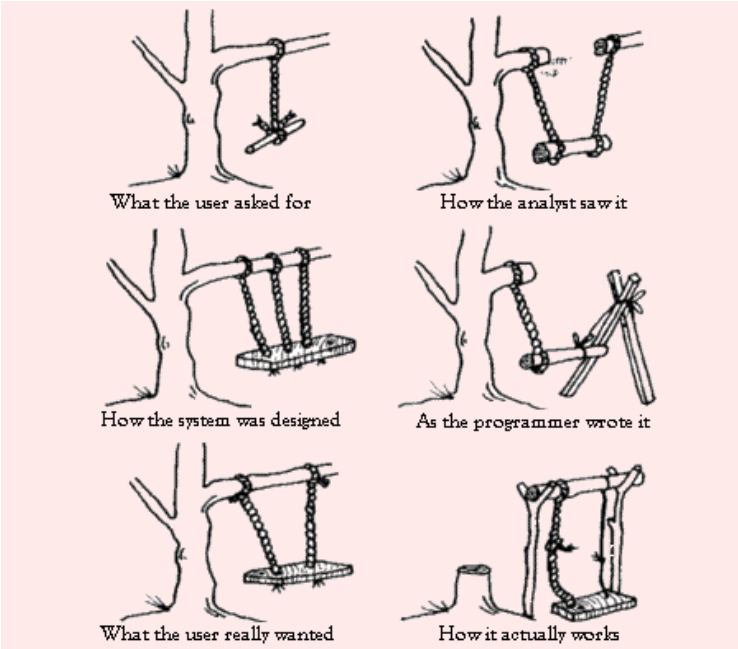
Did they read this?

MirandaNet researchers warned: IWBs in cupboards, black boards exchanged for whiteboards, lack of interaction; too expensive, doubtful software, lack of appropriate CPD, ‘bandwaggon’ dangers….

The evidence for change from ICT to Computing with Computer Science is..?

[Changing from ICT to Computing] has only been possible as a result of sustained collaboration and cooperation across the computing, science and engineering communities, which includes **Next Gen Skills, NESTA, E4E, CIHE, CASE, Rewired State, the Royal Society, the Royal Academy of Engineering, the Royal Society of Edinburgh and UKIE**, as well as with support from **CPHC and UKCRC**. It is also thanks to international technology companies, such as **Microsoft, Google and MetaSwitch Networks**, that such significant progress has been possible."

http://academy.bcs.org/node/48/transformation-government-policy-computing-school



The coding process !

Balance from the digital literacy and information technology community? ITTE, Naace, MirandaNet, ALT, subject associations?

A MirandaNet call to the professional communities for recommended research about Computing and ICT in schools

1. Research on the impact of ICT in teaching and learning is **almost impossible to find**, and what there tends to relate to limited teaching and learning situations, such as exam revision.

2. This is because it is impossible to separate out **the impact of ICT from all the other aspects of good teaching and learning".**

Roger Broadie, Naace

Please send to: christina@mirandanet.ac.uk

A MirandaNet call to the professional communities for recommended research about Computing and ICT in schools

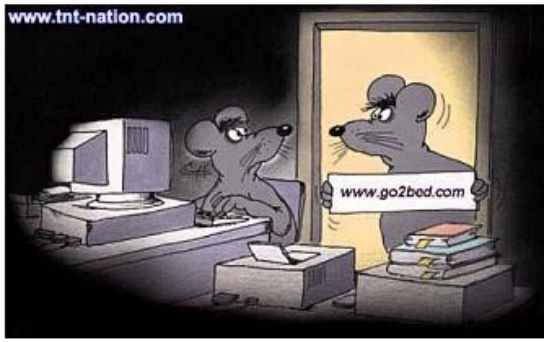
- Research that is freely available from publically funded organisations and charities like IFS and ESRC and EU;
- Free research that is collated and researched by practitioners like ITTE, Naace and the MirandaNet Fellowship;
- Research promoted by the authors who have been completing Ph.Ds and writing books:
- Research by companies and governments who want to promote a policy or product;
- Research findings that can only be accessed by payment or subscription like ITTE and Naace.

"I want a computer that does what I want it to do, not what I tell it to do!"

University courses that include access to the library, access to experts and time to study

The Bonfire of the Quangos…..
and all the research paid for by the tax payer

[Hard to find useful research] because it is impossible to separate out the impact of ICT from all the other aspects of teaching and learning - ***Roger Broadie, Naace***



Not true but….

It is hard to communicate a complex picture in today's sound byte culture

Translation challenges….

Researchers surmise about
"Schooling Technologies, Techno-romanticism and False Promise:
The Ideological Construction of Educational Technologies and the Paucity of Critical Perspectives". 12 point

The Guardian asks whether government perceptions of the innovative use of education technology are overhyped and misguided x 14 point

The Sun says the government sets the questions, pays for research - and then doesn't listen to the whole answer…
da..da
..x28 point minimum

"It's the latest innovation in office safety. When your computer crashes, an air bag is activated so you won't bang your head in frustration."

Education Innovation

Innovation needs to be exciting and, therefore, it must involve risk-taking.....

"It's all very well and good having a formula, but all good algebra lessons start in the classroom – and not just the maths lesson. The starting point is most certainly at school.

Teachers should tap into this creativity by using a simple hands-on approach to encourage uninhibited thinking and instill confidence in pupils to try out ideas.

Overly prescriptive curriculums, rigid classroom environments and the constant hurdle of examinations should be overridden in order to encourage students to use their imaginations freely..... classes should be about breaking the rules and learning from mistakes. Experimentation and creativity need to be cultivated from an early age if we are to see true innovations emerging in the future".

"Your x-ray showed a broken rib, but we fixed it with Photoshop."

James Dyson

http://www.ingenia.org.uk/ingenia/

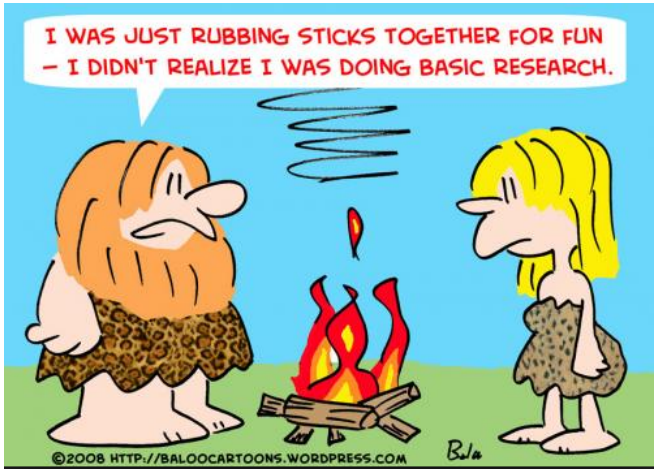
Shouldn't teachers have ownership of change?

How interested can we expect teachers to be in the findings if someone else did the research?

One solution:

MIrandaNet Fellows case studies published since 1992

Free on the web….



Naace Third Millenium Learning Awards

Starting from the 21st century skills pupils need

Imagine…

Imagine…if

Researchers, research funding bodies, teachers undertaking research could easily

- see gaps in the research base
- see what topics are well researched
- find questions teachers want researched
- cost effectively collaborate across regions to scale up and test out emerging practice in different settings
- Easily find out what was best practice in other countries.

Our evidence base for effective practice was based on cumulative research over years, across settings

rather than being small scale, diverse and rarely useful in providing a foundation for practice or policy making

Imagine… if

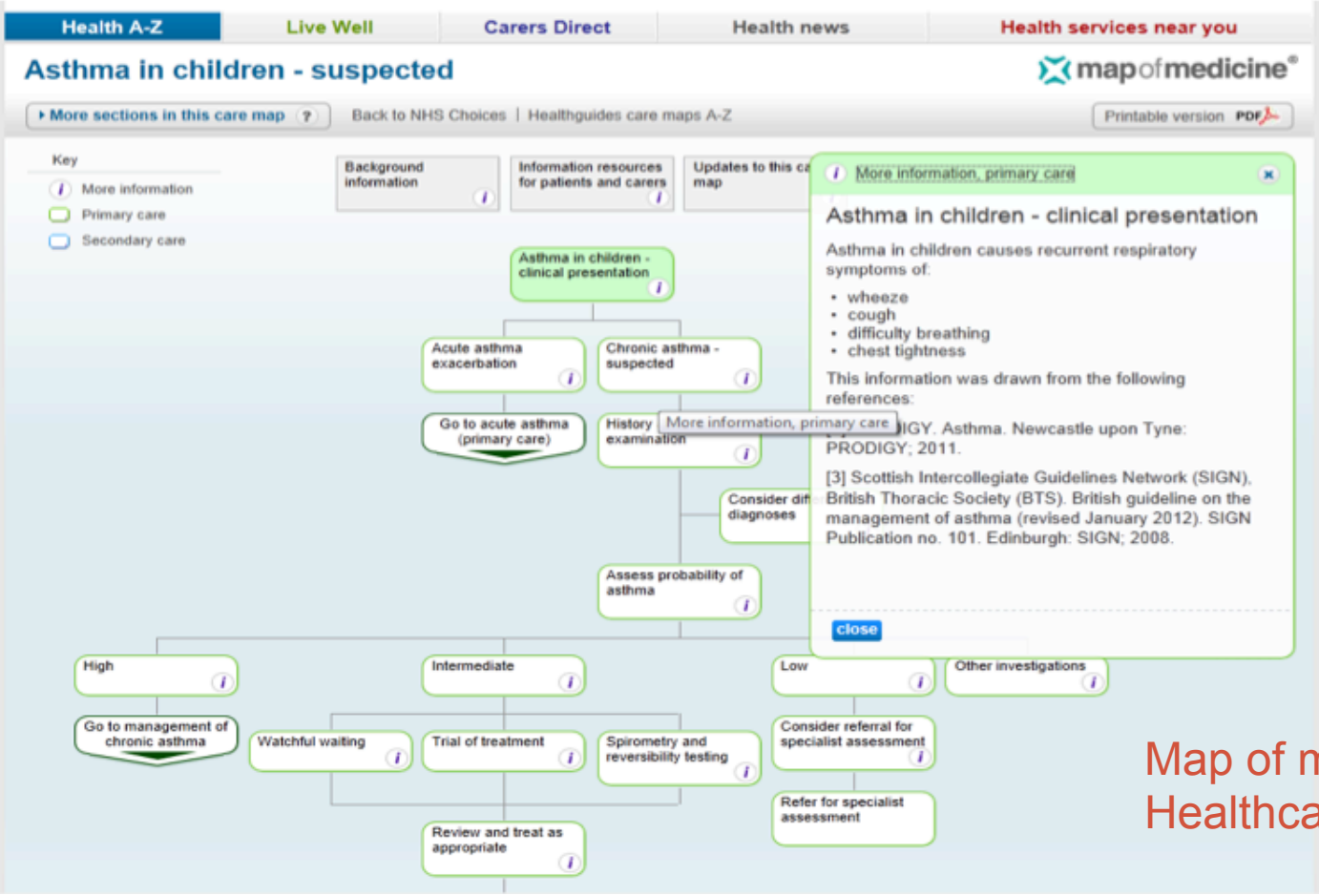
Education Futures Collaboration

We had

- personalised professional development that trainee teachers and new teachers could easily access at the touch of a button
- research based pedagogic knowledge *about barriers to learning threshold concepts at a fine-grained level*
- pedagogical tools such as *explanations, demonstrations, modelling, questioning* used by successful teachers
- *teachers demonstrating achievement of standards could show how they drew on and contributed to the evidence base*

Educators collaborated to develop a quality assured Wikipedia type resource…

Learning from others: MESH



Map of medicine
Healthcare guides

Campbell collaboration

Map of Medicine: *evidence based care maps*

Cochrane Collaboration: systematic reviews (medicine)

National Institute for Clinical and Health Excellence (NICE)

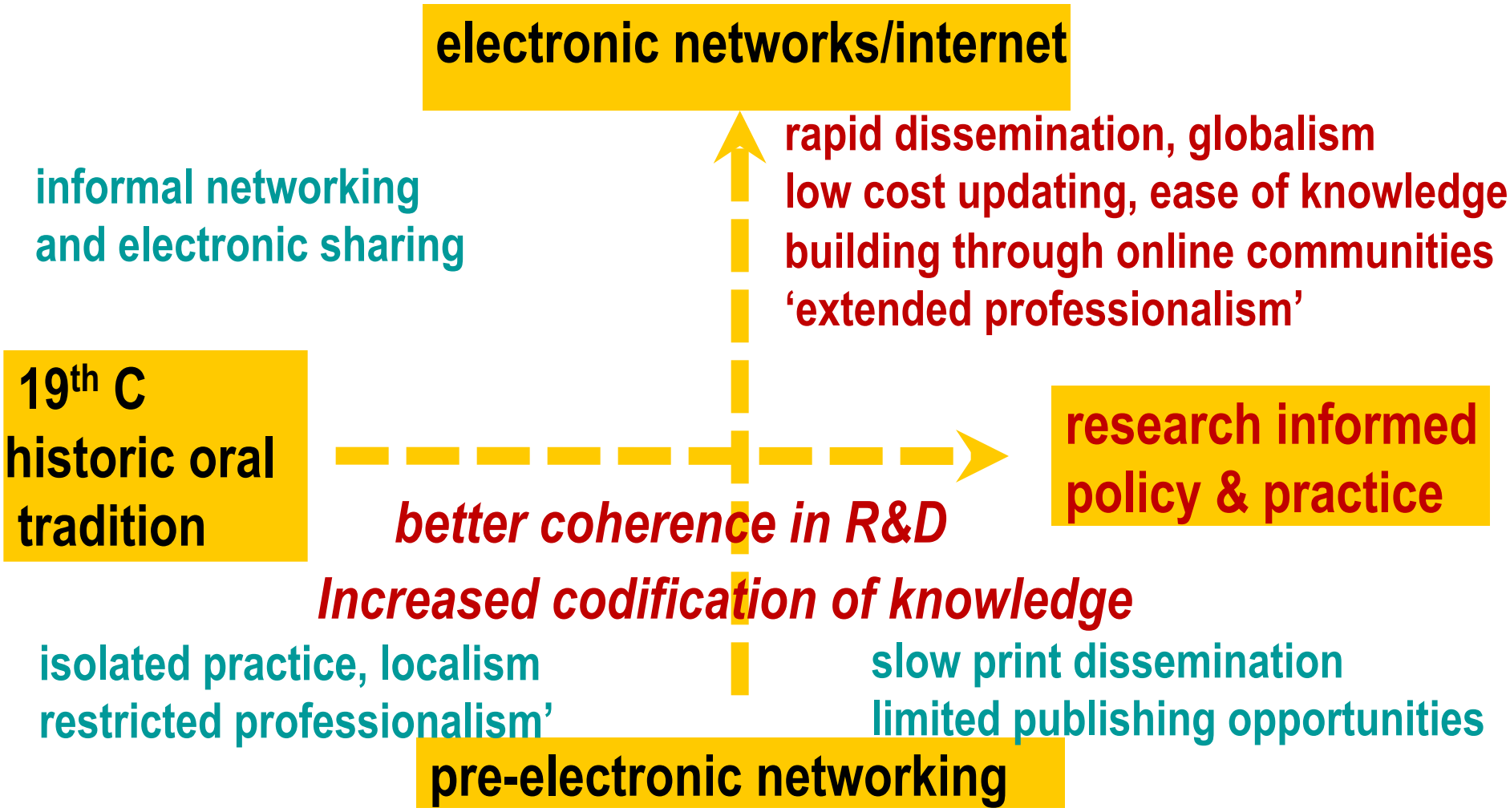
Social Care Institute of Excellence

Local government association Knowledge Hub

NHS direct

Context: moving from 19th to 21st C practice

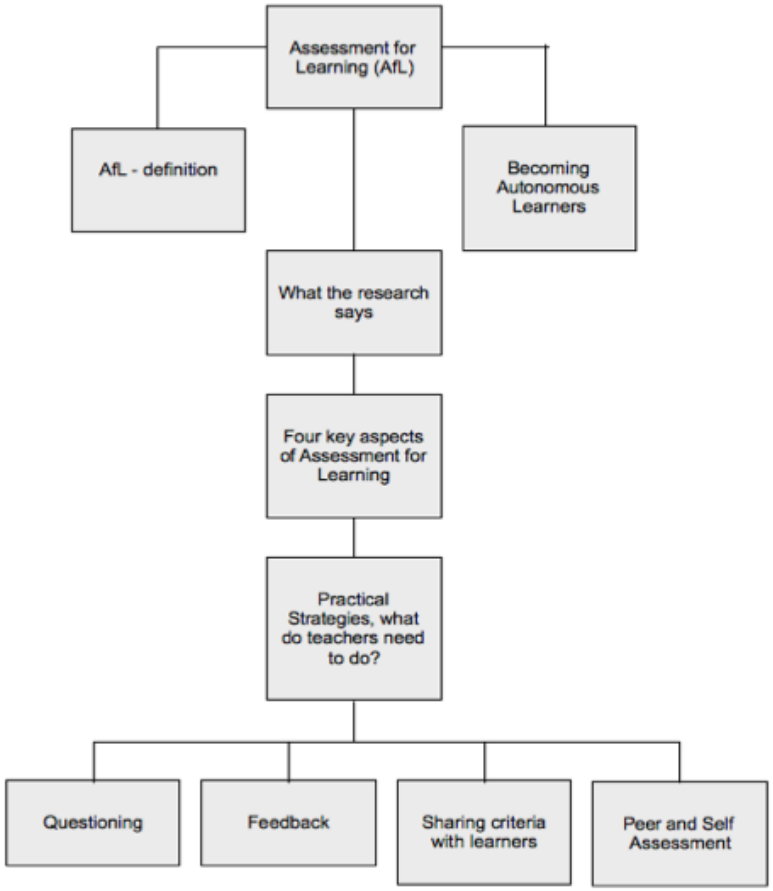
LEASK, M. (2011) Improving the Professional Knowledge Base for Education: using knowledge management and Web 2.0 tools, *Policy Futures in Education*, 9(5), 644-660. ackn Ralph Tabberer prev. CEO, UK TDA. 2004



MESH example

MESH
Mapping Educational Specialist knowHow

Assessment for Learning



Becoming Autonomous Learners

Autonomous learning is achieved when

- learners make sense of where they are in their learning, where they are going, and how to improve;
- in other words, when they become autonomous learners, and engage in Assessment for Learning themselves.

Evidence Base

- The following references are part of the evidence base for this resource.

References

- Black, P. and Wiliam, D. (1998). Assessment and classroom learning. Assessment in Education, 5(1): 5-75.

To contribute or comment

- Comments

  Submit

- If you would like to contribute please contact richard.procter@study.beds.ac.uk

MESH

Mapping Educational Specialist knowHow

Invitation to teachers to submit questions for research that have arisen from practice

Ownership so far from:

- ICET
- OECD
- UK
- Australia
- USA
- New Zealand
- Pakistan
- Africa
- Enquiries from Brazil, Jordan, Canada, Thailand…
- More funding applications in from Spain, Greece, Portugal, Czech Republic, Pakistan, Australia, UK.

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lightspeed

ORACLE ACADEMY

Java

iris connect discover. develop. share.

ingot TLM Nationally Accredited Qualifications

Aspen | MIS

Yellow Dot

MESH

Mapping Educational Specialist knowHow

Christina Preston, MESH editor,

- **General pedagogies**
- **Programmes and commercial products**

Ask Me

Or see 'Getting Involved' tab on
www.MESHguides.org

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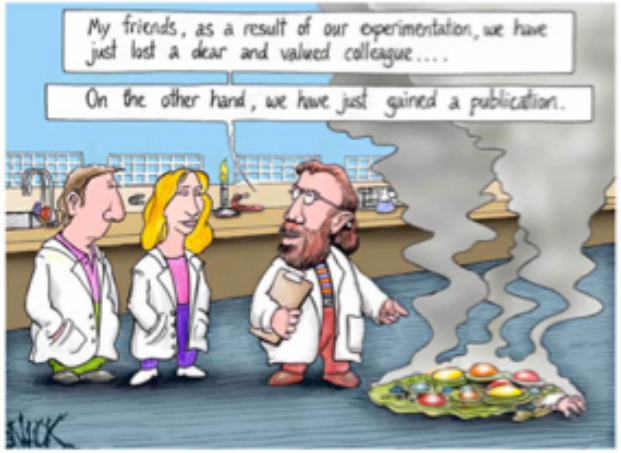

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