

# The Landscape of ICT CPD and The Golden Triangle

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# Outline

- ICT CPD Landscape – a landmark report
- Living in interesting times – 5 years on
- The CPD we need now?
- The Closed Loop
- The Golden Triangle

Landmark Study

# ICT CPD LANDSCAPE RESEARCH

# The Landscape Study

- A landmark research piece: The **ICT CPD Landscape** study –
- Reported on ICT CPD programmes available to teachers in England in 2010
- In-school interviews, questionnaires and focus groups
- Innovative digital concept map

ICT CPD Landscape Report: Norbert Pachler, Christina Preston, John Cuthell, Allison Allen, Catrin Pinheiro-Torres  
Institute of Education, London for Becta 2010. <http://dera.ioe.ac.uk/id/eprint/1769>

# The Landscape Study

## Providers;

- limited by market conditions
- not in position to lead schools into new areas or challenge school priorities
- market small / uncertain because schools did not have ring-fenced funds for CPD in general and ICT CPD in particular
- wide disparity between individual teacher's technical skills and competence among training delegates

# The Landscape Study

## Providers;

- need for changed leadership priorities in school and government
- lack of ICT CPD - loss of ICT advisers critical factor
- school management, government and LA agendas driving ICT CPD
- training on software without learning outcomes or teacher confidence
- courses about skills and ICT in classrooms - nothing on impact on learning except from LA CPD

# The Landscape Study

## Leaders;

- they promoted CPD opportunities via informal colleague networks or word of mouth
- staff CPD identified by (unclear)needs assessment
- cost, time, location affected decision (barriers)
- Further barrier - refusal of some SMT to see the benefits of ICT CPD
- Desire for more in-house ICT CPD, communities of practice and informal using Web 2.0 applications.

# The Landscape Study

## Leaders;

- consider themselves to have high levels of skill in the application of digital technologies
- a few wanted CPD at higher intellectual level to deal with digital dangers and demands; and focus on pedagogical opportunities, change management and media issues.
- some leaders identified need for SMT to tackle issues of teacher reluctance to use ICT in classrooms.

# The Landscape Study

## Practitioners;

- a lack of entitlement to CPD in general and ignorance of their desire pursue formal qualifications (career enhancement)
- keenness to learn and belong to communities of practice
- most effective CPD varied e.g., online meeting through professional communities and micro-blogging

# The Landscape Study

## Practitioners;

- issues not addressed - reliability problems, e-safety, unreliable equipment/web services, poor support services, ethical and moral concerns, poor pedagogical practices and fears about social isolation, lowering achievement and celebrating limited achievements too highly.
- reluctant teachers wanted more professional debate at a higher intellectual level about digital technologies in education - evidence about their effectiveness /discussions about good practice.

# The Landscape Study

## Other factors;

- little dedicated time for CPD - teacher tiredness in twilight sessions was cited by all
- the lack of a national framework for CPD
- no compulsion for schools to provide appropriate CPD
- funding issues
- CPD being driven by perceived current needs, rather than long-term strategy

# The Landscape Study

## Recommendations;

- Entitlement to professional learning
- Evaluation and assessment of professional development and learning
- Senior management issues and actions
- Support for schools including case studies
- Provision for an overarching national online community of practice
- Improving ICT CPD provision

In the 5 years since the landscape report

# LIVING IN INTERESTING TIMES



# Living in Interesting Times

- **New curriculum** across all subjects
- **Life after levels**
- School autonomy?
- Education Act, new kinds of new schools, budget cuts, ~~BSF~~, ~~Becta~~, China, Gove, Gibb, Ofsted
- **Facts and knowledge not skills**

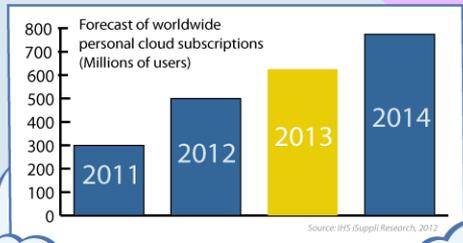


# TECHNOLOGY

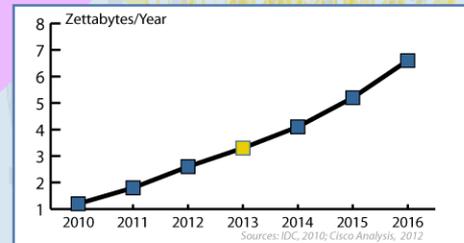
## BIG DATA

## THE CLOUD

# TRENDS 2013



In 2011, there were 300 million subscriptions to cloud services. This year, that number is estimated to reach 625 million.



More devices leads to more data. This year, 3.3 zettabytes\* of data are expected to be created. Of that data, only 0.5% is actually analyzed. Expect that percentage to increase, as data analysis capacity increases.

\* How much is a zettabyte? Enough to store 36,000,000 hours of HD video. That's enough to stream the entire Netflix catalog 3,177,000 times.

## PCS DECLINE

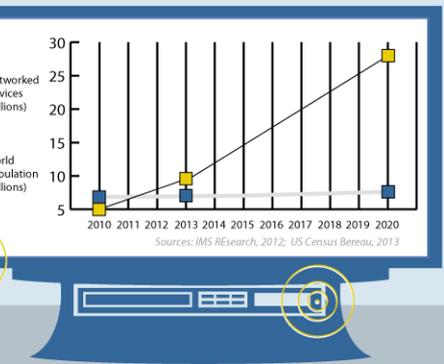
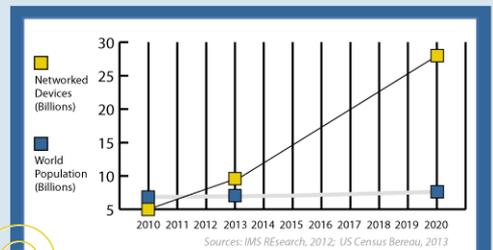


For the first full year since 2001, personal computer sales declined in 2012. This trend is expected to continue.

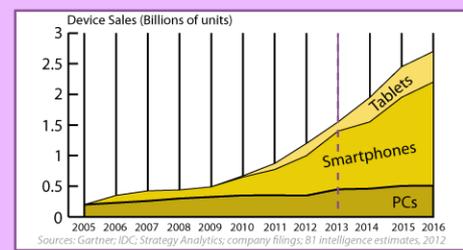


## THE INTERNET OF THINGS

In 2012, there were more internet connected devices than people. By 2020, that number should triple, as more media players, appliances, and automobiles begin connecting to the internet.



## MOBILE DEVICES



The number of tablets and smart phones continues to grow, as more people look to mobile devices for their computing needs.



## MOBILITY



## TOP NAMES

- |         |   |          |
|---------|---|----------|
| William | 1 | Lily     |
| Jack    | 2 | Chloe    |
| Jacob   | 3 | Isabella |
| Lachlan | 4 | Mia      |
| Oliver  | 5 | Olivia   |

# GENERATION Z

★ BORN 1995-2009 ★

## EFFECTIVE ENGAGEMENT

- |  |   |                 |   |
|--|---|-----------------|---|
|  Verbal | → | Visual          |  |
| Sit & listen   | → | Try & see       |   |
| Teacher  | → | Facilitator     |   |
| Content (what)   | → | Process (how)   |   |
| Curriculum centred   | → | Learner centric |   |
| Closed book exams  | → | Open book world |   |

## EDUCATION

-  1 in 4
-  1 in 3
-  1 in 2\*

UNIVERSITY EDUCATED

## DIGITAL INTEGRATORS

 **10 HRS 19 MINS**  
TECH. USE/DAY

**5,100,000,000** SEARCHES/DAY 

 **4,000,000,000** VIEWS/DAY

**1,000,000,000+** ACTIVE USERS 

 **500,000,000** TWEETS/DAY

**1,000,000+** APPS 

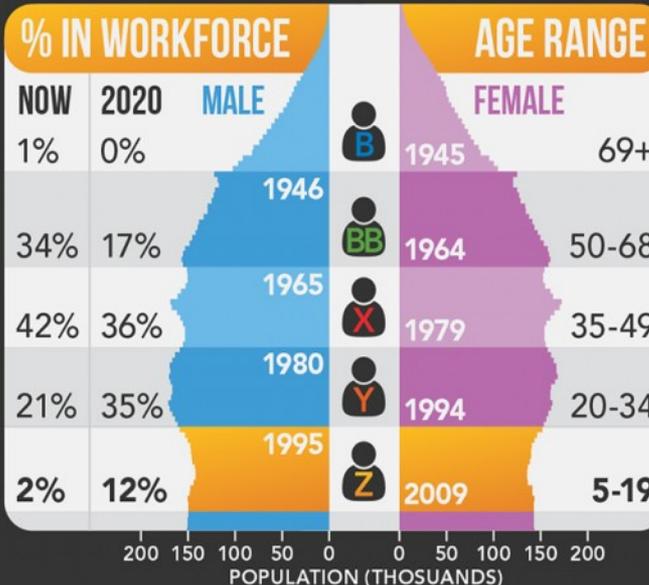
## WEALTH

Avg. annual earnings in 2063 (as Gen Z retire)\*

 **\$222,000**

Average capital city house price (2063)\*

 **\$2.5 MIL.**



## SLANGUAGE



## HEALTH

% likely to be obese/overweight when all Gen Z have reached adulthood (2027)\*



## GLOBAL GENERATION

**2,000,000,000** 2 BILLION GEN Zs

COUNTRIES WITH LARGEST NUMBER



## REDEFINED LIFESTAGES

20<sup>TH</sup> CENTURY

CHILDHOOD

TEENAGER

ADULTHOOD

TODAY

CHILDHOOD

TWEEN

TEENAGER

YOUNG ADULT

KIPPERS

ADULTHOOD

CAREER-CHANGER

DOWNAGER

ERNEKO: Came close to 400

Chevaliar: i have 2700 drones

Chevaliar: get mad

Kordy: mad?

Snapplemonkey: So, I was here when we hit 100% , any news after that?

Eremes: any official word on the results?

Laiibot: 20 drone kills

eSmokefish: I got exactly 500. I did what I could.

Xenokun: And a self-agrandizing statement about atheism

Laiibot: get mat

Crestbreaker: Scott as in the animator or the other guy?

Shaydo: I have 26 i aint even mad

Laiibot: mad\*

Kordy: more like sad. So much autism, spent on drone kills

Milotic: I only had time to grind this weekend right when the event started and right when this event ended, I think I did pretty damn good all things considered

Albie: guys if you write le\_dendi\_face it will post his face

Albie: trust me

Chevaliar: everyone

Shaydo: I just got 20+ for the snipertron lel

Shaydo: SORRY WARBROS

MoonZapdos: Lailbot , what if you needed -more- than 20, and thus 21 minimum, hm?

NeoShadowHzFx: le\_dendi\_face

Chevaliar: le\_puppi\_face

thefnordest: >77

Don't panic.

models of CPD

# THE CPD WE NEED

# CPD in 'Outstanding' schools

- strong focus on **skills** for using hardware and software programming, coding, algorithms (not just in Computing)
- **no focus** on developing teachers' higher thinking skills
- **reduction** in the professional involvement of teachers
- **lower effectiveness** of interventions in terms of pupil impact

## But

- **SMT understand** collaborative CPD and partnership with researchers to achieve changes in teachers' pedagogical practice
- use of **cluster schools** to develop teacher thinking skills - teachers working together, critical friends.

# The 'Jazz' of Teaching

- Current dominant views of teaching are framed in terms of 'planning' as well as 'targets', aims, objectives and outcomes'.
- This **technicist** approach to teaching and learning sees our and our learners' work as a set of competencies and performatives that can be pre-planned and then 'delivered' un-problematically.
- **Consider teaching as a creative, and often improvised social activity, co-constructed by teacher and learner(s).**

*Adapted from [www.learningunlimited.co/courses/cpd](http://www.learningunlimited.co/courses/cpd)*

# A Technician Model of CPD

“The evidence ... suggests that **technicist**, delivery models of implementation will not only reduce the professional involvement and motivation of teachers but may also reduce the effectiveness of the interventions in terms of pupil impact”

**The impact of the implementation of thinking skills programmes and approaches on teachers**

*Review conducted by the Thinking Skills Review Group (now the Centre for Learning and Teaching), based at the University of Newcastle upon Tyne 2005*

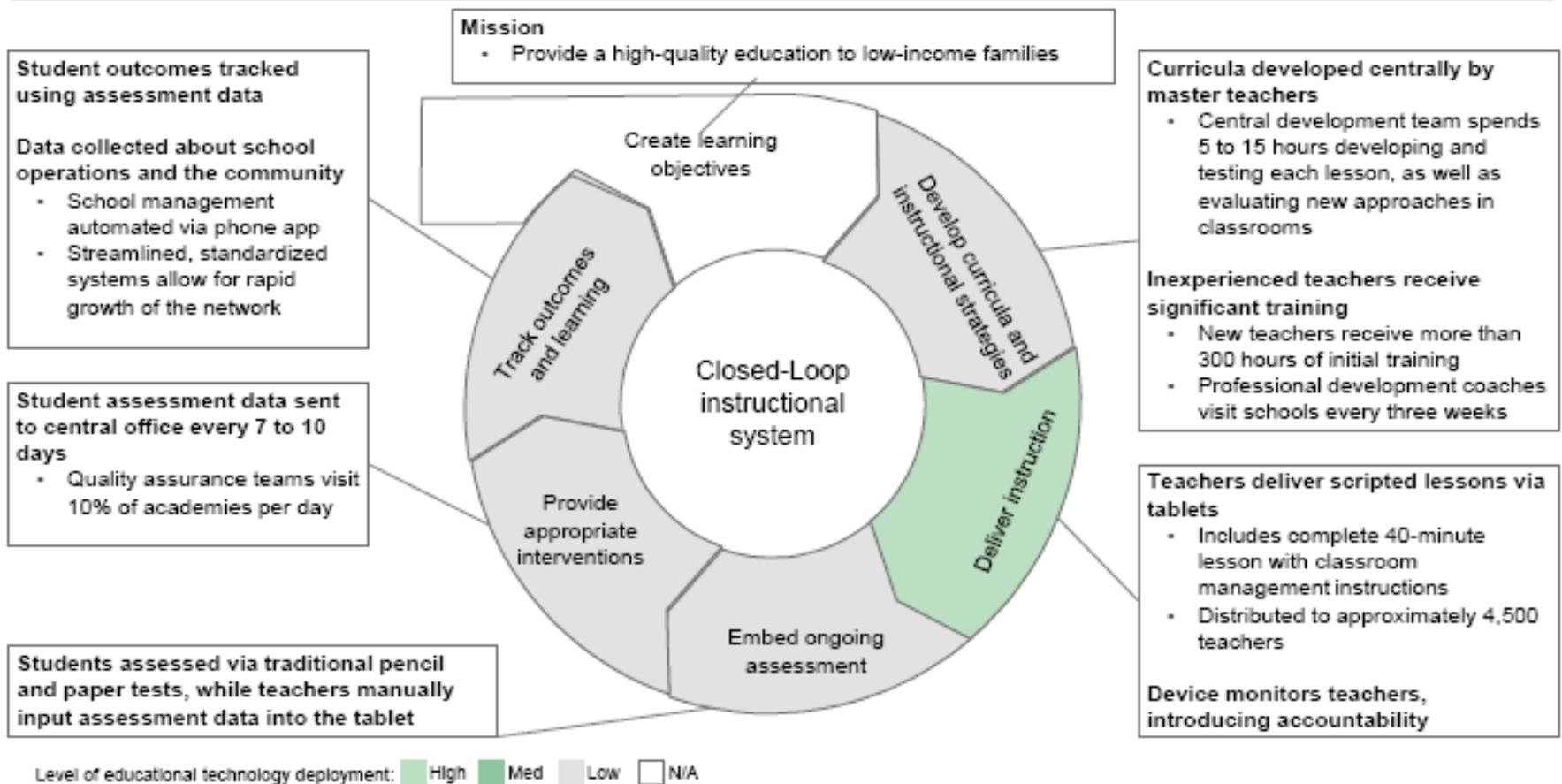
# The Centralised Model

- Special Needs Co-ordinators (SENCOs)
- training and development - central direction through the use of specified standards laid down nationally
- resulted in a **technicist** model which has ignored the affective domain of teaching and learning

Adapted from: <http://dx.doi.org/10.1080/13674580100200149>

# Centralised Model (*closed loop*)

## Example: Bridge International Academies in Kenya



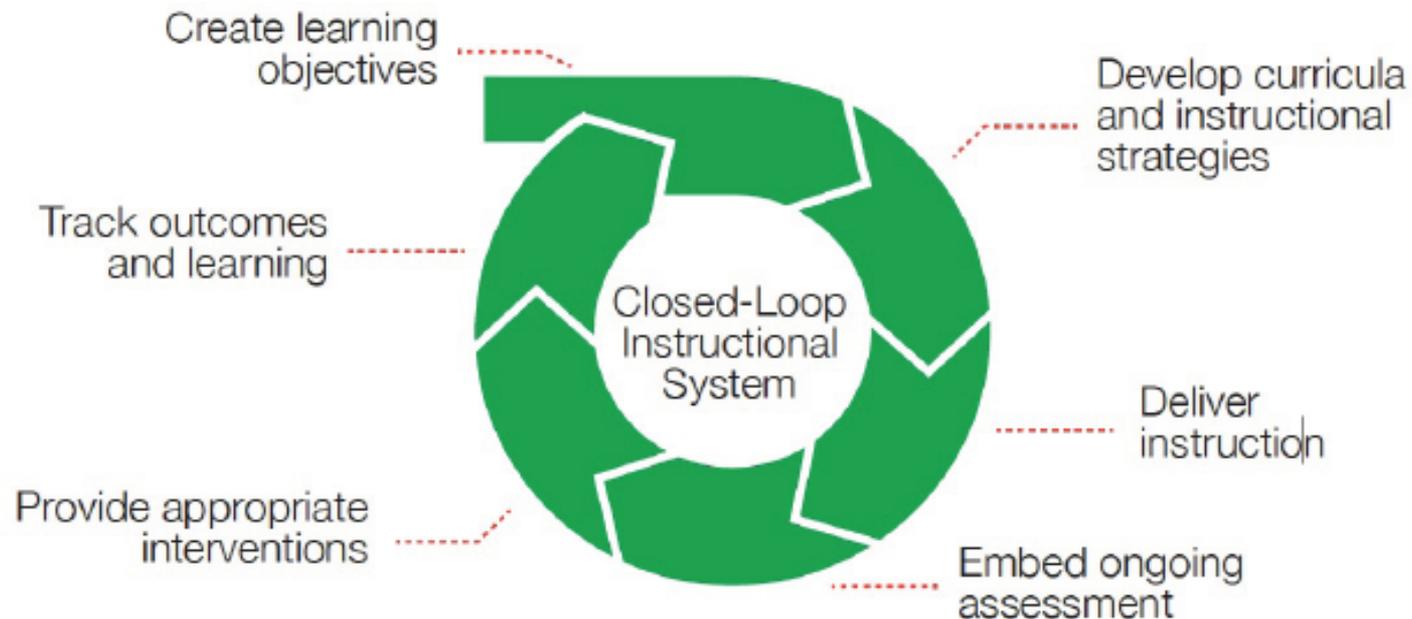
# Closed Loop

- “But when educators add education technology to the mix of potential solutions, **we find they are most effective if applied within an integrated instructional system known as the closed loop.**
- As in engineering or manufacturing, the closed loop refers to a system that requires **an integrated and connected set of steps to produce results.**”

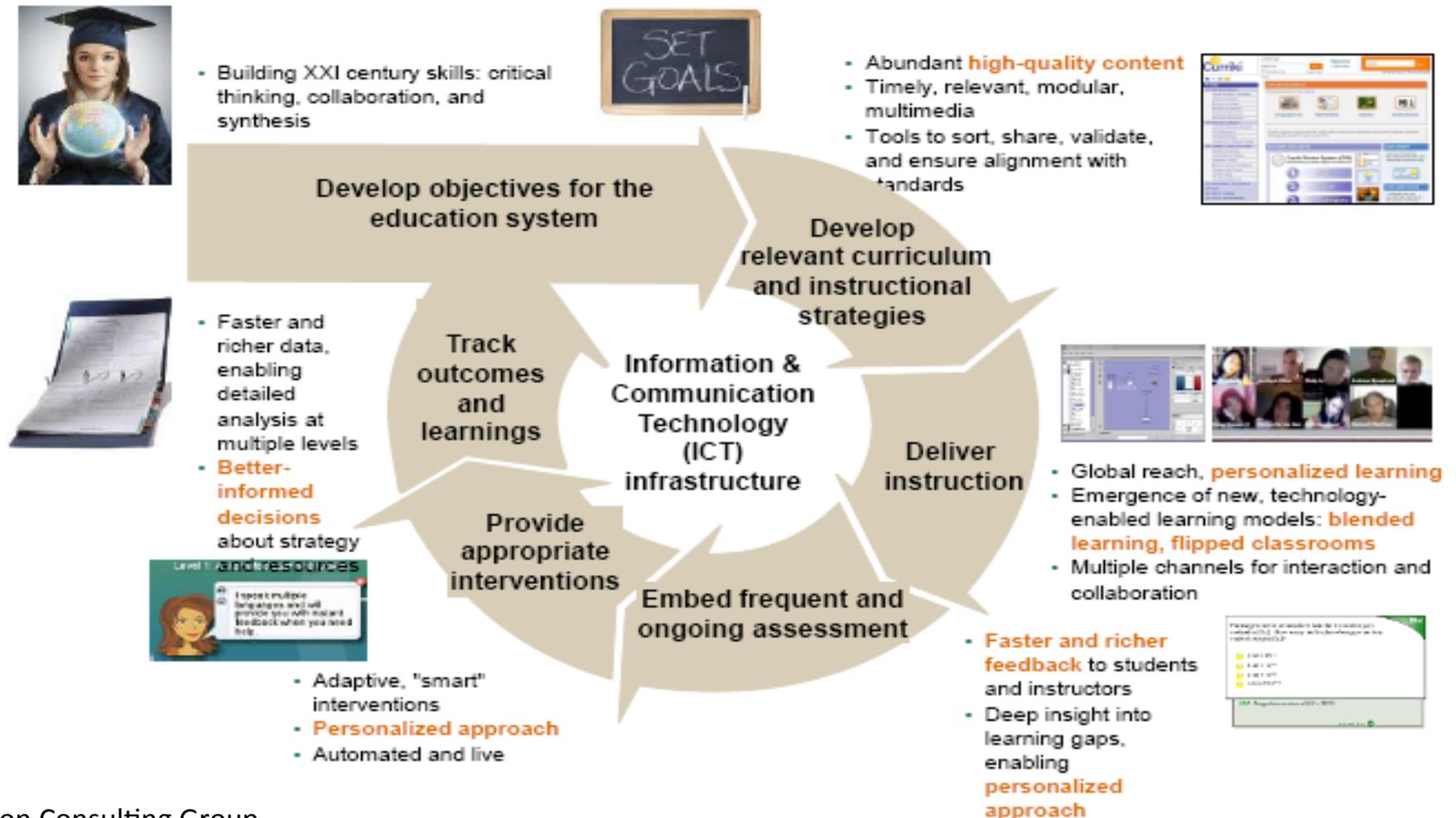
Rose Luckin, Professor of Learner Centred Design, London Knowledge Lab, Institute of Education, University of London

# Closed Loop

**Exhibit 6:** An instructional system known as the closed loop is necessary to address skills gaps



# Closed Loop



# Call for action:

Multi-stakeholder approach required to prepare students for 21st century



## Policy makers

- Assess & re-align educational systems & standards to 21st century skills
- Create environment supporting innovation, both from schools & ed-tech players



## Private Sector & Ed-tech Providers

- Develop products to fill gaps in 21st century skill measurement & instruction



## Educators

- Develop and promote teacher tech expertise
- Evaluate technology for effective adoption throughout the closed-loop given unique country contexts



## Funds & Alliances

- Invest in innovation incubators for ed-tech products and solutions in developing world
- Provide resourcing and advice to pilot tech-enabled models for competencies and character traits development

# Action Research Model

- Evidence-based teacher development and school improvement
- One of the most successful ways to develop teachers and have a positive, lasting impact on students' learning is a research-based approach to teaching.
- By engaging in practical in-class action research, teachers are able to reflect, extend their teaching practice, and enhance their skills based on solid evidence.

*“Engaging in action research works by encouraging teachers to seize control of their own learning. It also has a really big impact on children's attainment.” Principal*

Source: The National Foundation for Educational Research, based on; Schleicher, A. (2011). *Building a High-Quality Teaching Profession: Lessons from around the world*, OECD Publishing.

# Curriculum

“Most of the curriculum want their which is maybe d into what to learn, their own things that as imp

Tea

“ It’s made me reflect a lot about the way I teach – allowing students a lot more freedom within a lesson, within a structure in order for them to gain ownership over what they’re doing... in some ways I guess it’s changed my approach to normal teaching.”

Teacher

nts bring to classroom a d of stuff ners don’t and some of y valuable. ng an awful knowledge classroom.”

teacher

Communication, Collaboration -> Improvement

# THE GOLDEN TRIANGLE

# The Golden Triangle

**How can I better communicate my research to teachers and companies?**

Researchers

Improved TEL:  
Improved learning;  
Better teaching  
Increased sales  
Better Research

Evidence

Teachers,  
Learners, Parents

EdTech  
Developers

**How is research evidence relevant to me and how can I find out what teachers and learners think of my product?**

**How can I find out what works when using technology to support learning?**

# Thank you

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