Developing a better understanding of the affordances and challenges associated with the use of technology in teaching and learning
Abstract:
Adapt current modules of work, for example,
Skills in spreadsheets to modeling plus use of keywords
Creating a web page to integrating external data
Introduce new modules of work, for example,
Programming in Scratch, Python, App Inventor, etc.*
Unplugged approaches to teaching computing

Use extra-curricular activity to promote, stimulate and initiate curriculum interest
Developing a better understanding of the affordances and challenges associated with the use of technology in teaching and learning

Affordances:

“the functionality of e-learning devices is defined by what they do... when buttons are pressed, options selected and data entered”

“The affordances of e-learning devices are the ways and means of learning that are supported by those devices”

The affordances of a wiki are: collaborative working, socially constructed understanding, collective responsibility...

The affordances of a blog are: reflective practice, self-assessment, learner responsibility, learner independence...
Developing a better understanding of the affordances and challenges associated with the use of technology in teaching and learning

Challenges:
Avoidance of difficulties, disadvantages, problems, etc.
“Meeting challenges...” is our message
Though measuring impact, soliciting achievements,

Where we meet challenges:
Skills, knowledge, understanding and attitudes (SKUA)
Digital literacy: competent and confident use of technology
Bloom’s affective domain
SEAL, mindfulness, self-awareness > social aspects
Vigilance, resilience > aspects of e-safety
Developing a better understanding of the affordances and challenges associated with the use of technology in teaching and learning

Technology:
Aspects of hardware and software
Wiki, forum, e-portfolio, VLE,
Developing a better understanding of the affordances and challenges associated with the use of technology in teaching and learning

Learning:

Learning theories:
behaviourism, (social) constructivism, constructionism but less so regarding cognitivist theories

E-learners:
Learning characteristics; learning styles, attitudes, motivation,

Key stage 3, post-16, undergraduate, post-graduate and lecturers.
Developing a better understanding of the affordances and challenges associated with the use of technology in teaching and learning

Teaching:
Technology enhanced learning (TEL)
Working with teachers (CPD)
Teaching about computers/computing/computer science

The changing curriculum...
Cheap wine

The Telegraph

Tesco shoppers get £60 worth of wine for just £9 after glitch

Shoppers at Tesco have been able to bulk buy six bottles of £9.99 wine for less than the cost of a single bottle after a promotional glitch in the supermarket’s computer system.

Southampton Education School
Computing programmes of study: key stages 3 and 4

National curriculum in England

Pupils should be taught to:

- undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users.

- create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.

- understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.
Key stage 4

All pupils must have the opportunity to study aspects of information technology and computer science at sufficient depth to allow them to progress to higher levels of study or to a professional career.

All pupils should be taught to:

- develop their capability, creativity and knowledge in computer science, digital media and information technology
- develop and apply their analytic, problem-solving, design, and computational thinking skills
- understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns.
Developing a better understanding of the affordances and challenges associated with the use of technology in teaching and learning

Developing a better understanding:
Models
Constructs
Conceptual frameworks

Publication
Discussion
Debate

Thank you, John Woollard
J.Woollard@southampton.ac.uk