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SOLSTICE Conference 2015

# What Constitutes Effective use of Technology Enhanced Learning (TEL)?

**David Wooff, Edge Hill University**

Edge Hill University

4th June 2015

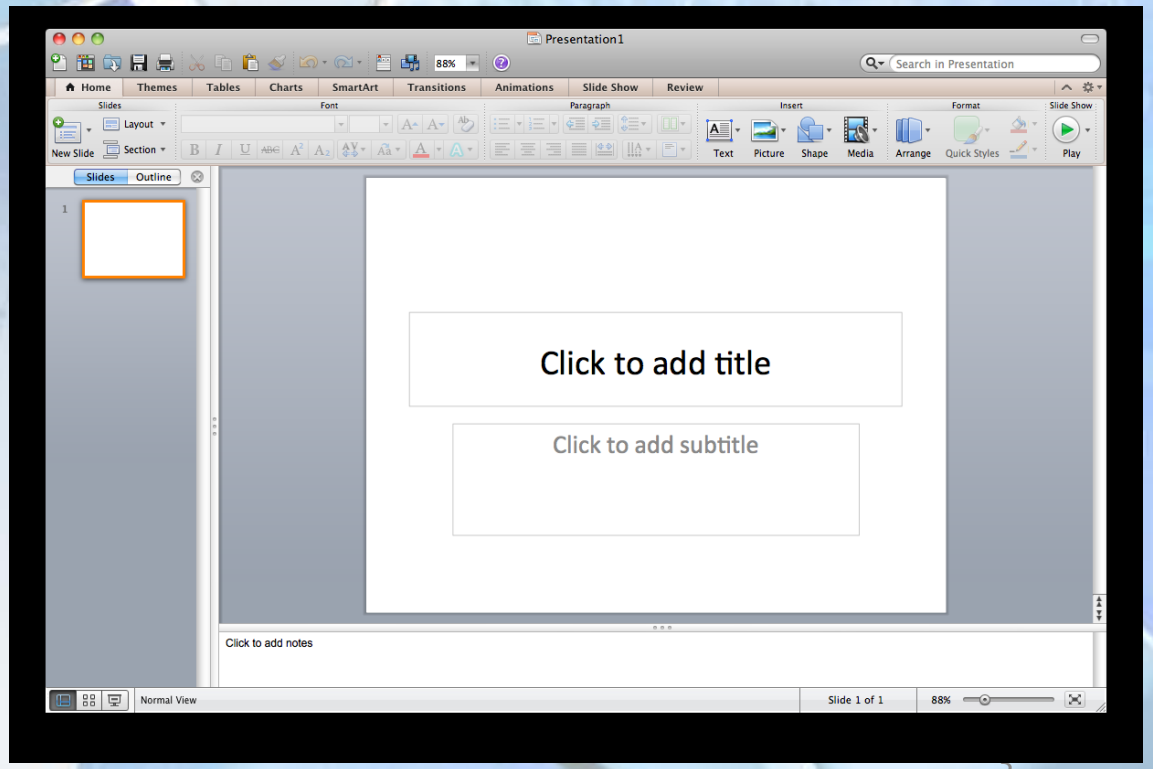
Technology Enhanced Learning

Technology Enhanced Teaching

# Technology Enhanced Teaching

Using technology to deliver something to a group of learners that does not require them to engage technologically with the content, examples include:

- PowerPoint Presentations
- PREZi Presentations
- Watching a Youtube video clip
- Keynote
- Slideshare



# Advantages

There are many advantages associated with technology enhanced teaching, some of these include:

- Work can be easily saved, modified and shared
- Can ensure uniformity between different groups of learners
- Lots of existing examples and exemplars which can be used as a starting point
- Studies have shown that it can increase learner engagement (Darling-Hammond et al.. 2014, Kirkwood and Price 2014, Marples et al. 2014)

# Limitations

There are a number of limitations and problems associated with Technology Enhanced Teaching:

- Hardware Problems – lack of access to rooms with projectors, or wifi access points for example.
- Software problems, including lack of compatibility and errors which occur switching from PC to Mac based presentations
- Issues with internet access (if it is a cloud based programme like Prezi)

# Limitations

Over use - often called "*Death by PowerPoint*"

…..arguably now replaced by "*Death by Prezi*" – or the seasickness effect caused by excessive zooming in and out Some presenters chose to Incorporate.

# Technology Enhanced Learning

Learning that takes place when the learner is required to use technology to access original material that furthers (or reinforces) their understanding of something.

# Advantages

There are many advantages associated with technology enhanced learning, some of these include:

- Information can be accessed in a unique way
- Due to the technological interaction some learners remember things better
- Possible to do, and experience, things that cannot be done in lessons by any other means

# Limitations

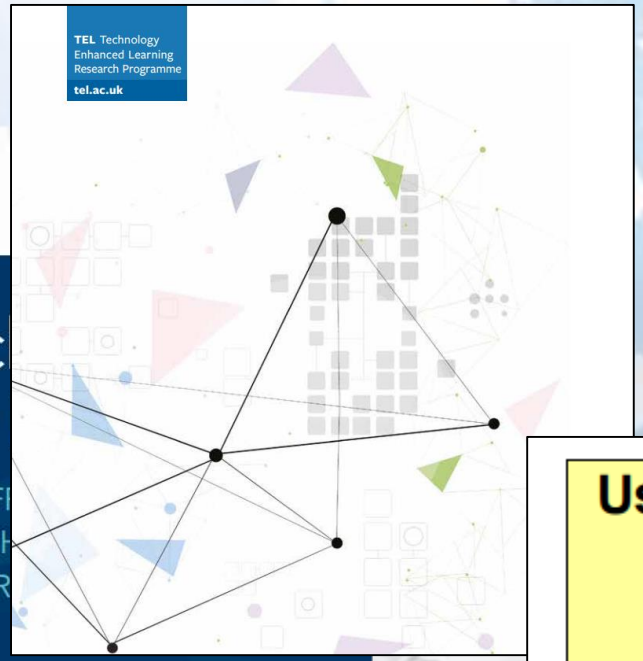
There are a number of limitations and problems associated with Technology Enhanced Learning:

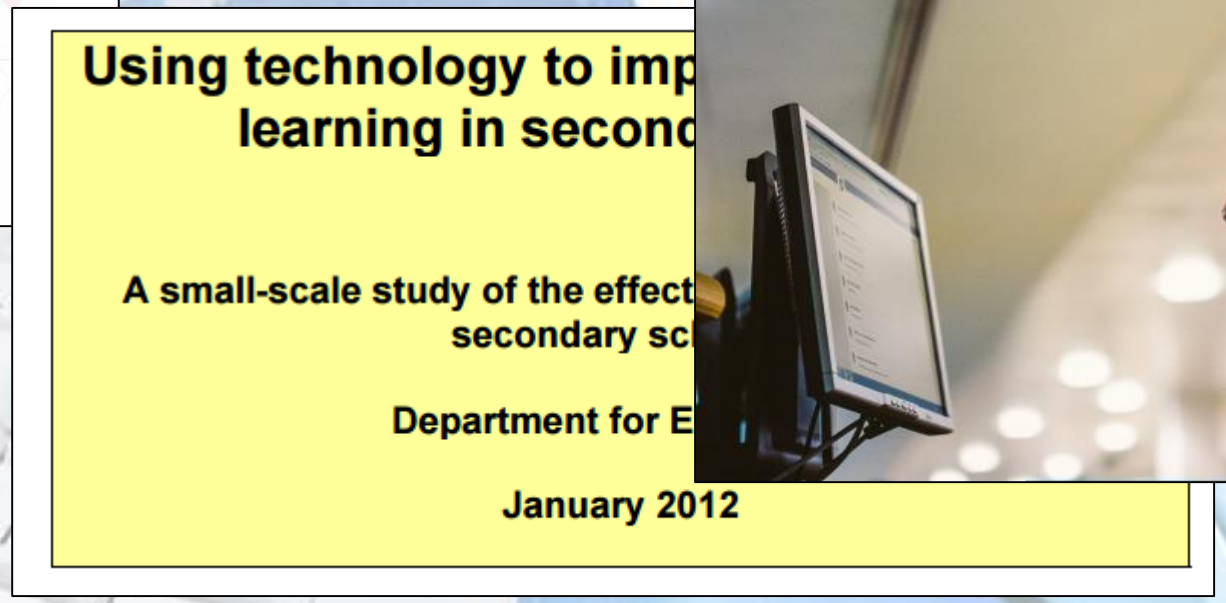
- Volume and cost of hardware and software – eg. have you got enough devices for each member of the group to have one?
- Bring Your Own Device (BYOD) approach – does everyone have access, and are they suitable?
- Reliability; problems with battery life and wifi connections
- Seen as a gimmick, and leaners get distracted from learning by the interaction with something technological
- Staff / Tutor knowledge and understanding to enable them to make best use of the technology

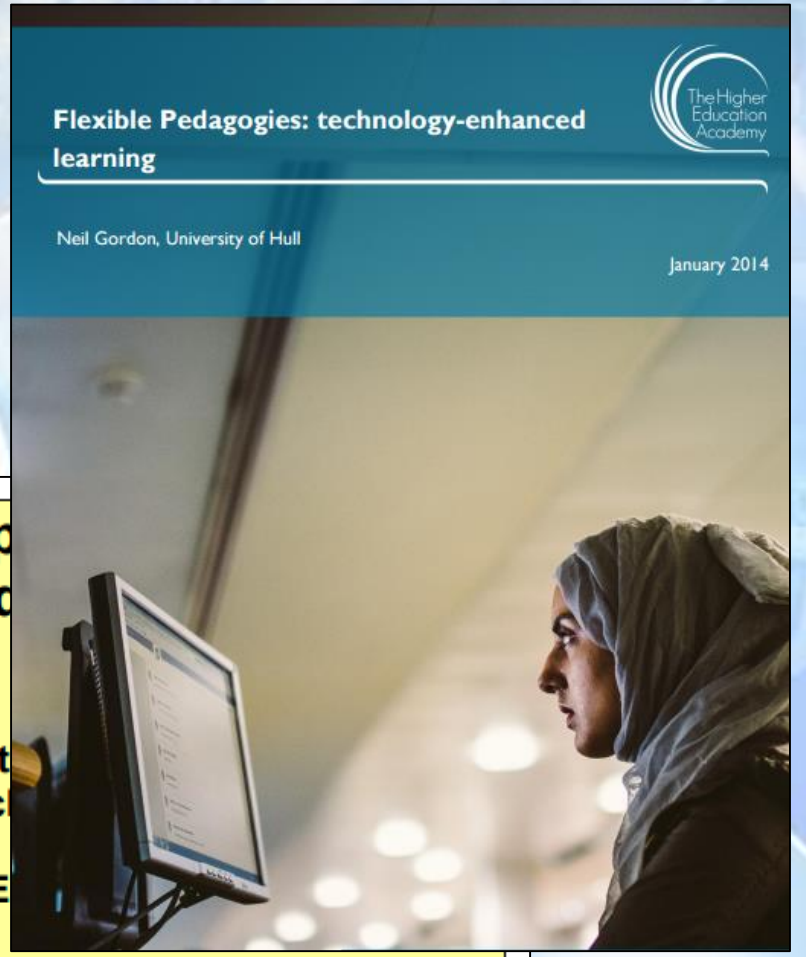
Sources of Information

Google Search I'm Feeling Lucky

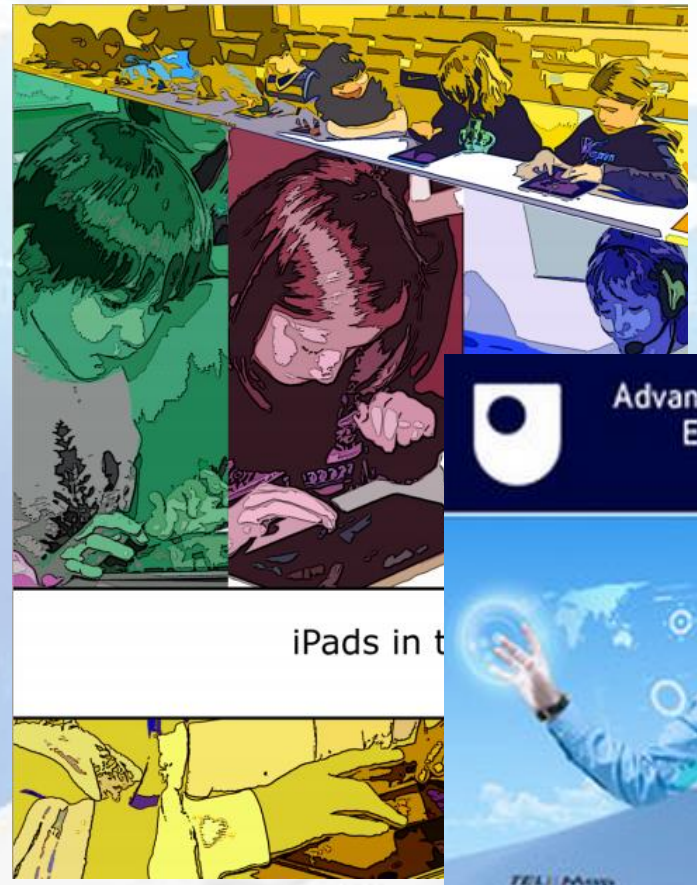
# Reports into Technology Enhanced Learning

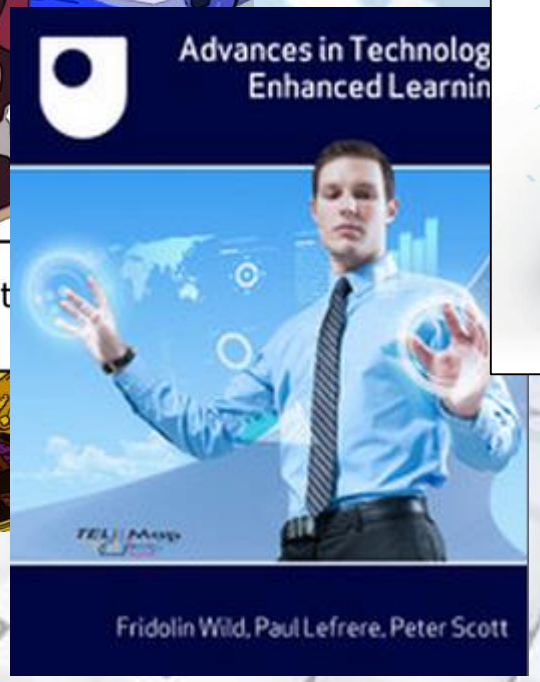


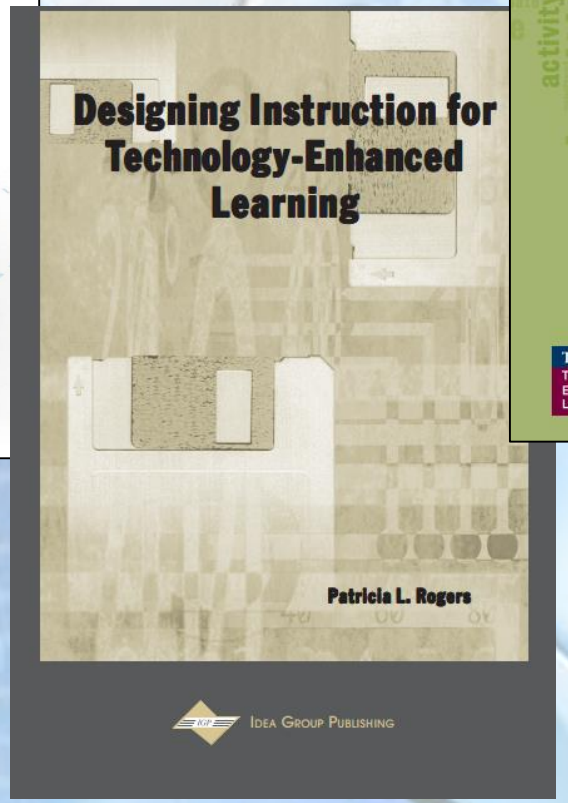


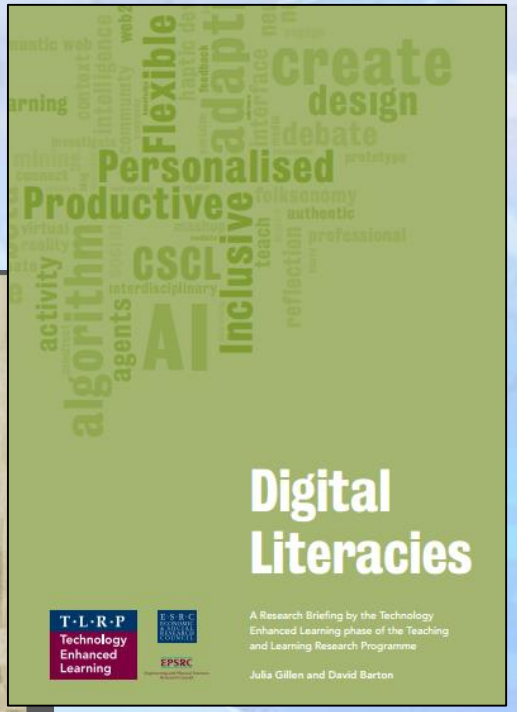



# Books on Technology Enhanced Learning

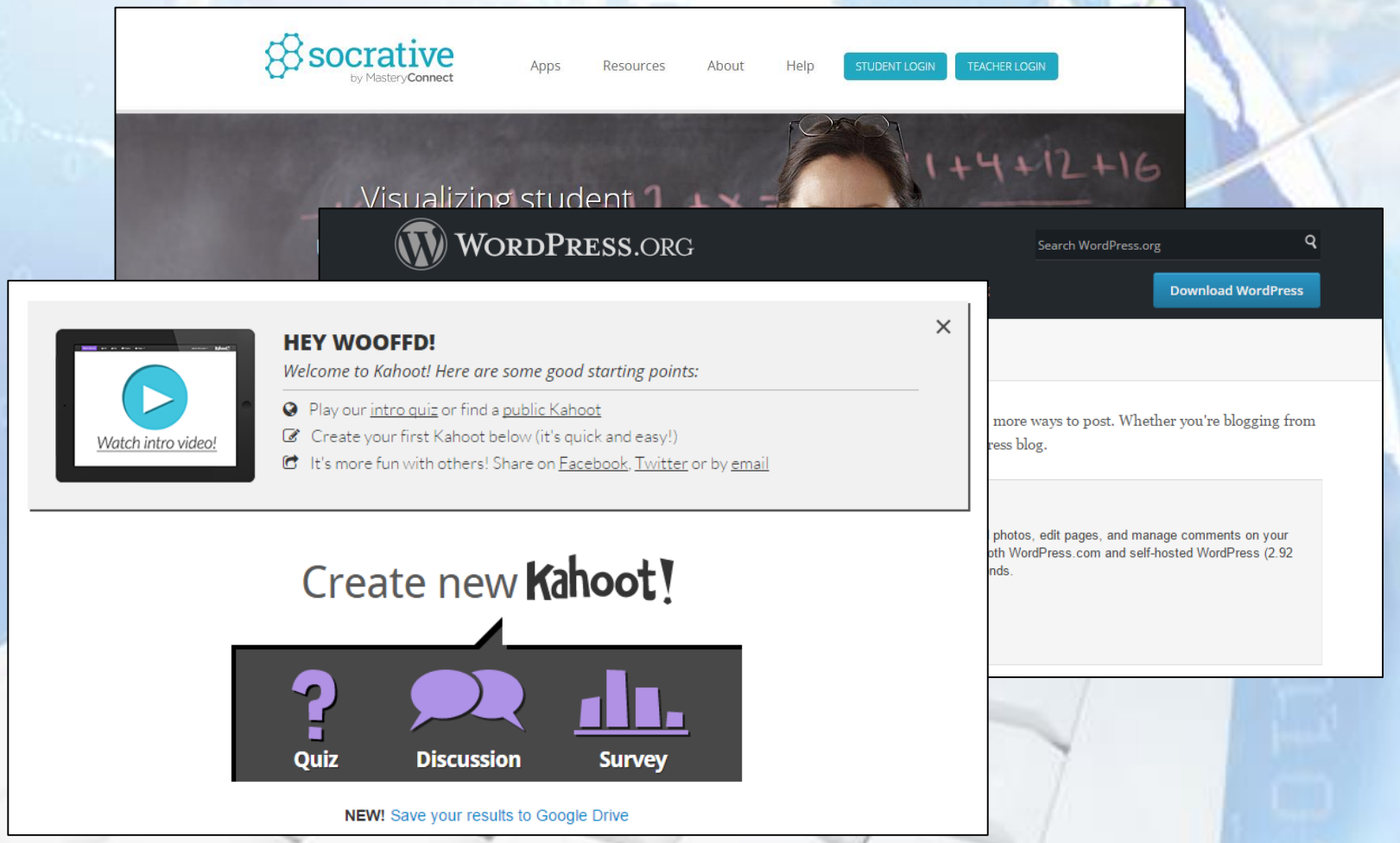




# Online Tools




- Quizzes
- Puzzles
- Presentation Software
- Repositories
- Blogs
- Survey Tools
- Drawing Packages
- Modelling Packages

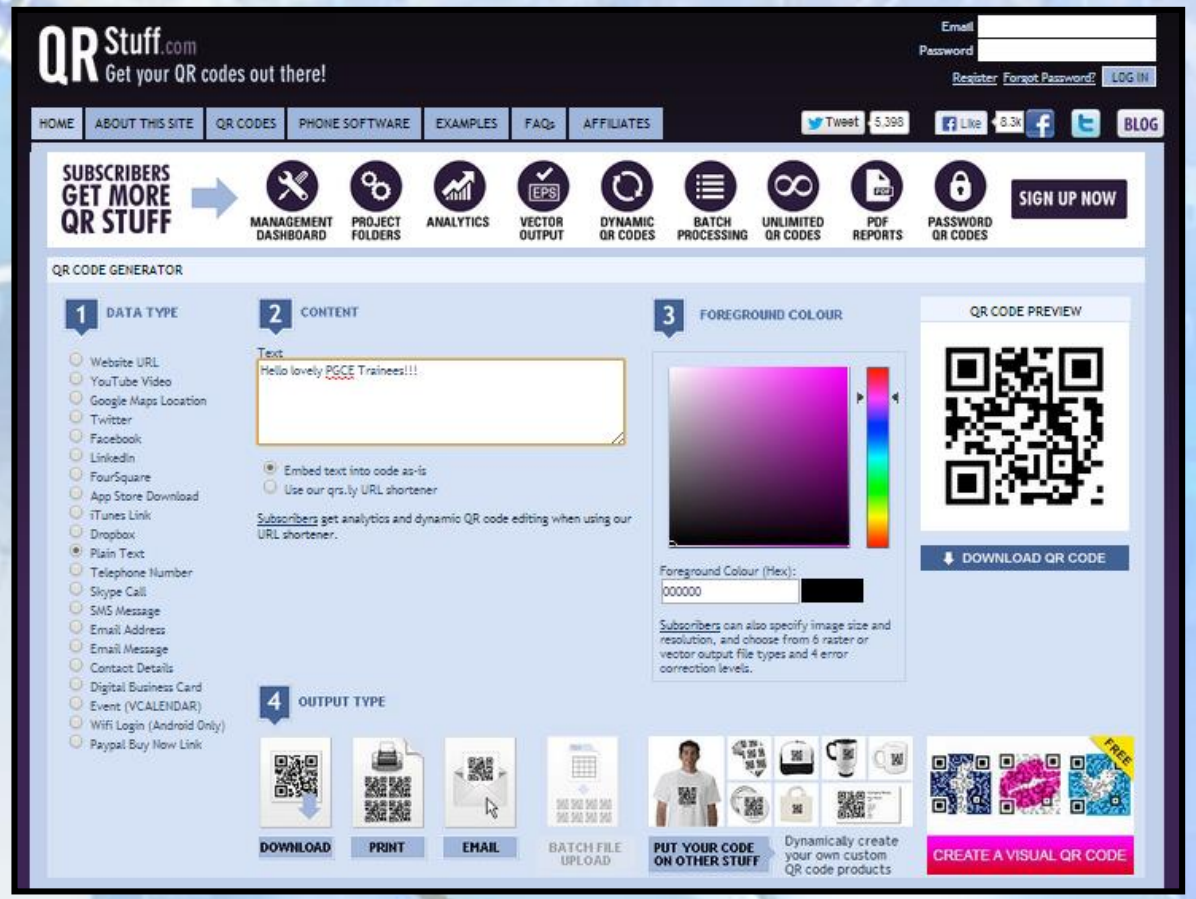
# Before we look at some specific examples:

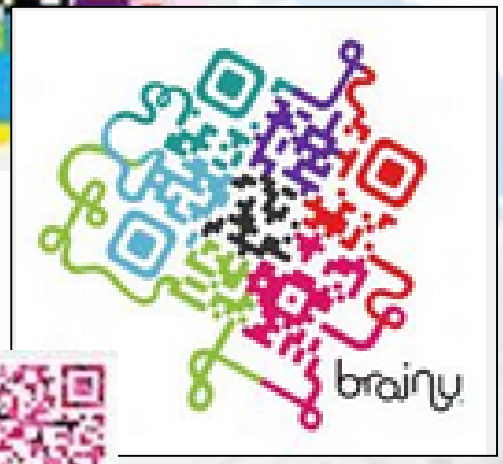
- **Not all Technology Enhanced Teaching or Learning tools will be of use to you – technology in this case is supposed to 'enhance' learning so if it does not – do not use it.**

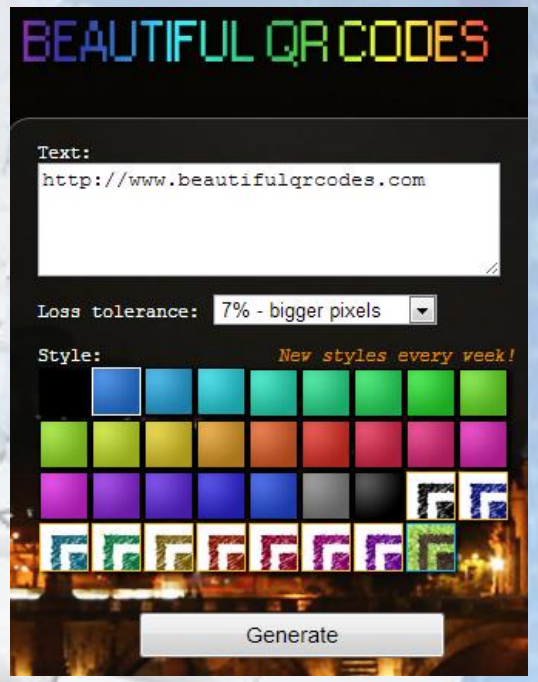
- **Technology Enhanced Teaching and Learning applications introduced today will be superseded in around two years time, sometimes sooner!**

# QR Codes:

- Quick Response (QR) Codes; originated from an industrial application developed by Toyota to enhance, and ultimately replace, barcodes,
- Well established and reliable,
- Multiple free QR Code generators for different platforms (iOS, Android, PC),
- Multiple QR Code Readers available free,
- Can work on printed or digital media

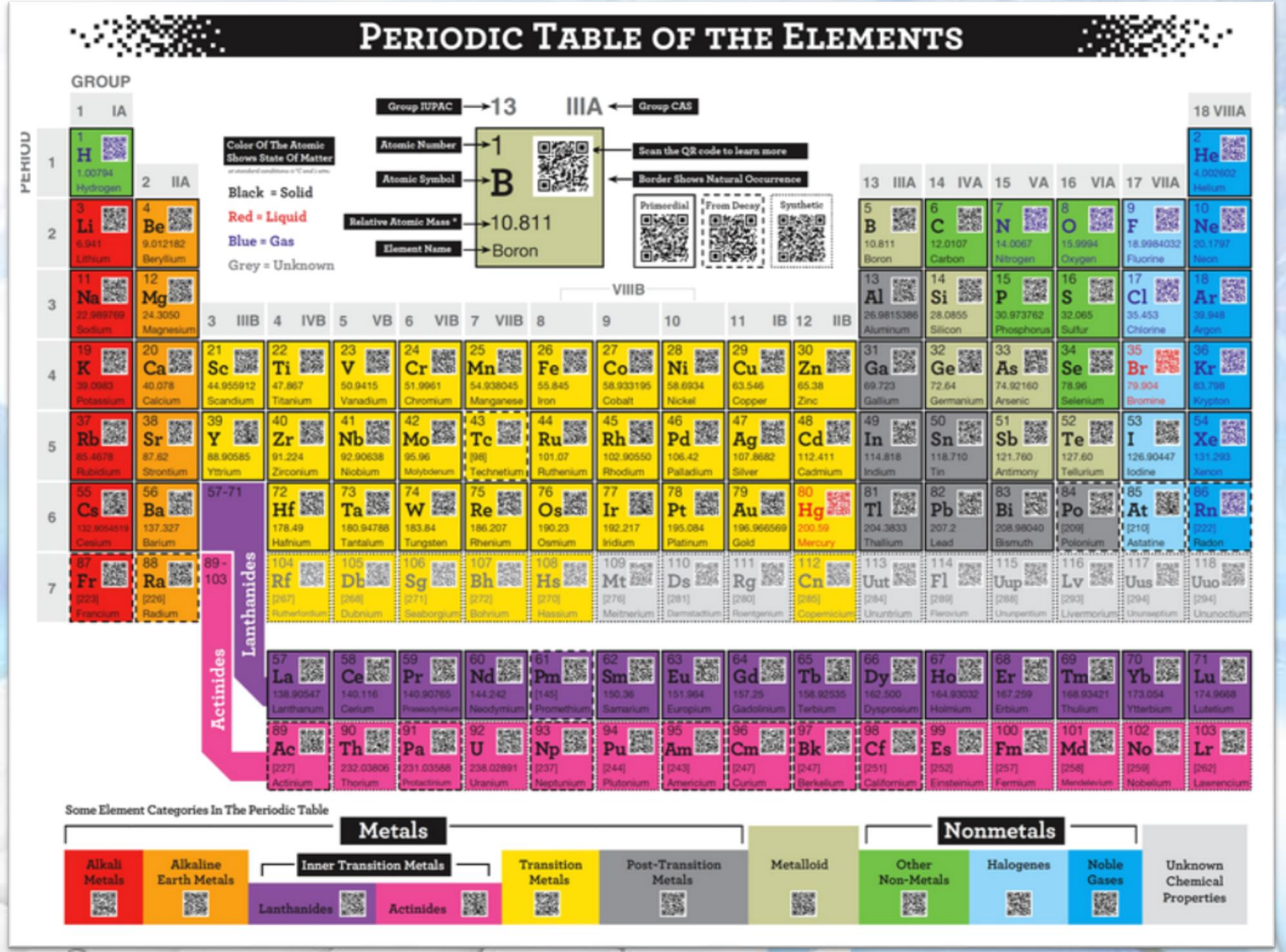







Name: _____ Date: _____

| Read Each Problem Carefully | Show Your Work | Scan To Check Your Answer |
|---|---|---|
| 27 dolphins were swimming in the ocean. 36 more dolphins joined them. Now, how many dolphins are swimming together? | | |
| 36 skiers were skiing down the mountain. 48 snowboarders were going down the mountain. How many skiers and snowboarders were on the mountain? | | |
| 57 musicians are in the orchestra. Some more musicians joined their rehearsal. Now, 93 musicians are practicing. How many musicians joined the rehearsal? | | |
| Some ducks were floating on the lake. 13 new ducks landed and started floating. There were 51 ducks floating in all. How many ducks were floating in the beginning? | | |
| 42 children tested for the their green belt. 21 children tested for their black belt. How many children tested in all? | | |

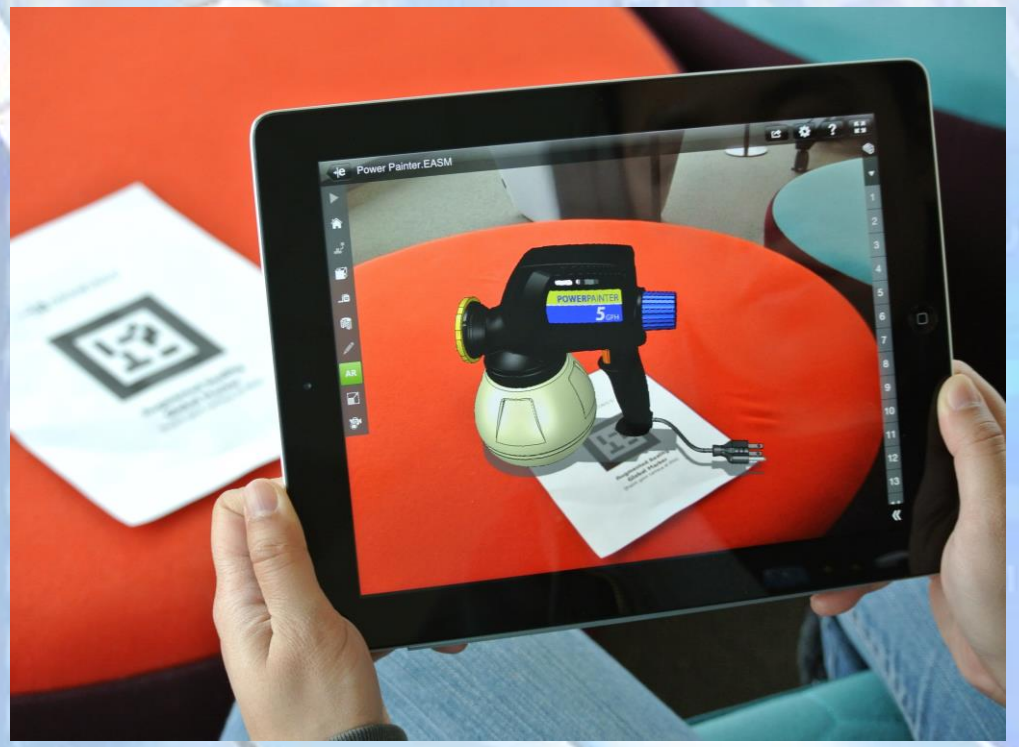

PERIODIC TABLE OF THE ELEMENTS
GROUP
PERIOD
Group IUPAC → 13 IIIA ← Group CAS
Atomic Number → 1
Atomic Symbol → B
Relative Atomic Mass * → 10.811
Element Name → Boron
Color Of The Atomic Shows State Of Matter
Black = Solid
Red = Liquid
Blue = Gas
Grey = Unknown
Scan the QR code to learn more
Border Shows Natural Occurrence
Primordial
From Decay
Synthetic
VIIIB
Lanthanides
Actinides
Some Element Categories In The Periodic Table
Metals
Alkali Metals
Alkaline Earth Metals
Inner Transition Metals
Lanthanides
Actinides
Transition Metals
Post-Transition Metals
Metalloid
Nonmetals
Other Non-Metals
Halogens
Noble Gases
Unknown Chemical Properties

# Example from Student Module Submission Work

# Augmented Reality

Geographical Trigger (a landmark or place)

Trigger Image



AURASMA

TED

ITT/CPD

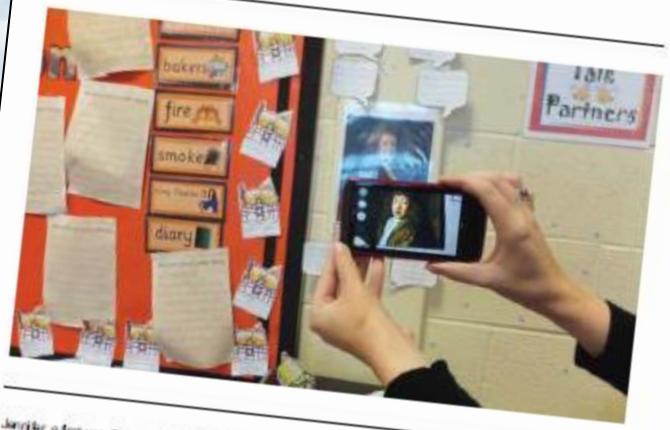
EXPLORING

# AUGMENTED REALITY

Dawne Bell and Rob Jones, Edge Hill University

In September's edition of D&T Practice (Issue 3.2012) David Wooff and I wrote about how staff were working with trainees on the Design and Technology BSc Initial Teacher Training course, using the notion of 'Design Fiction' as a catalyst for their design work, to explore the effective employment of Technology Enhanced Learning (TEL) such as the use of QR Codes, Prezi and Blogs. The outcomes had a series of positive impacts, not only on the trainee teacher's attainment, motivation and engagement but where trainees had engaged in aspects of the TEL whilst on their teaching placements in schools the impact upon the student's attainment and progress.

If you would like to know more about Augmented reality then the TED talk by Matt Mills (June 2012) is really inspirational. http://www.youtube.com/watch?v=fnZbq2Lpwl




Jennifer, a first year Primary Trainee PGCE trainee teacher (also at Edge Hill), is currently on her initial teaching placement and building upon work undertaken by her secondary peers has been exploring how she can use this emergent technology to enhance learning in her classroom to great effect. As Jennifer explains "The class have been exploring the Great Fire of London where we engaged the children through a design and make activity where they created individual models which we combined together to form the City of London. Having seen the work which is currently being undertaken by students in Secondary Education, using a picture of Samuel Pepys as the trigger image I was able to link this to a short video. So when the children view the display with a smart phone or tablet device the image comes to life and talks to them about the topic which helps consolidate their learning."

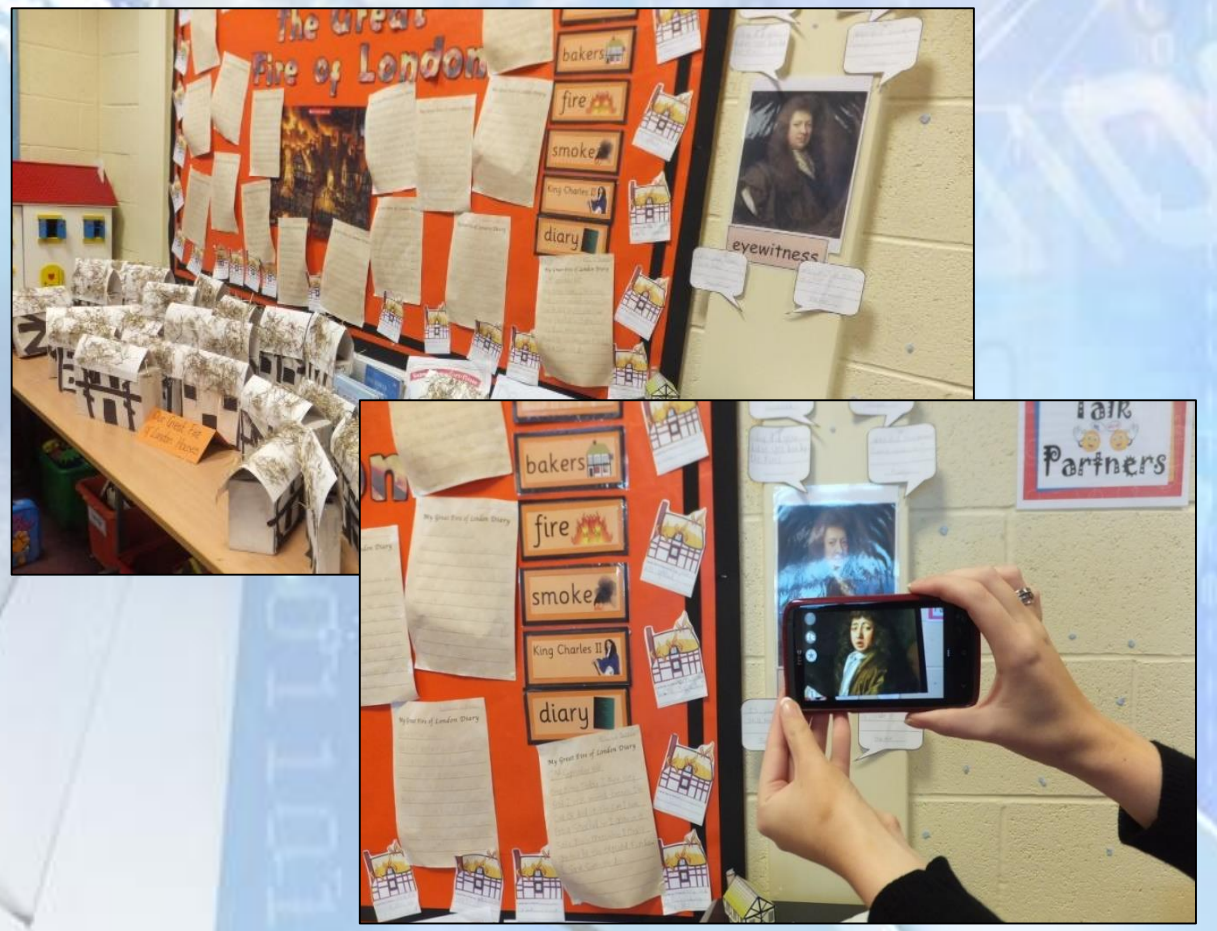
The next stage of development for the trainee's is to complete their work for this module and prepare for our first augmented reality exhibition, but also to prepare and explore further how TEL can be used successfully to positively impact and enhance the work they undertake in the classroom, whilst on their final teaching placements in the New Year.

Ideas our trainees are already working on are supporting the development of resources for differentiation, particularly EAL and subject specific phonics, instructional videos, homework tasks and Health and Safety.

Example of Aurasma tracker image

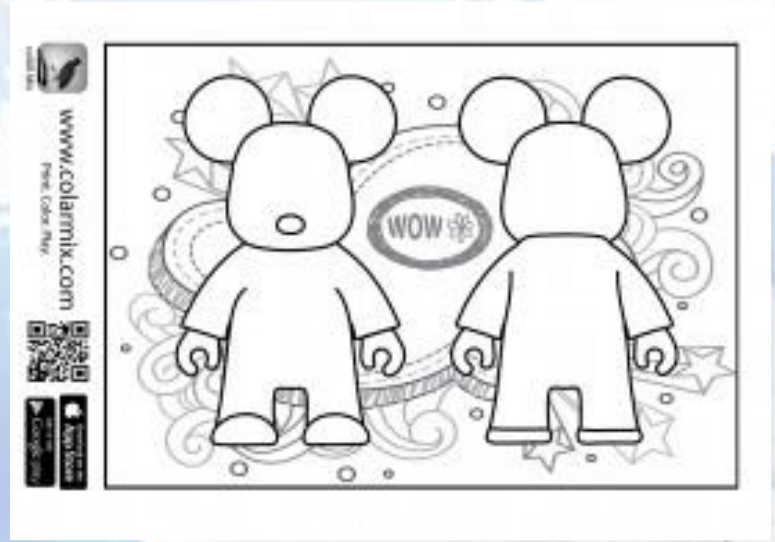
# Augmented Reality – Generate Your Own !

1. Down load Software
2. Determine Trigger (Place or Image)
3. Record or Obtain Video or Audio Item to link to trigger
4. Link Video or Audio Item to link to trigger
5. Upload Video or Audio Item to your own “channel”




Work by Jennifer Jones
Bleak Hill Primary School.

# Augmented Reality – Predefined



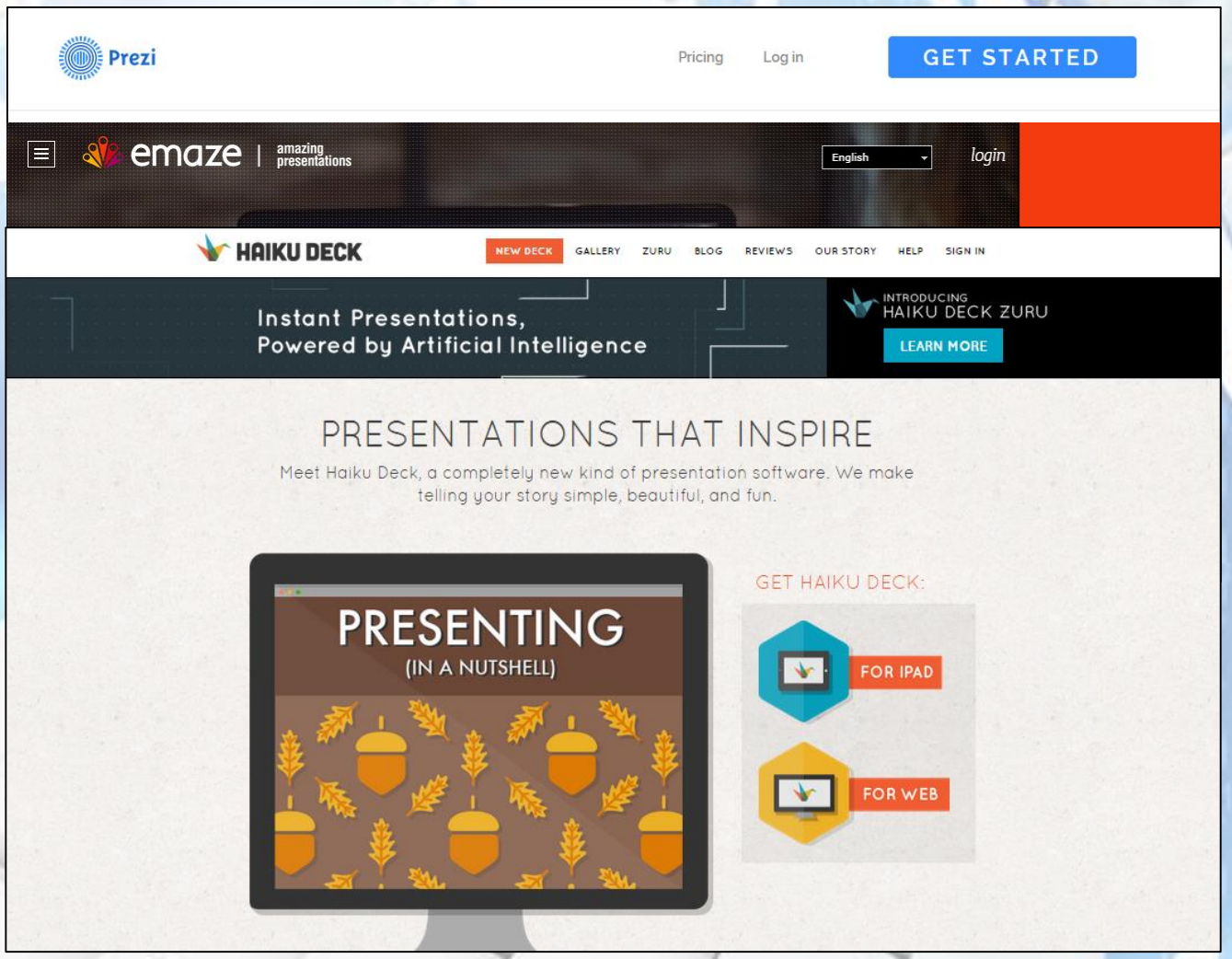
COLAR
DOT DAY!
DOT DAY
BRENDAN
COLAR
COLAR

# Augmented Reality

Setting up your own channel: more time consuming, more practice and more learning required on the part of the teacher – but potentially more flexible, more focused and more relevant to exactly what you want

Using predefined Augmented Reality: quick and very easy to use, reliable and repeatable – often have to find a way on incorporating existing outcomes into your learning environment.

# Technology Enhanced Teaching (Presenting)




- Why not use PowerPoint?
- What advantages are there in using a cloud based piece of software?
- Can all learners access the content?
- Is this the “bulk” of the teaching resource, or does it need to be supplemented with a handout ?
- How can learners access this information after the lesson /session?

# Final Observations

- **Practice – make sure you know how to use it yourself, what the advantages are and what the limitations are**
- **Rehearse in the same venue under the same conditions**
- **Check the hardware and software to make sure it works; batteries are charged, internet access is available and wifi connections work**
- **Ask yourself – does this enhance what I'm doing for the whole class and all learners within it?**

- **Have a contingency; what if it doesn't work?**

# Thanks for Listening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**Twitter:** @Destech2013

**References**


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