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

David Wooff, Edge Hill University
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
Reports into Technology Enhanced Learning

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**Does technology enhance learning?**

SOME FINDINGS FROM TECHNOLOGY ENHANCED LEARNING (TEL) RESEARCH PROGRAMME

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**Using technology to improve learning in secondary schools**

A small-scale study of the effectiveness of technology-enhanced learning in secondary schools

Department for Education

January 2012
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
**BEAUTIFUL QR CODES**

**Text:**
http://www.beautifulqrcodes.com

**Error tolerance:** 7% - bigger pixels

**Style:**
- How styles vary

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<table>
<thead>
<tr>
<th>Name:</th>
<th>Show Your Work</th>
<th>Scan To Check Your Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 dolphins were swimming in the ocean. 16 more dolphins joined them. Now, how many dolphins are swimming together?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 skiers were skiing down the mountain. 48 snowboarders were going down the mountain. How many skiers and snowboarders were on the mountain?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57 musicians are in the orchestra. Some more musicians joined their rehearsal. Now 93 musicians are practicing. How many musicians joined the rehearsal?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42 children tested for the their green belt. 21 children tested for their black belt. How many children tested in all?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Example from Student Module Submission Work
Augmented Reality

Geographical Trigger (a landmark or place)
EXPLORING AUGMENTED REALITY

Claire Hall and Nick Jones, Edge Hill University

In September's edition of DAT Practice (issue 3, 2012) David Wootton and I wrote about how we were working with trainees on the Design and Technology ECs 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, Pencils and Blogs. The outcomes had a sense of positive impact, 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 students' attainment and progress.

"I was impressed by how the use of technology could enhance the learning experience for students. This had a significant impact on the students' progress, allowing them to explore concepts in a hands-on manner that was engaging and effective. The use of QR codes and blogs provided a platform for sharing ideas and feedback, which was particularly useful in group work. The integration of these tools into the curriculum was well thought out, and the students were confident in using them. Overall, the use of technology in the classroom was a success, and I believe it will continue to positively impact the learning experience."
Augmented Reality – Generate Your Own!

1. Download 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
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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References

Background image sourced from: https://commorgland.files.wordpress.com/2012/11/technology1.jpg


Slide 2: Image 2 taken from: http://j3.bp.blogspot.com/-oclKs5kDzst/UEH1PcfxMJ/AAAAAAAAnyJ/6fyqSfMjWxw/s1600/1.png


Slide 10: Image taken from: https://www.google.co.uk/webhp?hl=en


Slide 12: Image 1 (free eBook) from: http://l3t.eu/tlug/images/2d.png


Slide 12: Image 4 (free eBook) from: http://www.sanjeshp.ir/phd/phd_91/Pages/References/educational%20technology/[Patricia_L._Rogers]_Designing_Instruction_for_Tec(BookFi).or.pdf


Slide 13: Image 2 (and blog host) from: https://wordpress.org/mobile/

Slide 13: Image 3 (online quiz tool) from: https://create.kahoot.it/


Slide 17: Image and Link: https://www.flickr.com/photos/periodicvideos/5915143448/sizes/o/in/photostream/


Slide 19: Images 2 and 3 from Magazine Available at: https://www.data.org.uk/resource-shop/magazines/?o=#mag

Slide 19: Click the TED logo: Matt Mills Video: http://www.ted.com/talks/matt_mills_image_recognition_that_triggers_augmented_reality

Slide 20: Images from Youtube clip: https://www.youtube.com/watch?v=2veUFpyNaeC


