



Digital Excellence Impact Case Studies

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Why I like to break from the “Linear Teaching”
mould

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“People assume that time is a strict progression of cause to effect, but actually – from a non-linear, non-subjective viewpoint – it’s more like a big ball of wibbly-wobbly...timey-wimey... stuff”

(The Tenth Doctor, Doctor Who, episode “Blink”)

Background

Science is not a linear process, so why is it often taught in a linear way? I think as educators we seek to simplify complex concepts, and this often reduces subjects into linear teaching patterns. I was asked to teach some historic forensic case studies to Level 4 students; **challenge 1 – how to keep science students engaged in historical content.** I had an interesting case study about wrongful conviction based on fabricated evidence, which was one of the cases that led to the formation of the Court of Appeal, and it was relatively locally based (Northumberland). Yet, gut instinct told me if I delivered this in a traditional, linear-style, lecture format, it wouldn’t matter how many discussion points or quizzes I inserted, many students would disengage.

I also wanted to nudge the students along the critical thinking path; if only there was some way to turn the case study into an exploratory learning adventure. Hands-up anyone who remembers such classics as *The Abominable Snowman*, *Space and Beyond*, or *The Lost Jewels of Nabooti*? Those of us of a certain generation will remember the thrill of the “Choose Your Own Adventure” books.

I had a good story, I had the data that was presented to the jury in 1879, along with the verdict and details of the aftermath. **Challenge 2 – how to turn a case study into a Choose Your Own Adventure style lecture.**

Approach

I can honestly say, I think Russell Smeaton dreads seeing my name pop up in his inbox! After plaguing Russell with lots of questions about how to use the available digital technology to turn the eccentricities in my head into a functioning interactive lecture session; I finally settled on using MS PowerPoint. **Challenge 3 – How to flip “Death by PowerPoint” into “Death by PowerPoint?”.**

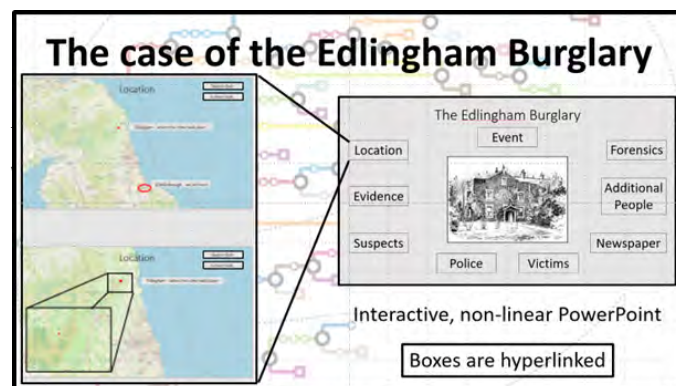


Fig 1. The opening slide of the case study is an image of Edlingham Vicarage, surrounded by hyperlinked boxes. Clicking on the “location” box will take you to the first location screen which shows Edlingham in relation to Middlesbrough. You then can choose to return to the main screen or take a closer look. The latter option then links to the second location screen with more detail of the landscape surrounding Edlingham.

Figure 1 illustrates three of the hyperlinked slides in the case study. Each outlined box is a hyperlink to a different part of the PowerPoint. In the session, the students are presented with an initial Crime Scene report, from that point onwards, I ask them what they would like to investigate. They choose the order and level of depth with which they will review the information. At the end, they decide on a verdict. Initial feedback was positive; however, students found the slides too “wordy”, and wanted more visuals.

I went back to the drawing board, completed ACE level 1 and 2, studied Youtube, and learnt how to make videos using PowerPoint. At this point I discovered that hyperlinked PowerPoints work well on a PC – they tend not to play well with iPads. In the short-term, I have converted the case-study into MS Forms format. The PowerPoint can be used in class and the student can complete at home via MS Forms. In the longer term I am looking at using Adobe XD, which can be embedded into Blackboard and still retain the linking functionality.

Outcomes

While the concept of the interactive case study worked, and student feedback was positive “Got brain thinking”, “Fun and interactive”, “Fun way to break down evidence”. Creating an interactive case study like this is a huge time investment! Classroom flipping takes additional planning, and while some students do engage better with the interactive elements, some students are disquieted by the novelty. Overall students really seemed to respond to the feeling of “being in control”. To that end, I have used the hyperlinked PowerPoint idea in other lecture sessions. It works particularly well if several different but linked concepts are being taught. Figure 2 is from a Fakes and Forgeries lecture; I give the students the choice of order in which each of these blocks is taught. The material within a specific block then progresses in a linear fashion and ultimately returns to this screen. Once the whole section is completed, we progress to the next set of blocks

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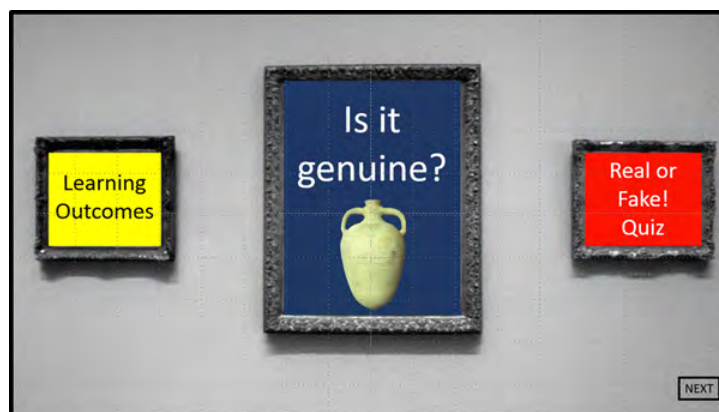


Fig 2. Each picture frame is a hyperlink to a different section of the PowerPoint. In class students rarely seem to want to know what the learning outcomes for the session are – by using this format, we can potentially skip that entire section, yet the information is still contained in the PowerPoint should a student wish to review it in their own time.

Whilst a full interactive case study may not be feasible for most lecture sessions, adding a little bit of student choice can be the gentle nudge that empowers someone to take more steps towards independent learning.