

# Preparing for the polygraph: A case study of staff-student collaboration in creating a technical teaching resource.



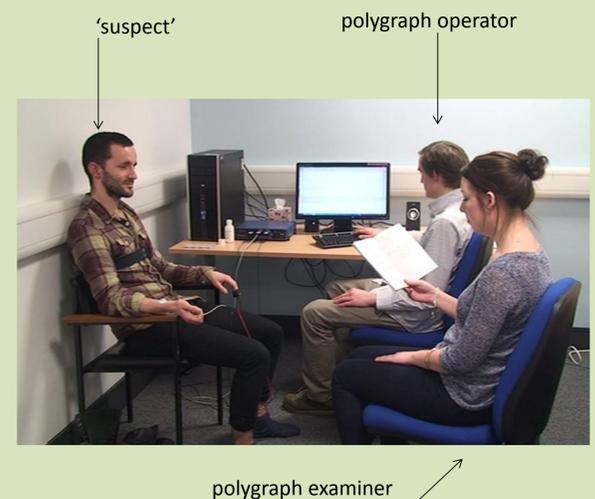
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## Abstract

This poster presents an example of academic staff, technical staff, and students working together to produce a tangible teaching resource to improve technical skills. Staff worked with current post- and undergraduates to produce a pre-lab video tutorial showing the set-up and running of a polygraph practical for forensic psychology. Some students studying forensic psychology have had experience of using the equipment in an earlier year, for others it is the first time they have used it. The subject and the equipment was introduced by staff whilst the set-up and completion of the lab was carried out and described by students. The students asked each other questions about the theory behind lie detection and offered critical analysis of the output from the practical. Students rated the video more positively than the standard introduction given previously. The video will now become a required pre-lab activity for students studying forensic psychology. Further advantages of the video are that all students now receive the same quality of introduction and there is no risk of information being missed or described in an ambiguous way after delivering the practical several times in a row. The potential benefits of students as partners are discussed.

## Background

This video is an adaptation to the changing demographic of students studying forensic psychology as an undergraduate module at Edinburgh Napier University. The study of forensic psychology includes analysing research and theory on the detection of deception. To encourage practical engagement and to make deception detection more interesting students take part in a polygraph (lie detector) laboratory class. When the polygraph lab class was first introduced to the module in 2010 there were 28 students enrolled on the module all of whom were studying psychology. In 2013 there were 67 students enrolled many of whom were reading criminology and had never studied biological aspects of psychology. This presented a challenge in keeping classes within their time limit but also ensuring that all students understood the equipment and processes involved. In a broader sense this video is also an adaptation to what Twenge (2013) calls 'Generation Me'. Twenge suggests that as a result of the growth of technology revolving around images students today are less able to read long passages of text and prefer instead to use videos, images, and short pieces of text. Twenge recommends increasing the amount of interactive learning, demonstrations, and lab activities in order to keep students engaged as well as using peer feedback. The use of students in the video under discussion was crucial to tackling all of the issues outlined here.



Polygraph operator attaching sensors for galvanic skin response to the 'suspect'.

## Method

To address the issues outlined above the forensic psychology module leader (first author) and the psychology technician (second author) recruited three students to help with the production of a 10 minute instructional video for future students studying the forensic psychology module. The student recruited as polygraph operator had significant experience of using the equipment for his Psychology Honours Project. It was important to involve both staff and students in the video. Seeing other students use and explain the equipment and output, combined with instruction from the psychology technician, and theoretical input from the module leader attempts to ensure that students viewing the video understand it from a number of perspectives. One student assumed the role of 'suspect', another assumed the role of polygraph examiner, and the third operated the computer and other equipment.

- The module leader introduced the video and reminded students of Ekman's emotional approach to deception.
- The polygraph operative set up and attached the equipment and explained what he was doing at each stage. He then calibrated the equipment.
- The equipment used was a Biopac Unit MP35 with a GSR transducer SS3L, a respiration transducer SS5L, and a heart rate monitor (electrode lead set SS2L).
- On a desktop PC the standard student set up for Biopac lesson 9 was used but the procedure was adapted to meet the needs of the module so the Biopac specified experiment was not used.
- The polygraph examiner asked two sets of questions. One set was based on the guilty knowledge test (Ben-Shakhar & Eliaad, 2002) whilst the second set used the relevant/irrelevant question technique (Howitt, 2011).
- The output was recorded using the Biopac software and then copied and pasted into Word to allow its inclusion in coursework writing.
- The video was produced using NCH Videopad Video Editor and Adobe Premier Pro.

## Discussion, reflection, and recommendations

The result of this project was a 10 minute pre-lab video for students to watch before attending their detecting deceit lab class for forensic psychology. The aim of this was to ensure that all students arrived at the class on an equal footing even though many of those registered would not have had the experience of using Biopac equipment before. A second aim was to provide the students with a resource that would suit their learning styles and abilities by accommodating some of the ideas suggested by Twenge (2013).

Although the video has not yet been used in the pre-lab context it was designed for, it has been shown to students who have taken part in the polygraph lab in the more traditional format. Feedback has been very positive with students saying that they preferred the video and felt it would have given them more confidence before beginning the task in class. They also found the ability to pause the video in key places useful.

Collaboration between staff and students to adapt teaching materials and methods.

Increased student competency and confidence.

Problems identified caused by the changing demographics of students.

Producing the video was an incredibly useful activity in terms of the attention to detail required in explaining equipment and adapting the module handbook for the next session. The necessity for detailed discussion between those taking part also increased everyone's understanding of the aspects of the lab class they normally weren't involved in themselves. The video now provides a lasting and consistent teaching resource which ensures continuity between classes and fairness to all students. It is recommended that staff-student collaborations are used more frequently where it is appropriate and also that those collaborations are made into sustainable resources where possible. The students taking part in the video expressed their enjoyment at being involved in making a teaching resource.

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## References

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