



CSI Drexel: Teaching Forensic Science Online

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Abstract

Online courses provide new challenges to instructors. It is important to engage the students and structure the course in a way which motivates them to work through the course material, without the usual face to face contact.

I am developing online forensic courses which are centered round a crime scene. In the first week the students watch the crime scene video, and then take ownership of solving the crime.

The key to this course structure is how the students work together and use the discussion forums to progress their investigation. Each week, new evidence is analyzed, suspects are questioned and the students interpret the results and decide how to proceed with the investigation.

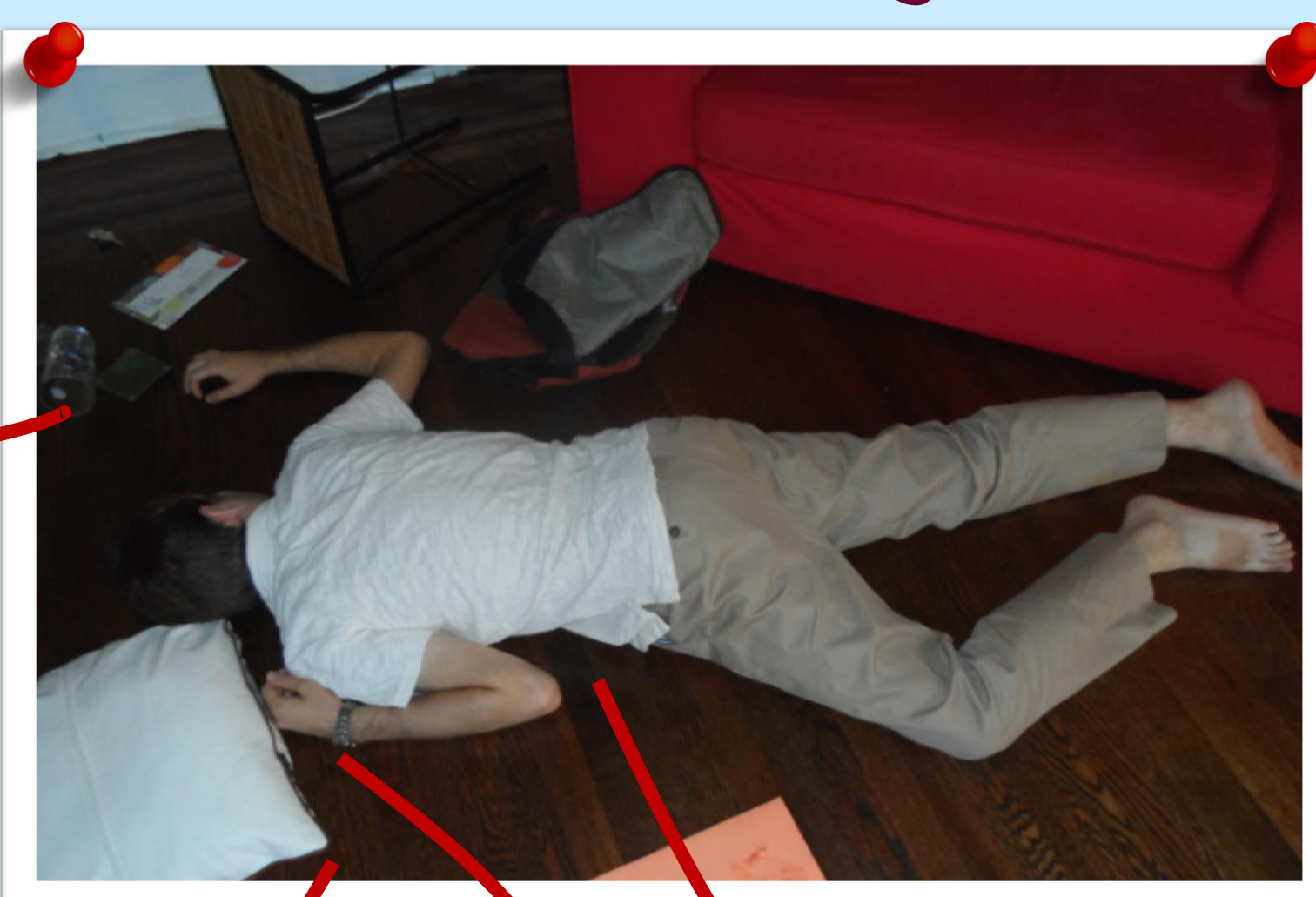
I have found that this course structure motivates the students to complete their coursework and makes them feel part of a class, even though it is conducted entirely online.

The crime

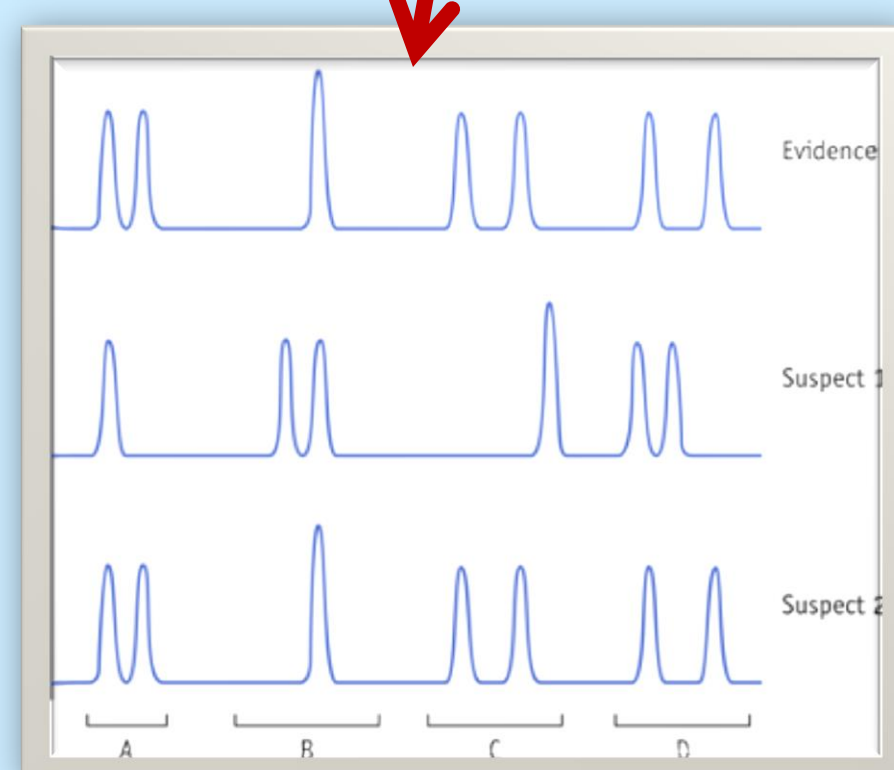
On the 31st of March 2013 at 9.00pm police and the Forensic Biology students were called to a suspected attack at an apartment on Crime Street in Careshire.

The Body

Fingerprints on the wineglass



Footprint beside the body



DNA under the nails



Victim's T-shirt

Course structure

The course is divided into two sets of 5 weeks, allowing students to examine two crime scenes. This allows exploration of two aspects of forensic science – identifying a killer, and identifying a victim.

Crime 1 – (Case shown on the left.) A young man has been found stabbed, and our job is to find out who killed him.

Crime 2 – Skeletal remains are discovered. They must be identified through analysis of the skeleton for features indicating age, gender, ethnicity and stature. Pollen analysis is also performed to date when the body was buried.

In each case, students are provided with “police” briefing reports to set out the initial facts of the case, and present the crime scene. The reports include information about witnesses – and potential suspects.

During the course, students work **individually** and **together** to solve the crime and learn forensic science.

- **Case workbook** – This is key to the assessment of the course. The workbook allows students to apply the knowledge they have gained from the lectures to our specific case. It allows a problem based learning approach which benefits the online learning environment.

- **Discussion forums** – Here, students may ask questions regarding the crime. The tutor can then post quotes from witnesses, or provide additional laboratory results, or respond in any way to the students’ questions, to guide them in the right direction regarding the case.

Prompt tutor responses in the discussion forum give students valuable feedback, allow them to move forward in the investigation, and foster engagement with the course material.

The discussion forum is also an important resource to allow students to post articles or websites which discuss real-life forensic cases, and share information about how they were solved – and suggest applications to our own crime scenes.

General applications to other subject areas

This problem based learning approach can be applied to other online courses, in different subject areas.

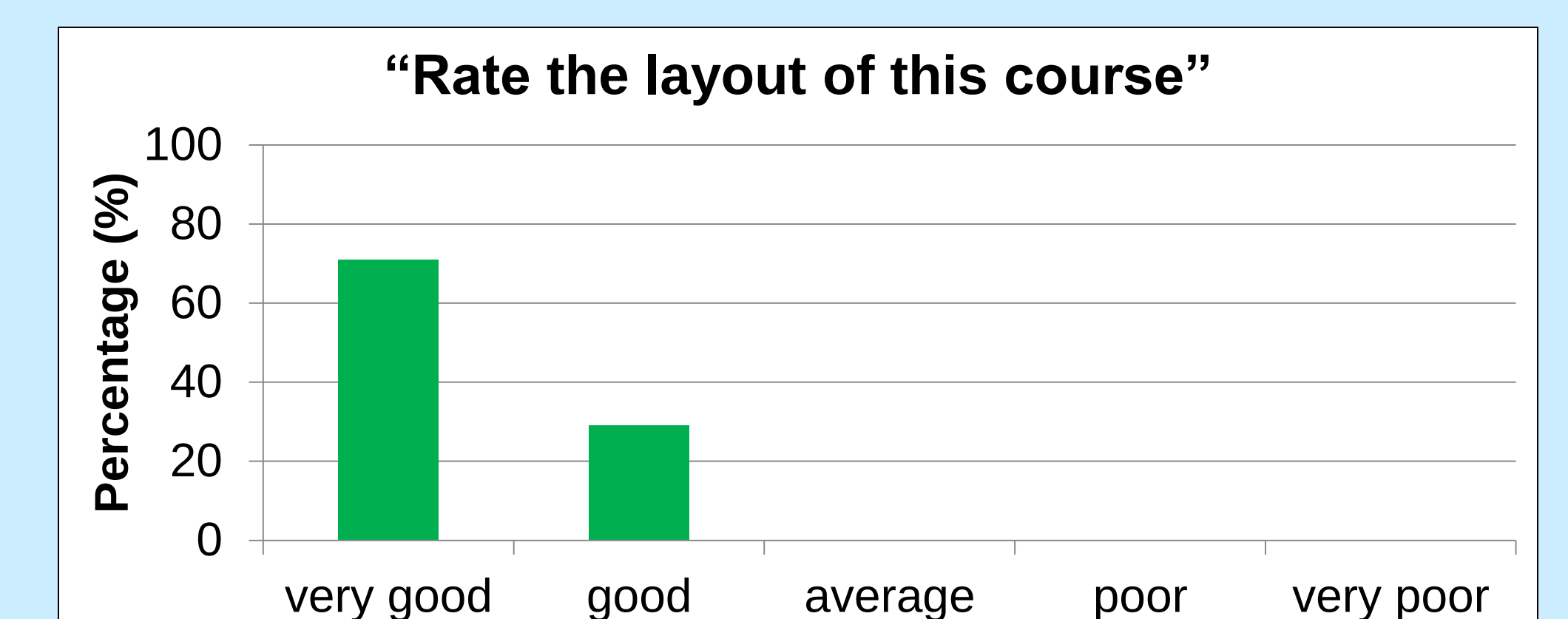
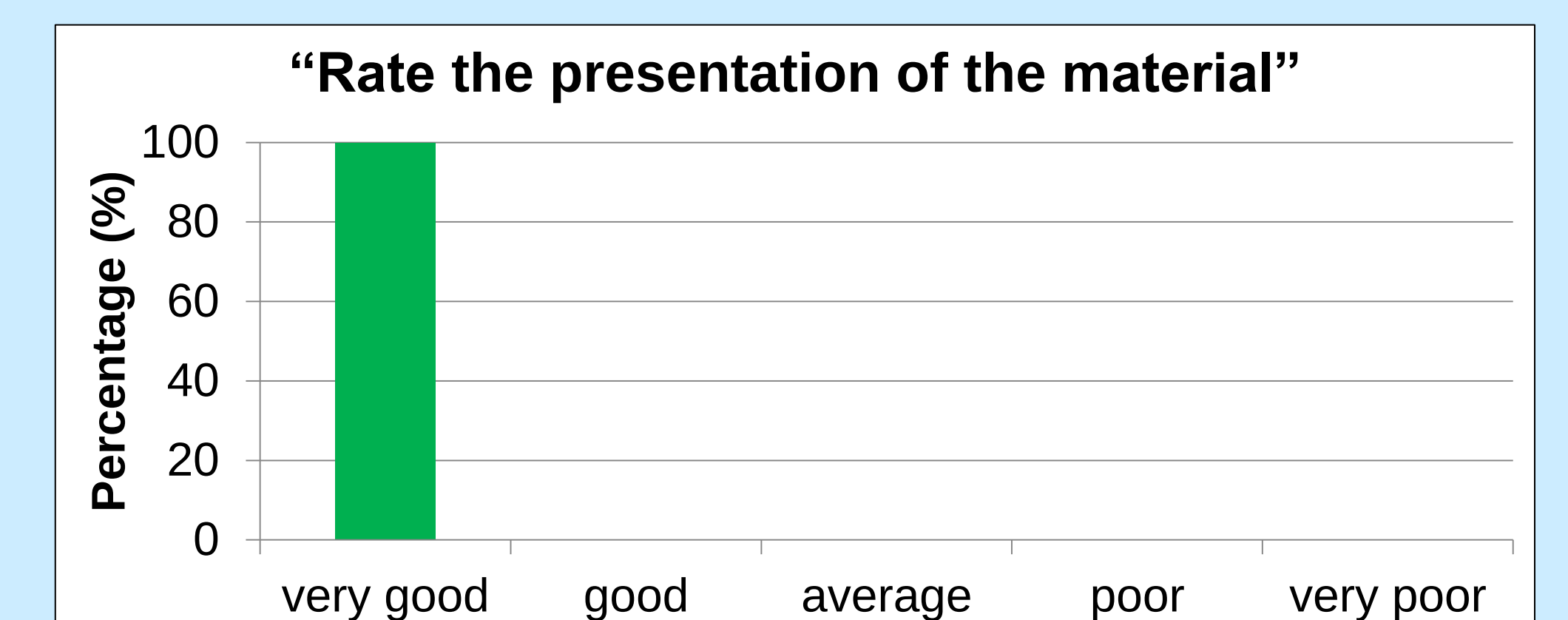
One of the many benefits of online learning for the students is the flexibility in when they participate in the course. But student engagement may suffer in the absence of face-to-face contact with one another and with the lecturer. It is up to the online tutor to design their course in order to make up for these problems. In this course, the **ongoing narrative** supports the lecture material and gives students a focus, uniting the different topics in a natural way.

The **integrated discussion forum** promotes communication with other students and the tutor, which is vital for a successful online teaching and learning experience. Active forum use is encouraged by the course format, which is based on student collaboration for their shared crime-solving task.

Student feedback

This online course format is currently running for the first time at Drexel.

I have previously run a 5 week course, using a similar format, at the Institute of Continuing Education, University of Cambridge, United Kingdom.



Student Feedback “I thought the topic was very interesting, and I liked the combination of presentations by our tutor, with the reading material and the active role of solving the case. The different topics were explained in very much detail.”