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A classroom-based game to support student learning of missing person and clandestine grave search techniques

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Abstract

The search for clandestine graves involves a multi-disciplinary approach using techniques such as foot searches, ground penetrating radar and cadaver dogs. In order to incorporate a practical activity into a taught session in December an alternative approach to fieldwork was required. Therefore, a clandestine grave workshop was developed to engage students in this topic in an interesting and hands on way that offered students a chance to utilise different techniques to search for and recover human remains giving them a chance to plan an approach and modify it as the search progressed and new information was released.

Key words

Missing persons; clandestine grave; forensic science; problem based learning

Introduction

A clandestine grave is defined as an unrecorded burial. It is usually shallow (40-60cm), rectangular and just large enough to deposit the victim. The search design is phased starting from the least invasive methods (desk top investigation such as aerial imagery) through to more invasive excavation techniques such as soil cores, test pits and mechanical stripping. The level at which it starts depends on the information available about the missing person. For example, a small search area such as a residential garden may start at the focused field stage where ground penetrating radar is used across the whole flat surface of the site and the ground is vented for cadaver dog inspection. The search can then lead on to excavation if these techniques produce a positive response. However, a large search area such as an open countryside will

need desktop investigation to determine where the search should be conducted before actually going out into the field.

In this paper, we describe a game that supports student understanding of the demands and planning needed for successful search and recovery of missing persons and clandestine burials. The game has developed over a number of years as we have learnt what does and does not work, for example, the length of time required to run the game against sustaining student interest or our assumptions about knowledge students did/did not have, such as map reading. This has led to the development of a game that could be used more widely either as a stand-alone indoor game at university level or linked to professional search activities and training.

Materials

- Map
- Techniques cards
- Chance cards
- Cost list for techniques
- Search log
- Scenario

Background

Students were given background information in an online lecture covering how a clandestine grave is defined, the phased approach to searching for clandestine graves and an overview of the techniques available for searching, to watch the week before they came into the classroom. They were also given a series of links to map orientation tutorials online (Backshall, 2015) and journal articles relating to techniques such as LiDAR (Wehr and Lohr, 1999; Devereux et al., 2005; Kalacska et al., 2009), cadaver detection dogs (Oesterhelweg et al., 2008; Cablk and Sagebiel, 2011; Jezierski et al., 2012; Alexander et al., 2015; Alexander et al., 2016) and ground penetrating radar (Pringle et al. 2012; Solla et al., 2012; Pringle et al. 2016). In the classroom, we allowed a three hour session which was split between testing the students' knowledge on the content of the online lecture and map reading through a quiz and introducing and playing the clandestine grave with them.

To prepare for the game itself, we annotated a map (Figure 1) with the whereabouts of items such as animal carcasses, human remains and decaying organic waste. We hid four bodies on our map in a variety of places ranging from out in the open to in a vehicle at the bottom of the lake. They were in a variety of states including intact, skeletonised and dismembered. However, this can be modified depending on the subject you are teaching. We made up some chance cards, which contained real-time information that may alter the search techniques in use, such as a change in weather, the expert being held up in court or gossip being heard about a suspicious activity in a specific area on the map. We also made up technique cards, which gave an overview of each techniques available (Figure 2), devised a list of how much each technique cost and decided a budget for the overall search and drew up a search log. Lastly, we devised a scenario; "A suspect has been taken into custody after being found walking down the footpath alongside the Club House (see map) with blood stained clothing and tools in his back pack. Under questioning, he admitted to killing

and hiding four human bodies in the surrounding countryside over the last 6 months. However, he will not disclose the location of any of the remains. Your role is to plan and execute a search for these remains using the techniques available to you".
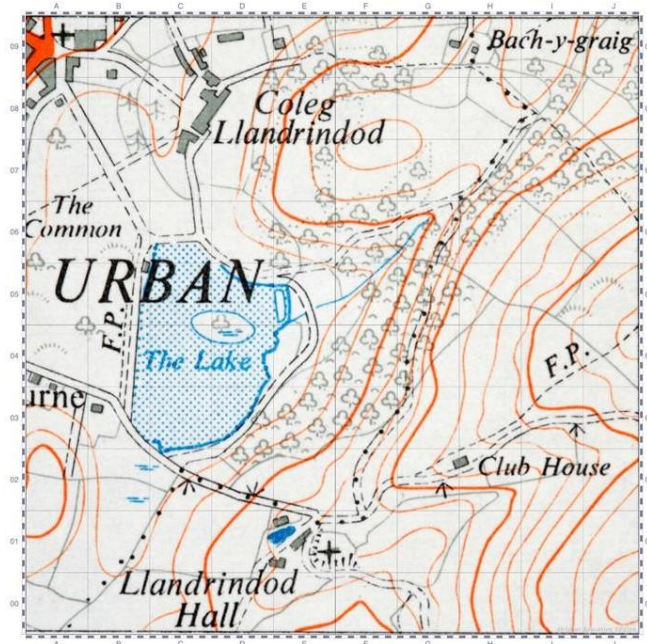

Figure 1: Map of search area used in clandestine grave game

Figure 2: Example of the technique cards given to students to help them choose which ones should be used in their search. Costs are included on these ones but can be omitted depending on the objectives of your class.

Instructions for the game

      For Students:

- Split the class into small groups of around 3-4 students
- Provide the class with a scenario
- Provide each team with a map
- Provide each team with technique cards and a cost list
- Provide each team with a search log

For the Instructor:

- Sit so that different teams can come to you but your map is hidden from view
- Have chance cards on the desk so that each team can take one when they come to search the map

Read out the scenario to the class. Outline what they have been given (map, technique cards and search log), any costs associated with techniques and if there is a budget for the overall search. Ask the class to develop their search by:

1. Thinking which level of investigation the search should start at considering the information they have.
2. Assessing the terrain and thinking about what techniques would be suitable.
3. Planning how they would carry out their ideal search but also thinking about a contingency plan.

Once the students have decided where to start their search, they can approach the instructor and ask to search a certain square, for example J6, with their chosen techniques, for example cadaver dogs. Our students are told they can only search one square at a time, but if you wish the game to be shorter, you may choose to search two or four at a time. They must also take a chance card, which may alter their search success, for example, if it is snowing the dogs will be less efficient. The instructor then responds according to what is in that square, if anything, for example, they know there is an animal carcass to the edge of that square so they can state that dogs respond with a positive signal and you find a body. The students must then ask an Anthropologist to determine if the remains are animal or human. Therefore, the search continues with students re-adjusting their plan with each new piece of information.

Results

We have a board with team names and running totals of bodies discovered by each to bring a little competition into the game. There are also software, such as Socrative available that would allow you to do this on a screen. Socrative is also useful for conducting the knowledge quiz at the beginning of the session. The winning search team is either the first team to find all the bodies within the time limit or the one who has found all the bodies and spent the least of their budget. The budget and costs for each techniques are determined by the Educator prior to the game and will depend on which country or region it is being taught in. Costs are optional and are not required to play the game.

Optional variations for the activity

Students can play the part of the serial killer disposing bodies as well as the searcher. If you make up some disposal techniques cards for the bodies (Figure 3), it is possible that your students can spend part of the session devising a plan for how and where they would dispose of the bodies. This may increase understanding of how and where to look for the bodies in the next part of the session and thus speed both activities up if you were limited to a smaller amount of time. Chance cards can also be constructed for this part of the game to give real-time information on factors that might influence their plans for deposition. For example, people turning up to the location.
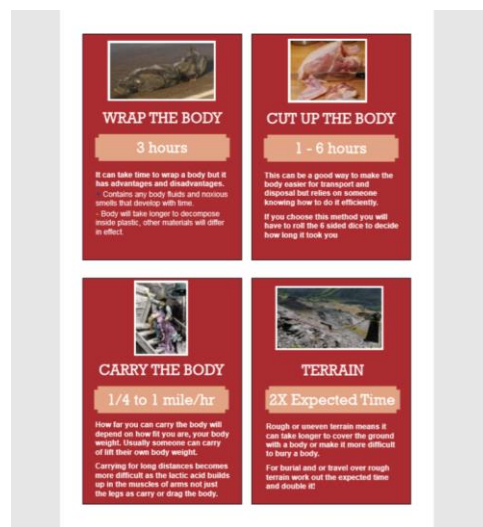
Figure 3: Example of the disposal cards given to students to help them determine how to dispose of their bodies. Times have been included to encourage understanding of deposition time as well as which disposal would be better in different terrains.

Conclusion

The clandestine grave game was developed in response to wanting to teach students about the multi-disciplinary subject but not having the time to cover all techniques in the field. Students write their experience up as a report outlining their search strategies and how they were executed. Student feedback stated that the game was enjoyable, fun, was engaging as well as an interesting way to learn about the topic, very interactive, challenging, better than a lecture, helpful and gives real world experience. In conclusion, it is a workshop that can be adapted to the requirements of individual educators and give students an engaging structure in which to learn about search techniques and how they are implemented in the real world.

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