

## Human Factors Gamification Workshop – Delivery Guide

### Materials

- Name labels and marker pen
- Pens and large post-its
- Laptop and charger
- 3x copies of laminated, annotated Bomb Defusal Manual (for facilitator, “Experts”, “Observers”) and 1x laminated session plan
- Device to play background noise (e.g. Alexa, Bluetooth speaker)
- Drape/sheet and 2x drip stands
- Box of surgical masks
- Adjustable table lamp
- Materials for non-medical tasks (e.g. pack of cards, ping pong ball + mug)
- Food/snacks

### Structure

- **Introduction (0-15 mins) – 15 mins**
  - All write name labels
  - Hand out post-it notes and ask the students to:
    - Rate their understanding of Human Factors theory /10.
    - Rate their understanding of the application of Human Factors theory to clinical practice /10.
    - Write down the first words that come to mind when they think about “Human Factors” (min 3, max 10).
  - Introduce the workshop:
    - We are going to be playing rounds of the puzzle video game “Keep Talking and Nobody Explodes”. Has anyone played this game before?
    - In essence – one player (the “Defuser”) is trapped with a ticking time bomb they must defuse. The other players are the “Experts” who must give the instructions to defuse the bomb by deciphering the information found in the Bomb Defusal Manual. For each round, we will also have 3 observers.
    - The “Experts” can’t see the bomb (which is on the laptop screen) and the “Defuser” can’t see the Bomb Defusal Manual.
  - Ask the group to read p1-4 of the annotated Bomb Defusal Manual.
  - Show the group the laptop controls to the bomb – how to open modules, how to rotate the bomb etc.

- Explain that we will rotate around so that over the course of the morning/afternoon, everyone will have a chance at different roles. There are no individual winners or losers, as the game is all about teamwork.
- **The Basic Game (15-75 minutes) – 60 mins**
  - The aim here is to familiarise students with the game, put students under some time pressure, and develop their communication skills.
  - Settings: “Free Play” mode without “Needy Modules”.
  - Aim for x6 10-minute, 3-module bombs.  
NB: will likely take less than 60 minutes, as bombs may be solved quicker, tick faster, or may explode from errors.
- **Break (75-80 minutes) – 5 minutes**
- **Variations (80-140 minutes) – 60 minutes**
  1. “Emergency Department” Scenario  
A scenario with background noise – play a loud background track of another group solving a different bomb.
  2. “Operating Theatre” Scenario  
A scenario where the “Experts” and the “Defuser” are separated by a drape/sheet, and all are wearing masks. Lights are lowered, aside from a central light source.
  3. “Medical Emergency Team” Scenario  
A scenario where “Experts” and the “Defuser” set alarms on their phones – for 1 min, 2 min... etc. When they silence the alarm, an Observer will take them to the side and ask them a non-medical question or task which they must do before returning to the bomb (i.e. answering a “bleep” on call – see Appendix A).

20 minutes per variation - to include a more significant debrief/reflection.  
How did these additional challenges make everyone feel?  
How did they feel this affected their ability to perform the task of defusing the bomb?
- **So What’s The Point? (140-180 minutes) – 40 minutes**
  - Explain the intended applications of the 3 variations to clinical practice (5 minutes).
  - Present Human Factors teaching slides (25 minutes).
  - Students to complete end-of-session survey (10 minutes).
- **[Post-Session (1 month)]**
  - Students to complete follow-up survey with prize draw (3x £15 Amazon e-voucher).

## **Appendix A – Task List for Variation 3**

1. Count backwards from 53 in 4s.
2. Hop 4 times on the left leg; then 3 times on the right leg; then 1 time only on the left leg.
3. Throw the ping pong ball into the mug.
4. Answer this riddle: “I have branches but no fruit, trunk or leaves. What am I?”  
----> A Bank.
5. Find the jack of hearts in a pack of cards.
6. “Tell me how many vowels and consonants there are in your full name”.
7. “Give me 5 countries or continents beginning with A”.

All tasks have to be completed; participants can “recruit” team members to help, but they also cannot return to the bomb until the task has been completed.

## **Appendix B – Timings**

### AM Session

09:00 – 09:15	Introduction
09:15 – 10:15	The Basic Game
10:15 – 10:20	Break
10:20 – 11:20	Variations
11:20 – 12:00	So What’s The Point?

### PM Session

13:00 – 13:15	Introduction
13:15 – 14:15	The Basic Game
14:15 – 14:20	Break
14:20 – 15:20	Variations
15:20 – 16:00	So What’s The Point?