

**Dr Jonny Holland
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Game on!

**Using Gamification to increase access
to Human Factor Skills and Knowledge**

 International Forum on
QUALITY & SAFETY
in **HEALTHCARE**
GOTHENBURG



Disclosure Statements

Financial:

- *Gill Smith is Managing Director of Kaizen Kata*

Non financial:

- *Gill Smith is a member of IHI Faculty*
- *Jonny Holland has no relevant financial or relevant nonfinancial relationships to disclose.*



Gill Smith
Quality improvement and human factors professional, former QI Lead NHSCT and virtual cycling gamer!
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Jonny Holland
Anaesthetist and Clinical Lead for QI Lead, NHSCT and avid PC gamer!
@jonnyholland

Session Objectives

- Describe how human factors is a significant contributory factor to patient safety incidents
- how the principles of Gaming can be adapted to human factor skills development and learning
- Share with you the how we implemented a Gamification Strategy with the aiming of impacting positively on behaviour change and support getting 'up stream' of patient harm
- Immerse you in our Game! You get to travel with Joe the patient on his healthcare journey and experience human factor impacts

Live Poll – How would you describe Gamification?

www.slido.com

Code:
#6880917



Defining Gamification

- NOUN

- *gamification* (noun)

the application of typical elements of game playing (e.g. point scoring, competition with others, rules of play) to other areas of activity, to encourage engagement with a product or service.

"gamification is exciting because it promises to make the hard stuff in life fun"

The Context

- Failings in human factors, are a significant contributory factor in accidents/incidents in aviation, energy and healthcare.
- 80% of serious adverse incidents in healthcare are related to miscommunication in transitions of care (Source: IHI)
- Negative team behaviours have a significant impact on the quality and safety of healthcare. The Royal College of Surgeons (UK) Survey 2017, found that such behaviours account for 71% of medical errors, 67% of adverse incidents; costing the NHS circa £13.7 billion annually.
- There is no 'one thing' that will address human factor failings- it requires multiple interventions; including developing human factor awareness and skills to influence behavioural change.

Gaming in numbers

- 3.9 billion smartphone users worldwide (Newzoo)
- Nearly 83 billion mobile games downloaded in 2021 (AppAnnie)
- 134 billion USD in game revenue and 93 billion was mobile (Statista)
- Puzzle is the biggest genre for downloads (Statista)
- 50 % of mobile gamers are over 34 (Mediakix)

- On average
 - 20.4 mins/day Male
 - 25.6 mins/day Female

Psychology of gamification

- Gamification of learning – complete task to unlock next stage
- Apply gaming mindset to life
- Intrinsic versus extrinsic motivation for learning
- Creating that just one more go
- Small incremental positive feedback
- Engage audiences, solve problems and have fun

Why Gamification

- Challenging for staff access HF intro sessions
- Potential for wider audience – clinical/
non-clinical, hospital and community
- Easier access on personal devices- time and
location
- Personal experience of digital content
- Game based learning

HF app

The Challenge...reaching all those who can benefit from human factors training

The Aim....deployment of game via mobile phone

The Partnership....NHSCT and School of Computing, University of Ulster

Our Approach....QI methodology and Agile development. Underpinned by a Gaming Strategy (co-designed). Design suitable for scale-up and spread.

Our Measures of impact....Psychological and Behavioural and proof of concept

Our Timeline

- ✓ Oct 19 Project start-up
- ✓ Oct 19-Jan 20 MDT team formed and co-design workshops on gaming strategy
- ✓ Jan 20-Jul 20 Game characters & missions developed around DuPont's Dirty Dozen
- ✓ Nov 19-Mar 20 Early design work with university and assigned student (lost student during Covid)
- ✓ Feb-Apr 20 Intellectual Property agreement developed (Lambert Agreement)
- ✓ Oct 20-Feb 21
- ✓ Feb 21-May 21 Procurement planning, process and supplier selection Agile development and testing
- ✓ Jun-Jul 21 DPIA and Penetration Testing
- ✓ Sep 21 Game launch

Our Gaming Strategy – DuPont's Dozen



Poor
Communication



Complacency



Lack of
Knowledge



Distraction



Stress



Lack of
Resources



Pressure



Lack of
Teamwork



Loss of
Awareness



Accepting the
Norms



Fatigue



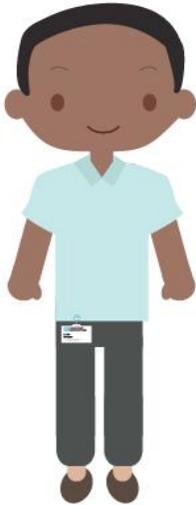
Lack of
Assertiveness

Meet Joe (our patient) and the Game Characters.....

Naomi
the Nurse



Dave
the Doctor



Paula
the Physio



Joe
the Patient



Sandra
the Social Worker



Deirdre
the District Nurse



Colin
the Care Worker





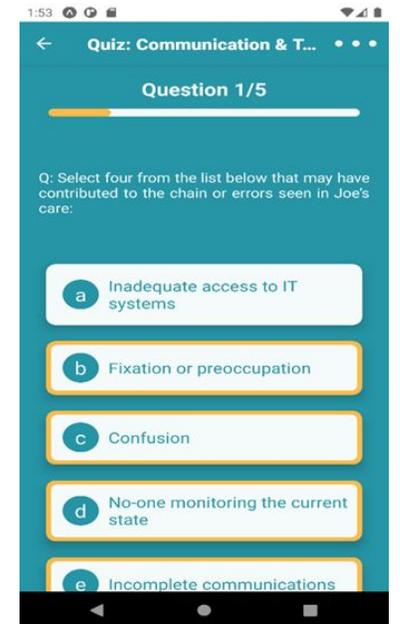
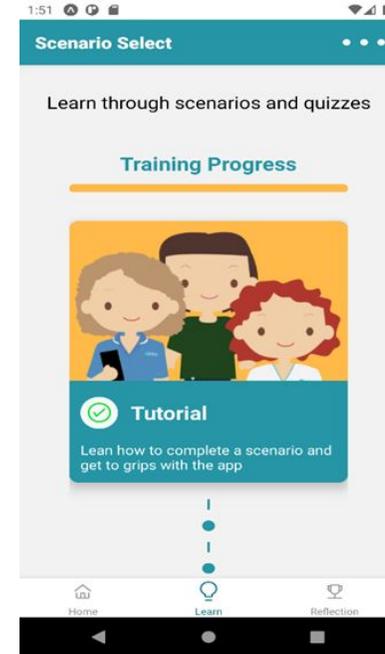
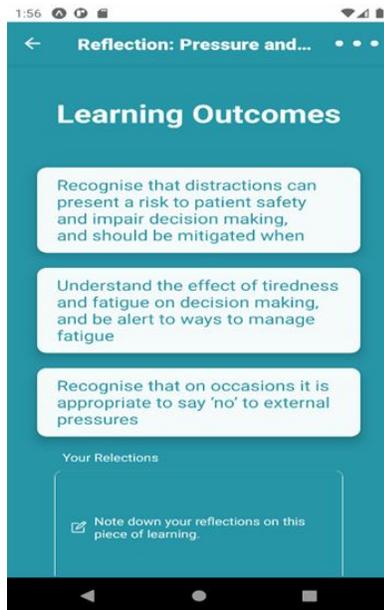
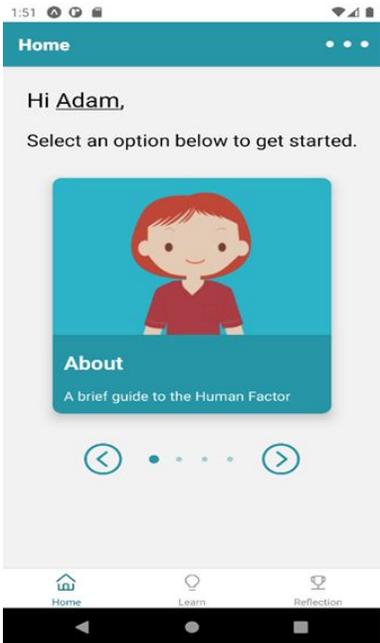
Demonstration

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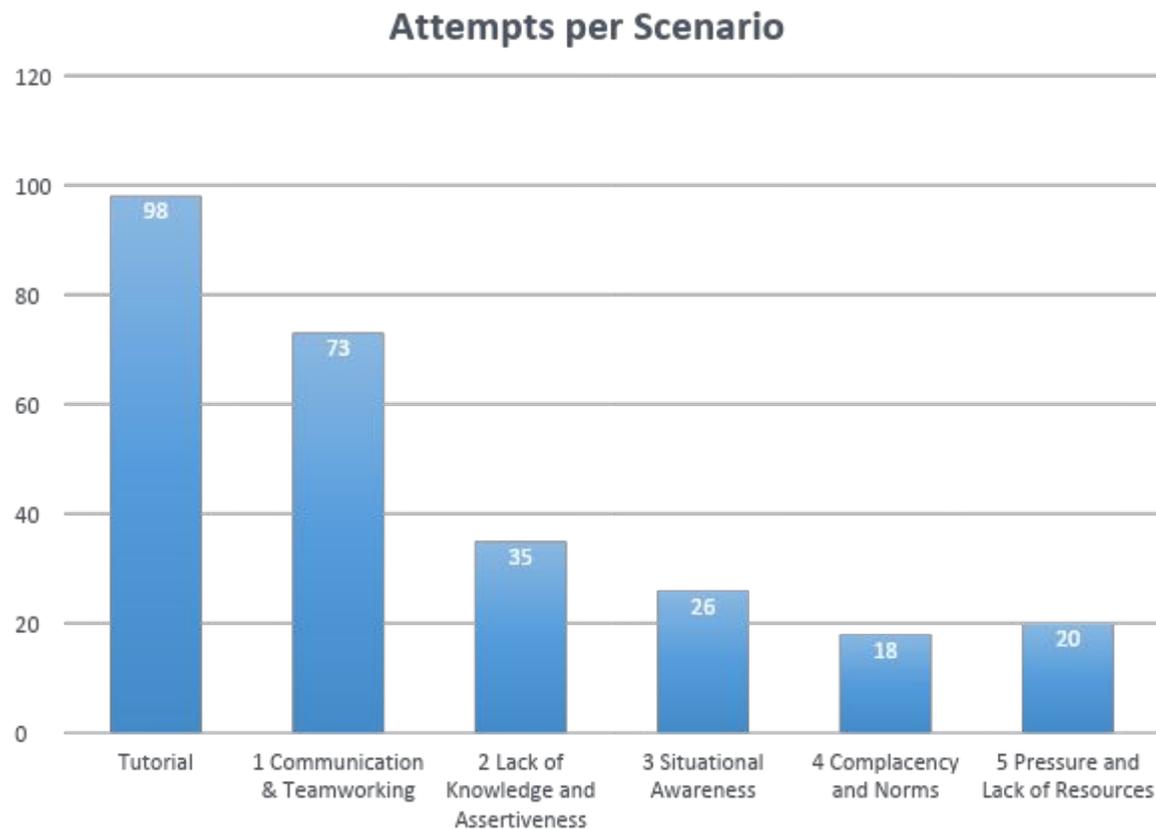


Screen Shots

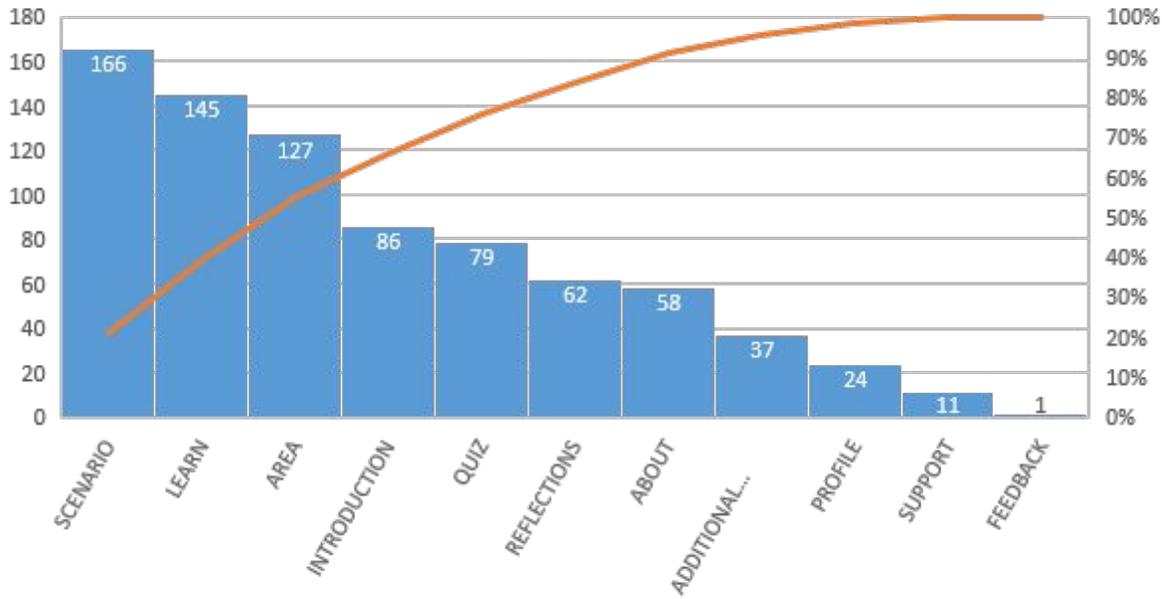




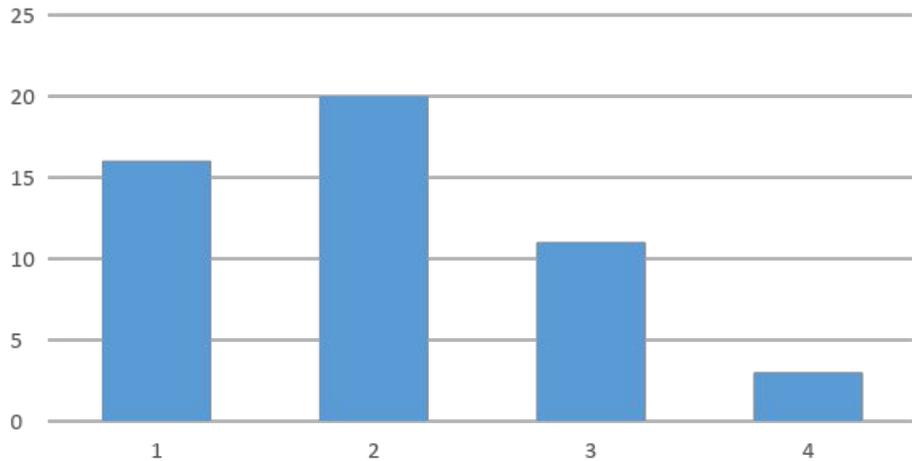
The Gaming analytics



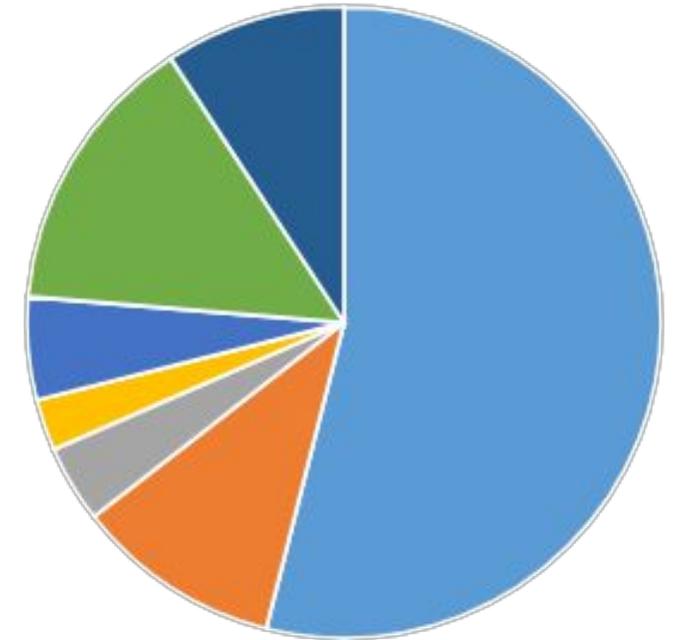
Number of page visits



Current level of knowledge 1 - low to 4 - high



Completion by division



- Women, Children and Families
- Surgery and Clinical Services
- Other
- Organisational Development
- Mental Health, Learning Disability and Health and Wellbeing
- Medical Directorate
- Community Care

Our Learning

- Early clarity on partnership arrangements, IP ownership and formal agreement
- Tight, clear specification is a must
- Working with University was a viable partnership – but Covid created difficulties
- MTD input to design missions and co-design on Gaming Strategy was key
- Significant Trust-led work on Gaming Strategy, Missions, Characters etc. supported swift development
- Preparedness for ongoing support costs
- Earlier planning for Penetration Testing and securing funding for same
- Strong launch support – posters broadcast emails

QUESTIONS

