

# What can gamification add to cultural heritage?



# Summary: Towards a new immersive Cultural Heritage experience

- 1) Serious Games Institute: hybrid model bringing together industry and academia.** How we are addressing critical challenges in our research and development work, including trajectories for research work and some key findings and research challenges ([www.seriousgames.org,uk](http://www.seriousgames.org,uk))
- 2) Due to globalization challenges and economic downturn we are at a transformative moment in culture and cultural heritage,** e.g. cuts to national and regional budgets. How can we address this? What is the role of 'gamification', play and feedback in this new cultural interchange between globalised cultures. What are the impacts upon in social (behavioural) change and awareness raising in cultural heritage?
- 3) Case Studies: Shakespeare Trust Project, Priory Undercrofts and Roma Nova**
- 4) Reflection upon creating cultural heritage experiences?** What role for gamification and games?

# Corporate Overview: Coventry University

- Coventry University was voted Entrepreneurial University of the Year in 2011 (THES)
- The university has four faculties and three institutes and has over 19,000 students
- We are a top 1992 university and have a strong reputation in applied research and business engagement
- Coventry University Enterprises Ltd is the commercial arm of the university and has established over 200 SMEs
- Coventry university undertook 25% of all industrial consultation undertaken by British universities



# 1: Serious Games Institute: Part of the Game Science Group: bringing together commercial and research expertise



# Serious Games Institute: An International Hub of Excellence in Serious Games Research, Business and Study



# The Serious Games Institute – Hybrid model

- **Business:** 4 spin outs, serious games studios, mobile apps lab
- **Applied Research:** 23 projects, 11 EU projects
- **Study:** Masters programme, Doctoral School, CPD, Bespoke training solutions



# The Serious Games Institute – Applied Research

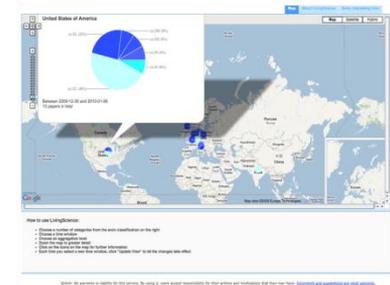
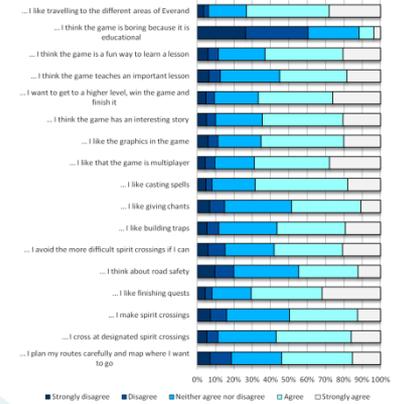


Applied research projects (23 projects, 12 EU projects)

IEEE VS-Games conference (2008-2014)

Second Wednesday events (2008-2014)

Consultancy work



# The Serious Games Institute – Study



**Masters Programme**

**Doctoral School  
(industry funded PhDs)**



**CPD /  
Advantage+  
modules**

**Internship programme  
(access to  
developers and  
modellers)**



# Projects & Games at the Serious Games Institute

**Erasmus: Roma Nova**

**Undercrofts Priory**

**Coventry City Council: Far Gosford Street Reconstruction**

**Technology Strategy Board: Shakespeare Trust**

**FET FuturICT**

**JISC Customer**

**JISC Inspires**

**JISC OpEx Platform**

**UK Department for Transport Code of Everand**

**EU Strep Masetov**

**EU Strep ALICE**

**EU GALA Network of Excellence in Serious Games**

**EU IP mEducator**

**CIP Inspiring Science**

**EPSRC Servitisation**

**EPSRC BuildTEDDI**

**LLP EduGameLab**

**LLP SimAULA**

**IP PEGASO**

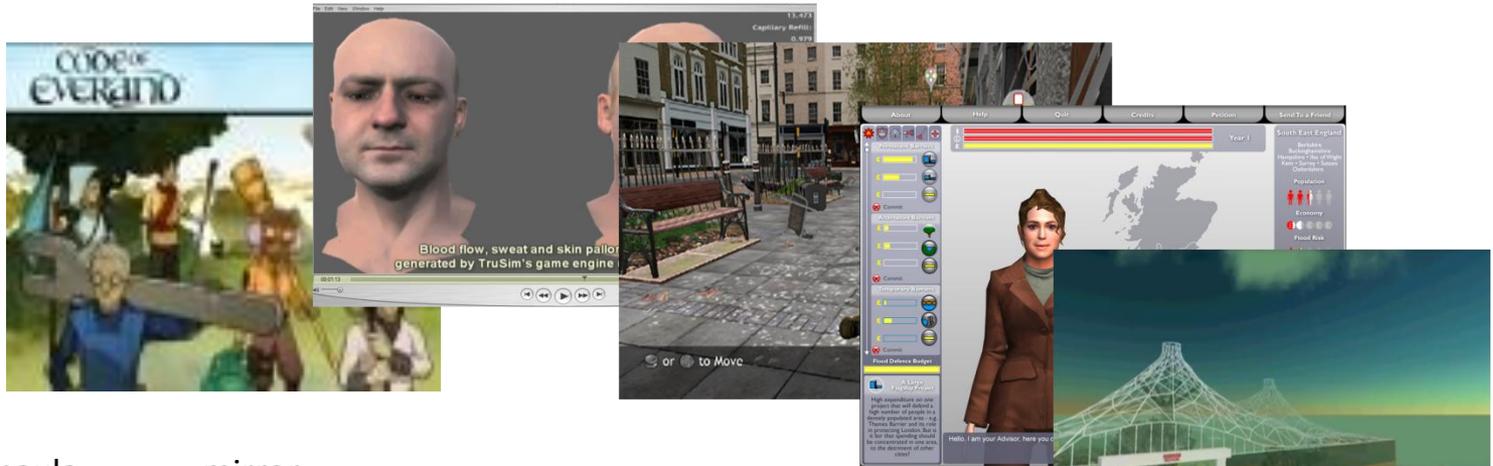


# Examples of Games at the Serious Games Institute

meducator

alice

code of  
everand



roma  
nova  
gala

simaula

mirror

vtrade

floodsim

customer

futurict

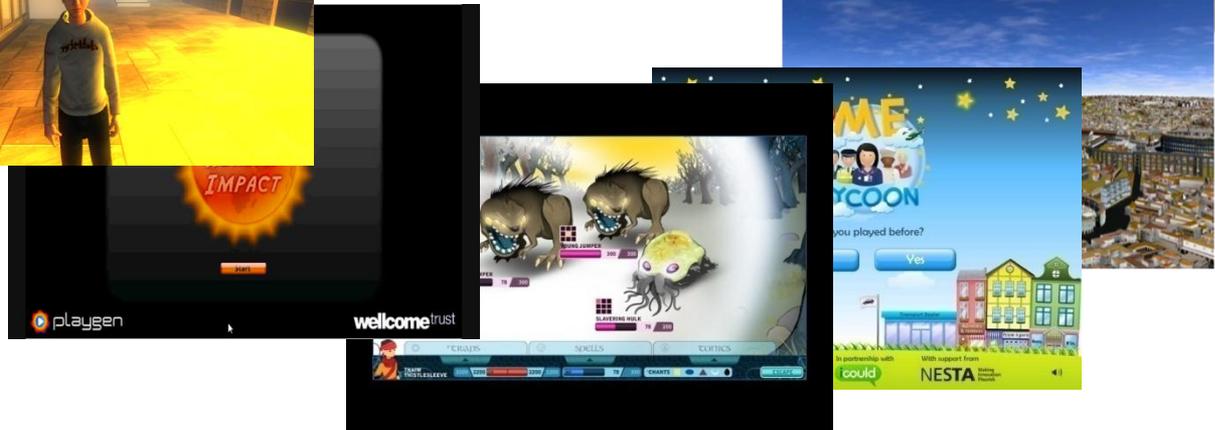


modes



edugamelab

maseltov



prepare

## 2: Towards a new immersive cultural heritage experience: access, re-use, transformation and reconstruction



# Definitions and scope

- What is a cultural heritage experience?
- What is gamification – and how can it support cultural heritage?
- What are the differences in structured and free play?





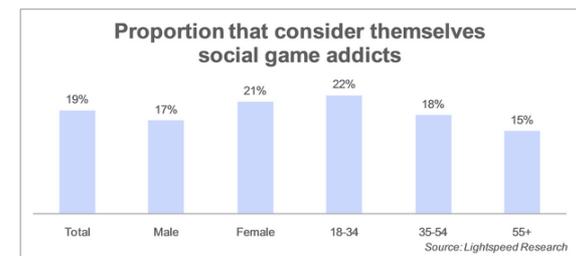
# Key highlights from the research

## What is new?

**Efficacy of game-based approaches over traditional learning:** *Triage Trainer* pragmatic controlled trial showed effectiveness of games over traditional learning in two of the three measures (Knight et al., 2010). *Prepare* cluster randomised control trial showed (Arnab et al., forthcoming). *Code of Everand* evaluation study showed game played for 30 minutes on average and high engagement of players.

**Importance of play:** Link between less free play and higher anxiety in children (Chudacott)

**Social interaction:** collective awareness platforms, social software uptake and emphasis upon peer learning, use of mobile devices, augmented reality



# Key Themes in Cultural Heritage

Due to reducing national budgets, digitization and raising expectations of visitors, we can use new technologies to improve the visitor's experience:

- a) **Visualization and modelling** to aid with reconstruction of old ruins and remains to enhance the visitor's experience (Priory Undercrofts project).
- b) **Digitization of records** to enliven and deepen the experience (BT archives project)
- c) **Re-Use and Open Access** of digital records to reach wider audiences and those unable to visit in person (mEducator project)
- d) **Reconstruction used for scientific research purposes:** to learn how buildings were used in different periods (Priory Undercrofts project)
- e) **Transformation of content** and materials through reuse and co-creation

## 3: Case studies



**Shakespeare  
Trust**



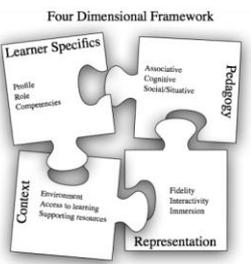
**Priory  
Undercrofts**



**Roma Nova**



# Mapping our systems more closely against human behaviour



design

theory

a: neuro-psychology approaches to learning with games

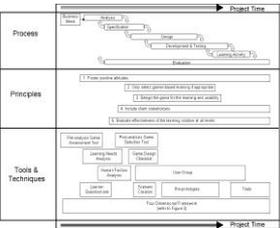
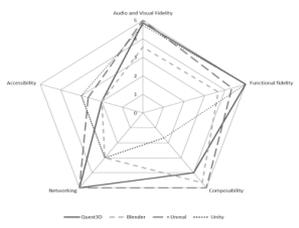
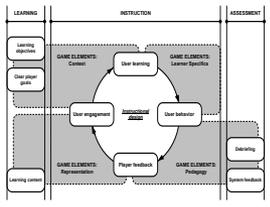
b: visualization and modelling

c: multimodal interfaces

d: artificial intelligence and life



interactive tutoring environment & a new learning

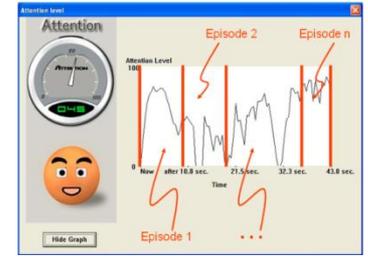


interactivity

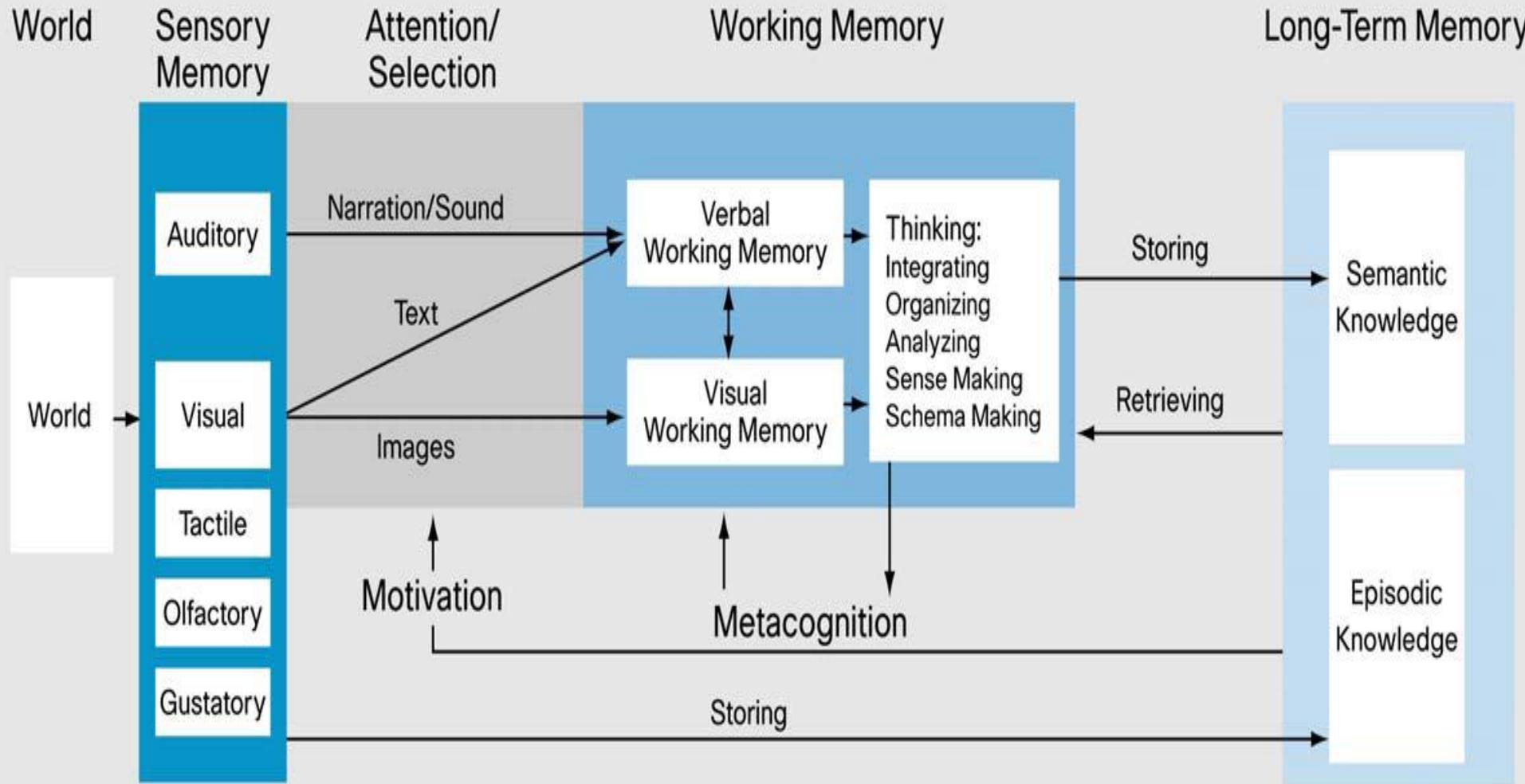
e: semantic web, standards and metadata

feedback

adaptivity



# Thinking: Physiological and Cognitive Functions



# Shakespeare Trust project: Enlivening the Visitor's Experience



# Priory Undercrofts: Bringing the Past to Life



# Roma Nova: A Cross-Curriculum Learning Experience



# Roma Nova: Big Data and Semantic Web Mashups



# Roma Nova: Scaffolding the Learners Experience in-game



# 4: Reflections and conclusions

So, why are games and gamification approaches so powerful?

**Scalability of game environments:** extending reach to large global communities

**Greater scope for creating immersive experiences:** providing new tools for flow, feedback, visual and actual realism leading to higher levels of immersion

**Improved user engagement and adaptivity to user requirements:** there is **scope for learning more** by closer modelling of user behaviour (feedback loop) there is increased motivation and engagement, potential for personalized feedback and more sophisticated learning interaction

**Strong scientific evidence of behavioural change:** ability to feel more like you are back there and change behaviour and attitudes as a result

move towards immersive learning experiences and design: with increased motivation, immediate feedback and sophisticated user models

# So, what can gamification add to cultural heritage?

Gamification and games-based approaches can:

Create an **immersive experience** to enhance the visitor's experience

**Connect up education and culture** through missions and quests

**Open up access and transformation** to more cultural collections and content

Create **new opportunities for scientific research...**



# Events & Books

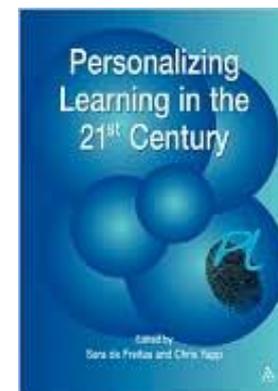
Book now for upcoming events:

New season of Second Wednesday events starts in September 2013...

Join us at:

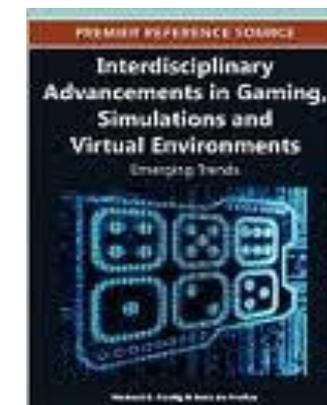
IEEE VS Games conference:  
Bournemouth, UK

11<sup>th</sup>-13<sup>th</sup> September 2013



RETHINKING  
LEARNING FOR A  
DIGITAL AGE  
HOW LEARNERS ARE SHARING THEIR  
OWN EXPERIENCES

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# selected references

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