Totem Learning Ltd: Case Study

University of Liverpool uses Totem's "Unlock: Project Management" to build learner engagement

Introduction:

In 2015 Totem Learning Ltd began a collaboration with Dr Ronald Dyer at the University of Liverpool, integrating the Unlock: Project Management serious game into the taught element of a core module (Uncertainty & Risk Management) of the MSc in Programme & Project Management as a formal assessment activity.

In a recent interview with Dr Dyer we gained the following insights:

Cutting to the chase, the table below, provided by Dr Dyer illustrates an improvement in overall student performance partly attributable to better learning & assessment through the use of a game-based learning approach in the academic year 2016/17:

Year	2014-15	2015-16	2016-17
No. of Students	28	34	40
No. of Passes/Fails	25 / 3	31/3	40/0
Standard Deviation	8.8	10.5	5.7
Mean Mark	58.4	58.6	66.4

We'll go into details in a moment but, overall how would you describe the effectiveness of using the Unlock Project Management game in your syllabus?

Individually the use of the game as both a supplement for theory and as a formal assessment process achieved its objective as overall student scores improved from the previous two years in all key metrics. Additionally, the game was used within the management school as an example of good practice in Teaching & Learning in both the Post Grad Certificate (PG Cert) programme for Teaching & Learning as well as the Management's school's internal continuing education workshop series.
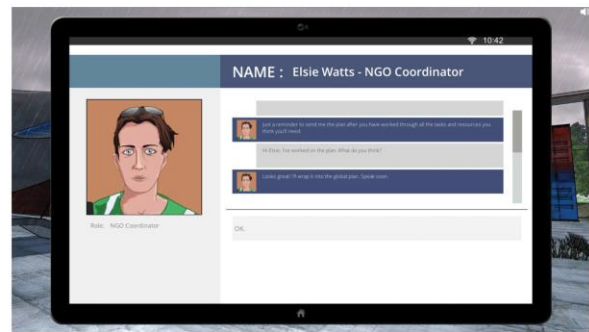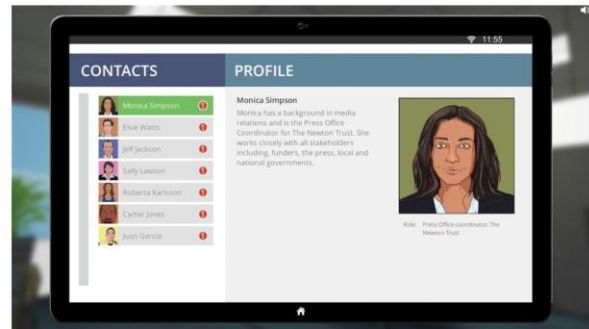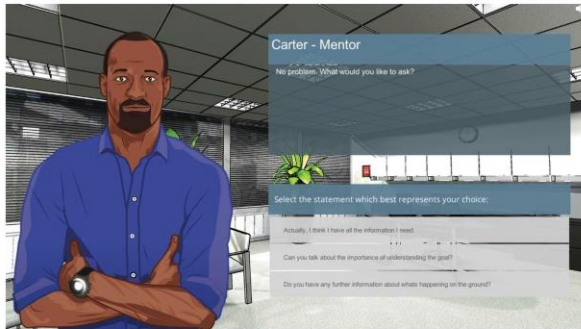
COMMUNICATE WITH A DIVERSE CAST OF CHARACTERS

Please tell us how the game has contributed to learning

Well, initially it enabled a purposeful review of the current programme objectives and learning goals to ensure a balance of theory/practice that met the requirements of multiple intelligences.

As a result of playing the game and it's associated reporting functionality identification of individual gaps in theoretical knowledge allowed for more tailored and responsive teaching practices.

Ultimately this has led to co-constructed schema creation with students as to which theoretical gaps presented a challenge and the subsequent implementation of improved learning plans i.e. reading, research skills and other learning resources that aide the student learning experiences.

It really sounds like your use of Unlock Project Management has built high quality learner engagement, can you expand on any other improvements you have seen in learners' attitude to the subject?

As the learners play the game and for some time afterwards they are encouraged to integrate reflection and contextualization of personal experiences to provide deeper insights through the various activities which simulate real-world situations and support verisimilitude.

Self-realization by students of the relevance of theory is always a challenge to the academic professional. Through demonstrated application via the utilization of game scenarios (which are fun, engaging and support collaboration) they have been much more accepting of the importance of underpinning their intuitive approach to problem solving with some tried and tested tools.
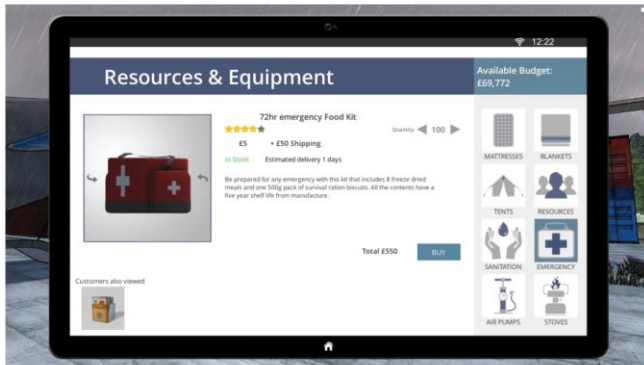
PURCHASE RESOURCES & EQUIPMENT TO SAVE THE VILLAGE

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We're always interested in how the use of games has been effectively aligned with programme objectives and outcomes, can you share with us how you managed this?

Two critical learning outcomes drove the module's direction and assessment as follows:
1. *Analyse and refine project time, cost estimates to define project baseline, schedules and budgets and*
2. *Develop an appropriate work breakdown structure (WBS) from*

established project requirements

These two outcomes drove the development of the exercises designed with the aim of providing students with a bridge from theory to practice, which the game did perfectly.

We couldn't interview you without tackling the all-important ROI question – how do you feel the game stacked up in terms of value for money?

The total value of ownership based on acquisition of the game far exceeds its monetary cost given that:
1. *It provided an autonomous learning solution to support existing taught material that could be and was frequently re-played*
2. *Unit cost in relation to similar software was well below 50% of alternatives*
3. *Burden of implementation was low*

KEEP ALL OF THE KEY STAKEHOLDERS HAPPY

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So, it's simple to justify on a cost basis which is why we just renewed with more licences for this year. Of course most importantly though, student engagement was highest during game-play.

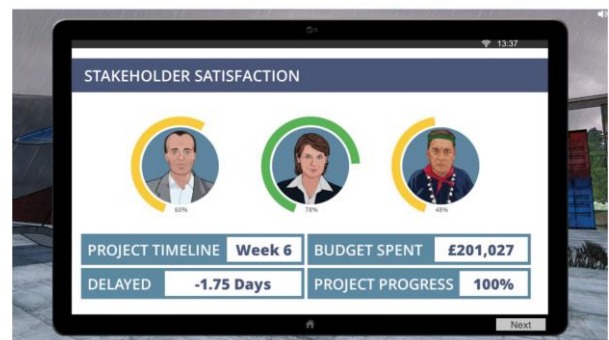**Dr Dyer, do you have anything else to add?**

This year we will attempt to formally integrate the game across the MSc Project Management/MSc Operations & Supply Chain programmes as well as introduce potentially to undergraduates. The larger plan represents an opportunity to fully investigate the power of game-based learning through empirical research within a pedagogical innovation context. The aim over the next 2/3 years will be publication of our findings. Game on!

Dr. Dyer - Lecturer – Project Management – Department of Marketing & Operations at the University of Liverpool's Management School where his teaching and research interest are in enterprise risk management & serious games/gamification. He has authored several publications in the area of MOOCs/Serious Games & Gamification:

- *Bahadoorsingh, S., Dyer, R., & Sharma, C. (2016). Integrating serious games into the engineering curriculum - a game-based learning approach to power systems analysis. International Journal of Computational Vision and Robotics, 6(3), 276. doi:10.1504/IJCVR.2016.077372*
- *Dyer, R. (2014). A Conceptual Framework for Gamification Measurement. In Gamification in Education and Business (pp. 47-66). Springer International Publishing.*
- *Dyer, R. (2014). Exploring the Relevancy of Massive Open Online Courses (MOOCs): A Caribbean University Approach. Information Resources Management Journal (IRMJ), 27(2), 61-77.*
- *Dyer, R. (2014). Games in Higher Education. In New Pedagogical Approaches in Game Enhanced Learning: Curriculum Integration (pp. 33). IGI Global.*

Totem Learning Ltd is a multi-award winning serious games development studio and global innovator.

Why not try the Unlock Project Management Game (1st level demo version)
: http://www.totemlearning.net/support/Enixus/WebGL/Demo/index.html