Future-present learning and teaching

a case study in Smart Learning

Link to these slides: https://tinyurl.com/future-present-learning

Pen Lister. PhD Candidate. MA MSc MBCS FHEA. University of Malta

Future-present learning and teaching....

This talk discusses how *smart learning* is perceived by future educators, for relevance to their own practice and how they engage with it as a concept.

I discuss the *experiences of students studying education degrees* in relation to smart learning and smart learning environments in the context of their participation in 'Malta Democracy', a smart learning journey situated in Valletta, Malta.

This forms *part of ongoing University of Malta doctoral research investigating smart learning activities conceptualised as real world journeys.*

Future-present learning and teaching....

Future-present learning and teaching...

Smart learning journeys are emerging technology-enhanced learning activities. Ireland & Johnson (1995) argue that investigating the future in the present can be achieved by 'Applied Exploration':

> "(t)o anticipate future needs, researchers must create conditions in which designers and developers can *observe the future in the present*" (their emphasis, ibid, p. 59).

Future-present learning and teaching....

→ Defining smart learning

→ Understanding experience complexity in smart learning journeys

→ The concept of a pedagogical relevance structure

→ Class based activities using technology and a phenomenographic style focus group

Future-present learning and teaching....

Defining Smart Learning

"Learning to learn, learning to do, learning to self realisation" **[Liu et al., 2017]**

"... better, faster learning" **[Koper, 2014]**

"... features to promote engagement, effectiveness and efficiency" **[Spector, 2014]**

"... a complex conversational process that can and usually does lead to much that is of value beyond what is planned" **[Dron, 2018]**

Future-present learning and teaching....

Smart Learning

"... a complex conversational process that can and usually does lead to much that is of value beyond what is planned" **[Dron, 2018]**

Can we include *all kinds of learning that is not directly part of any assessed learning outcomes*?

- Learning to participate
- Learning to use and negotiate Maps and AR
- Learning to work as a group
- Learning to make digital content and upload it
- Learning to understand surroundings
- Learning to make decisions
- Learning about the topic itself

… a case study in smart learning

Undergraduate and postgraduate groups participated in…

→ a smart learning journey located in Valletta, Malta "Malta Democracy"

- These journeys manifest as smart learning environments in authentic locations using ad-hoc free mobile apps and online open source digital knowledge content.

→ an informal *phenomenographic style* focus group in class, after taking part in the journey

→ technology based classroom activities after taking part in the journey

Apps

HP Reveal - augmented reality

Edmodo - creative, participative activities

Google My Maps - locations!

Students used their own phones

… a case study in smart learning

Malta Democracy

… a case study in smart learning

How I measure a smart learning activity experience

Phenomenography investigates and analyses participant experience at collective level.

It looks for commonality, difference and variations across all interview transcripts.

My work establishes proposed levels of *experience complexity for a "smart learning journey"*. *(A geo-spatial learning activity mediated by technologies.)*

Experience complexity of a smart learning journey (proposed)

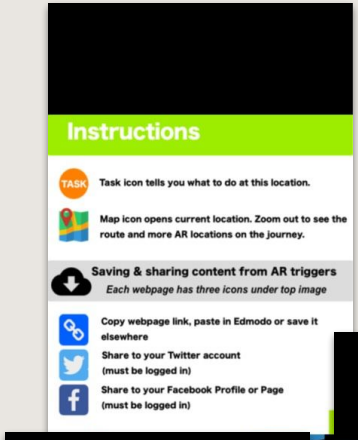
Level 4	Research tasks and topic beforehand, take time doing and reflecting on tasks	Share tasks and content, do additional learning, discuss related experience and knowledge	Live it, being in the picture, live the atmosphere, take more time, seeing the whole and related parts	Knowing and seeing knowledge and place as valuable, personal experience, deeper engagement and ‘possibilities’
Level 3	Tasks indirectly related to coursework or assessment	Discuss tasks and topic in relation to time and place	Experience in the place relating to other people, aspects and memories. Make connections between places and knowledge	Engage further with knowledge in topics, create upload content for tasks and at locations
Level 2	Do the tasks of interest, directly related to coursework or assessment	Discuss the tasks, help each other with tasks and tech	Locations are of some interest, potential for learning, creativity or inspiration	Click a few content links, save links ‘for later’, make screenshots of augmentations or tasks
Level 1	Do the tasks, go home	Discuss who does the tasks, how technology works	Go to locations, do tasks, go home	No engagement with content or knowledge, don’t create or upload content
	Category A **Doing the tasks (obligations)**	**Category B** **Discussing (social)**	**Category C** **Being there**	**Category D** **Knowledge and place as value**

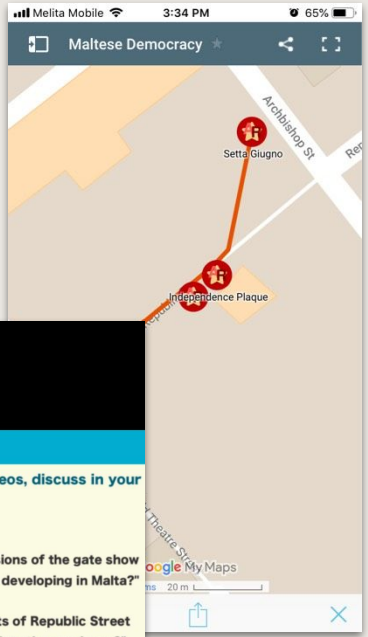
… a case study in smart learning

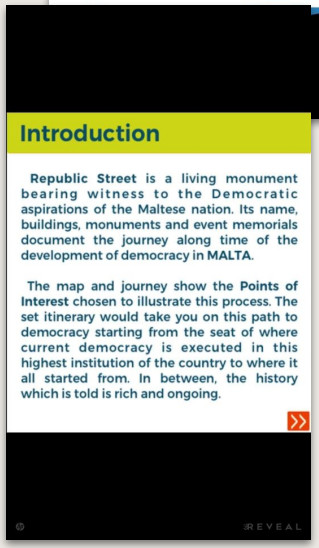
The learner generated content resonates the same aspects that learners talk about:

- Obligations and tasks
- Discussing and social
- Locations, place and being there
- The value of knowledge and place

These aspects can ***potentially*** therefore be planned for and drawn out before, during and after the activity, to support connectivist participatory pedagogies.



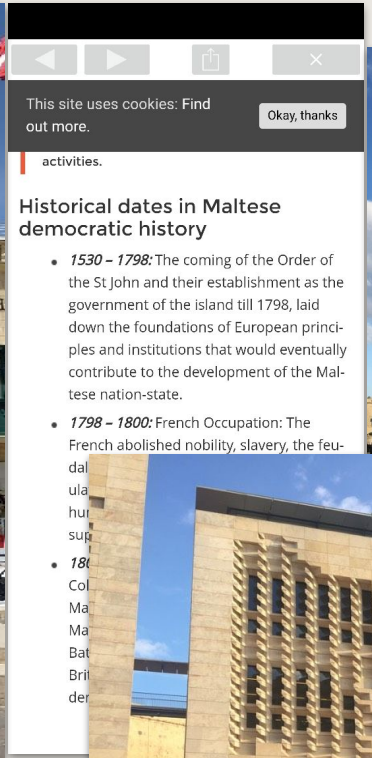


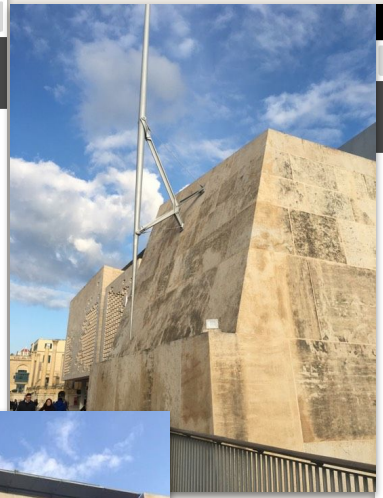


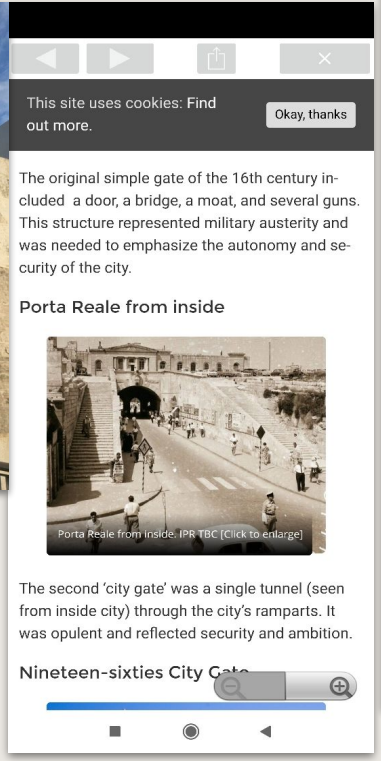
Learner Generated Content Uploads:

Tasks, functions, AR, instructions

Category A 1 & 2, Category D 2







Learner Generated Content Uploads:

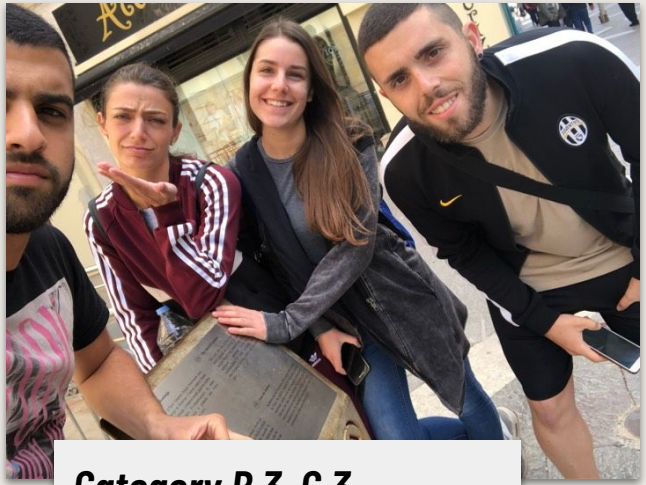
Content and facts in locations

Category C 2 & 3; D 3

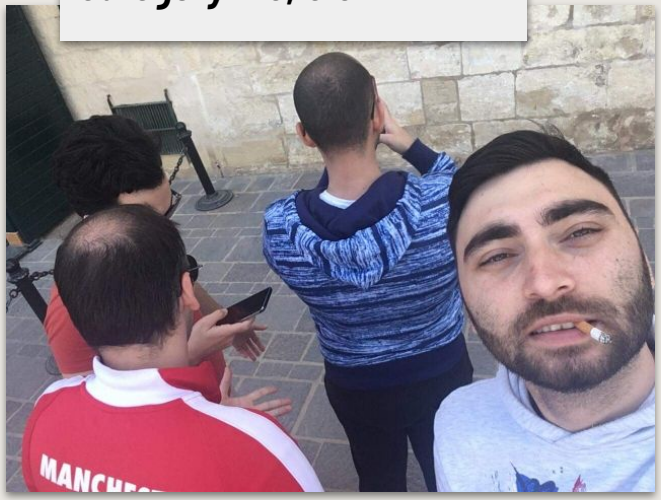
Learner Generated Content Uploads:

Social, being there, creativity

Category B & C, Levels 3 & 4



Category B 3, C 3



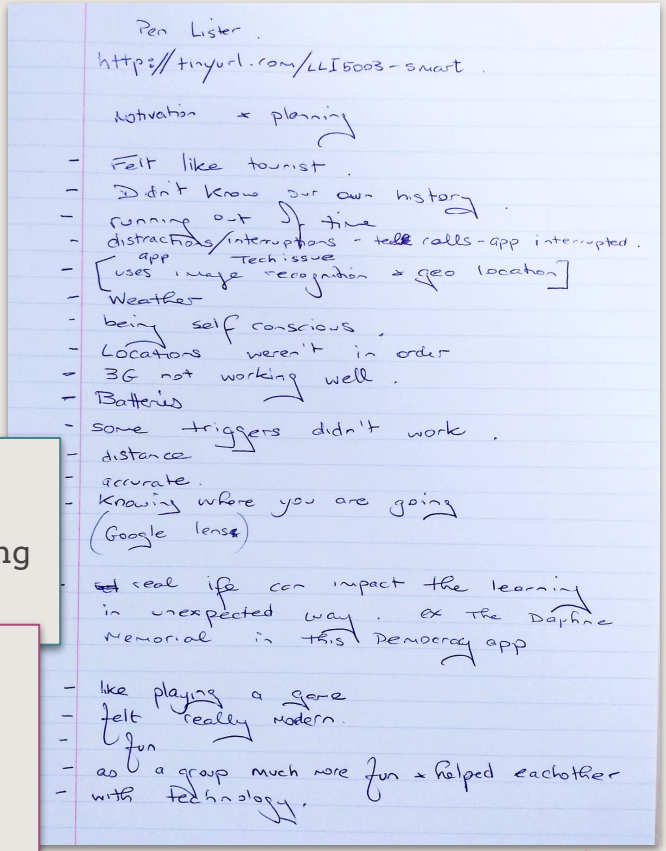
Category C 4, D 4

Classroom activities to foster pedagogical relevance structure

- *Working in teams to unpack the journey - planning, technical, pedagogical*
- *Using project management tools: Trello - signing up, logging in, adding tasks, project members, skills needed...*
- *Continuing to use Edmodo after the journey itself*
  - *carry on using the Edmodo group in class afterwards, adding to content and reflections*
  - *encourage notes to be added during class discussions, show on projector*
- *Encouraging after class reflections to be uploaded*

The relevance structure focus group

- An emergent focus group discussion uncovers the group's thoughts on their own experiences.
- This creates a setting of relevance for pedagogical reflection far deeper than a conventional lecture.
- This is the ***figure ground reversal*** evident in some phenomenography interviewing



"Motivation and planning"

- Felt like a tourist
- Didn't know our own history
- Running out of time
- Distractions/interruptions
- Weather
- Being self conscious

- Distance
- Accurate
- Knowing where you're going (Google Lens)

- Real life can impact learning in unexpected ways...
- Like playing a game
- Felt really modern
- Fun
- As a group much more fun and helped each other
- with technology

- Locations weren't in order
- 3g not working well
- Batteries
- Some triggers weren't working

… a case study in smart learning

Acknowledging learner experience variation may support learning across *unplanned* but significant aspects of learning.

A pedagogical relevance structure for learning based on 'connectivist style' principles of autonomy, collaboration and diverse opinions may build intrinsic motivation and situate autonomous learning activities in practical understanding, purpose and applicability.

Digital participatory pedagogy supports 21st century skills*, both digital skills and transversal skills such as collaboration and autonomy.

* 21st century skills and competences as discussed in the EC 'Learning and Skills for the Digital Era', the DigComp 2.1 framework, P21's Frameworks for 21st Century Learning, Anderson, 2008 and others.

Sources

- Anderson, R. (2008). Implications Of The Information And Knowledge Society For Education. In J. Voogt & G. Knezek (Eds.), International Handbook of Information Technology in Primary and Secondary Education, 5–22. Springer 2008
- Carretero, S., Vuorikari, R., and Punie, Y. (2017), "Digital competence framework for citizens",(DigComp 2.1), European Commission, Publications Office of the European Union, Luxembourg, retrieved from publications.jrc.ec.europa.se/repository/bitstream/JRC106281/web-digcomp2.1pdf_(online).pdf
- Dron, J. (2018). Smart learning environments, and not so smart learning environments: a systems view. Smart Learning Environments. Springer Open. 5:25. doi: 10.1186/s40561-018-0075-9
- Ireland, C., and Johnson, B. (1995). "Exploring the FUTURE in the PRESENT", Design Management Institute Review, Vol 6, Issue. 2, pp. 57-64, doi 10.1111/j.1948-7169.1995.tb00436.x.
- Koper, R. (2014). Conditions for effective smart learning environments. Smart Learning Environments. Springer Open. 1: 5. doi: 10.1186/s40561-014-0005-4
- Lister, P. J. (2019). Future-Present learning and teaching, a case study in smart learning. (draft for proceedings of ISNITE 2019)
- Lister, P. J. (2019). Understanding experience complexity in a smart learning journey. (submitted to Emerald JARHE).
- Lister, P. J. (2019). Learner experience complexity as data variables for smarter learning. (submitted to Springer AI & Society, Ways of Machine Seeing.)
- Liu D., Huang, R., & Wosinski, M. (2017). Future Trends in Smart Learning: Chinese Perspective. In: *Smart Learning in Smart Cities. Lecture Notes in Educational Technology*. Springer, Singapore.
- Spector, J.M. (2014). Conceptualizing the emerging field of smart learning environments. Smart Learning Environments 2014 1:2. doi:10.1186/s40561-014-0002-7
- 'Learning and Skills for the Digital Era', available from https://ec.europa.eu/jrc/en/research-topic/learning-and-skills
- P21's Frameworks for 21st Century Learning, available from http://www.battelleforkids.org/networks/p21/frameworks-resources