



## Thinking Critically about Curriculum Design for Games, Game-based Worlds and Immersive Environments

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**Duration** : 12 hours

### Course Description

This course will introduce teachers to fundamental principles of the design of learning environments and curricular units around Game-based Worlds and Immersive Environments. The course is crafted in recognition of the increasing interest among teachers in leveraging the affordances for learning of such worlds and environments in both formal and non-formal contexts within schools. Participants will be introduced to a robust and proven curriculum design framework, as applied to a diversity of authentic examples from school-based usage cases in Singapore; no prior experience or knowledge of games or immersive environments will be assumed.

All teachers with a healthy interest in exploring how such worlds and environments might be applied to their respective subject-disciplines are welcome to attend. No prior experience is required.

Before attending the course, participants are kindly requested to raise a Service Request through MOE Information Technology Branch / NCS for *Second Life* to be installed on their respective notebook computers.

### Course Objectives

At the end of the course, participants will be able to

- Explain the fundamental pedagogical principles of game-based worlds and immersive environments for learning
- Critically analyse a diversity of lesson units in terms of a systematic curricular framework
- Collaboratively design a curricular unit around a subject-discipline of their choice, which would effectively leverage the affordances of a given environment for learning

### Course Content and Schedule

#### Session 1 – Understanding the Potentialities for Learning in Games, Game-based worlds and Immersive environments

##### Date, time, venue

- 1) Introduction to Games, Game-based worlds and Immersive environments: (60 mins)
- 2) Fundamental principles of learning in such worlds and environments (60 mins)
- 3) Thinking critically about designing for learning in such worlds and environments (60 mins)

This session will ease participants in to games, game-based worlds and immersive environments, with a particular view to deriving a shared understanding of the nature of learning that might

potentially take place. From this initial understanding, participants will be encouraged to think critically about how to design environments which leverage these specific affordances for learning.

Readings:

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Gee, J. P. (2007). *What video games have to teach us about learning and literacy*. Palgrave Macmillian.

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**Session 2 – The Six Learnings framework for curricular design: Case examples from ‘real classes’**

**Date, time, venue**

- 1) What are the Six Learnings? (60 mins)
- 2) What do lesson units structured around the Six Learnings look like? (60 mins)
- 3) Applying the Six Learnings to each participant’s respective subject-discipline (60 mins)

This session builds on the preceding one by introducing a formalized structure for thinking about the design of effective learning environments in games, game-based worlds and immersive environments. Participants will be introduced to the Six Learnings framework for curricular design, and be presented with ample opportunity to familiarize themselves with, analyse, and subsequently deconstruct lesson plans of actual lessons which were successfully carried out in a variety of schools, age cohorts, and infrastructural settings. This will be with a view to eventually applying the Six Learnings framework to possible lesson ideas from within each participant’s respective subject-discipline.

Readings:

Lim. K. Y. T. (2009). The Six Learnings of Second Life: A Framework for Designing Curricular Interventions In-world. *Journal of Virtual Worlds Research*, 2(1).

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**Session 3 – Situating the Six Learnings within the larger curriculum: What about real-world contexts, constraints and pen-and-paper assessments?**

**Date, time, venue**

- 1) Questioning assumptions: Models of classroom implementation (60 mins)
- 2) Questioning assumptions: Disciplinary intuitions (60 mins)
- 3) Applying the Six Learnings to each participant’s respective subject-discipline (60 mins)

This session recognizes that lesson units need to be planned within real-world contexts and constraints. The session will build on earlier discussions of implementation models, and will address down-to-earth questions such as the place and timing of such interventions within the formal curriculum, the opportunity costs thereof, and the nature and importance of tutorials, follow-through and discussions. From these enlightened understandings, participants will be given time to fine-tune their respective lesson units.

Readings:

diSessa, A. A., & Sherin, B. L. (2000). Meta-representation: An introduction. *Journal of Mathematical Behavior*, 19(4), 187-190.

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#### **Session 4 – Drawing the strands together: Building a foundation for sustainability**

**Date, time, venue**

- 1) Disciplinary intuitions and Assessment for Learning (60 mins)
- 2) Planning for scaling and sustainability (60 mins)
- 3) Group presentations of lesson units (60 mins)

In this concluding session, the various strands of discussion will be drawn together in order to encourage participants to think critically about planning for sustainability. The highlight of this session will be the opportunity to learn from fellow participants how they have conceptualized their respective prototypical lesson units around a subject-discipline of their choice. Participants will therefore leave the course as members of a like-minded and supportive community, and with a variety of lesson units from which to draw further inspiration.

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## Assessment

### **Presentation of Lesson Unit within a subject-discipline of participant's own choice**

This course is assessed by a presentation of a lesson unit within a subject-discipline of the participant's own choice.

Participants may work in groups of two or three, or as individuals. The lesson unit is understood to be no more than a prototype (that is, as an indicator of what might potentially take place in class), and should include a series of lesson plans and sample assessments, based on an intervention leveraging a title / platform such as *The Rise of Li' Tledot* (a citizenship education game), *Minecraft* or *Second Life*.

## Plagiarism and Copyright

The Institute takes a serious view of any form of plagiarism and infringement of copyright. A contravention of the provisions of the Copyright Act is deemed to be a breach of the Institute's rules and regulations which could result in disciplinary action. Plagiarism and other forms of academic dishonesty are considered serious offences for which disciplinary penalties will be imposed. Under the NTU Honour Code for students, plagiarism is defined as follows: 'to use or pass off as one's own, the writings or ideas of another, without acknowledging or crediting the source from which the ideas are taken'.

## Other Information Specific to the Module

### **Core References**

- diSessa, A. A., & Sherin, B. L. (2000). Meta-representation: An introduction. *Journal of Mathematical Behavior*, 19(4), 187-190.
- Gee, J. P. (2007). *What video games have to teach us about learning and literacy*. Palgrave Macmillan.
- Jarmon, L., K. Y. T. Lim and B. Stephen Carpenter II (eds.), (2009). *Journal of Virtual Worlds Research*, special issue on "Pedagogy, education and innovation in virtual worlds", 2(1).
- Lim, K. Y. T., Y. H. Cho and M. Vallance (eds.), (2013). *Journal of Virtual Worlds Research*, special issue on "Asian perspectives", 5(2).
- Lim, K. Y. T. (2013). The Six Learnings framework: exploring the dialectics of intuition and adaptivity in citizenship education, In Hung, D., K. Y. T. Lim and S.-S. Lee (Eds.) *Adaptivity as a transformative disposition for learning in the 21st century*. Springer.
- Lim, K. Y. T., D. Hung and D. Huang (2011). Towards a situative view of extending and scaling innovation in education – a case study of the Six Learnings framework. *Educational Research for Policy and Practice*, 10(2).
- Lim, K. Y. T. (2010). Implications of Placedness to Learning in Multi-User Virtual Environments. *Educational Technology*, 50(5).
- Lim, K. Y. T. (2009). The Six Learnings of Second Life: A Framework for Designing Curricular Interventions In-world. *Journal of Virtual Worlds Research*, 2(1).