

The use of Simulation Game Design and Animation as Assessment

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1. About Myself

- Worked in industry from 1987 – 2011
- Joined PolyU since 2011
- Areas of interest : Information Systems Management, Information Security Audit & Control, Knowledge Management, Innovation & Entrepreneurship
- Teaching also E-commerce, Business Intelligence, Intellectual Property Protection, Logistic and Supply Chain

2. Previous use off-the-shelf games and Simulations for teaching

- Harvard (www.hbsp.harvard.edu)
- MIT (<https://mitsloan.mit.edu/LearningEdge/simulations>)
- Flexsim (www.flexsim.com)
- US Naval Postgraduate University (<http://my.nps.edu/web/cisr/cyberciege>)
- D0x3d! (<http://d0x3d.com>)
- GoVenture (<http://goventure.net/products/entrepreneur-board-game.html>)
- IPSIMS (<https://www.tacitsims.com/>)

3. From Buying to Design (by students)

- The Industry need games ? (<http://www.pwc.com/us/en/financial-services/cybersecurity-privacy/game-of-threats.html>)
- S2 (2015-16) COMP4127 IS Audit and Control; game design as options for Group Project; surprisingly more than 50% students chose that option.
- Change the presentation mode to public exhibition
- S1 (2016-17) COMP4135 Knowledge and Information Management / COMP4512 Intellectual Property Protection and Management, doing same method with exhibition;
- Deliver some publications / students went competition in Europe
- Participation in Reimagine Education 2016 processes (<https://www.facebook.com/search/top/?q=supplemental%20information%20by%20walter%20fung%20for%20reimagine%20education%202016>) (<https://www.facebook.com/groups/946083452186289/?fref=nf>)

Q1.
Have you been buying games for teaching ?

Q2.
Will you consider to buy some for teaching ?

Q3.
Have you or teaching team designed games for teaching ? Please share some experience.

Q4.
Have you ever asked students to design games as assessment ?

Q5.
Will you consider to do so ?

Q6.
Will you consider to seek help from CoP colleagues for more consultation (even privately) ?

Your name _____ Dept _____
Email _____

Next (wish list by Walter)

- Encourage students for competitions (<http://www.academic-conferences.org/conferences/ecgbl/>)
 - Some games become commercialized (assist students)
 - Some games be adopted by other Universities for teaching
 - Some games are adopted in the industry
 - Integration with MOOC / SPOC ?
-
- **VR Game for PolyU Green Deck Initiatives**
(<https://www.polyu.edu.hk/cpa/greendeck/>)
(https://www.youtube.com/watch?time_continue=3&v=0MltF0EsaeU) (<https://www.flexsim.com/flexsim-2017-update-1-vr-improved-ease-use/>)



Simulation, Game Design, Animation as Assessment

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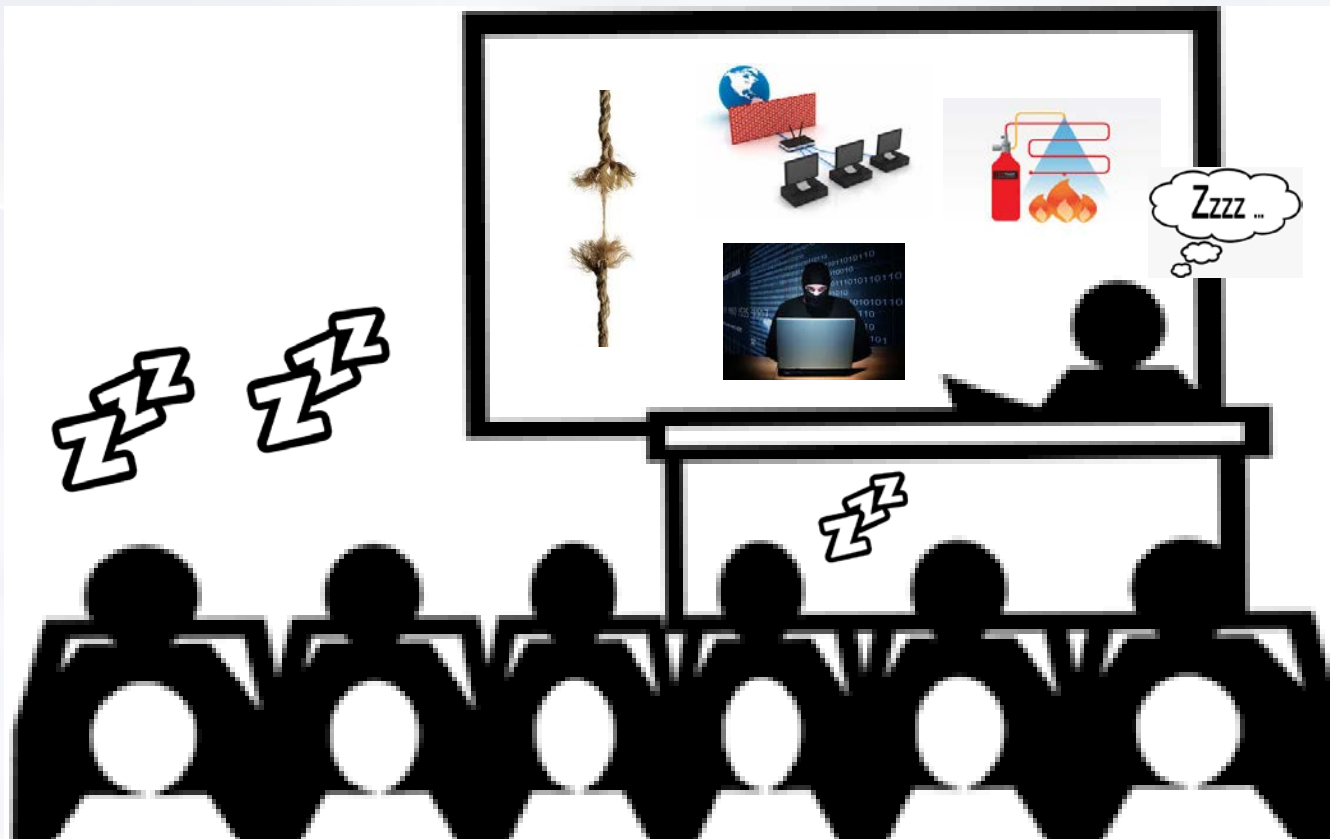
Category : Learning Assessment

Ticket number : 463474

The use of Simulation / Game Design and
Animation as Assessment for Subject in
information Systems Audit and Control

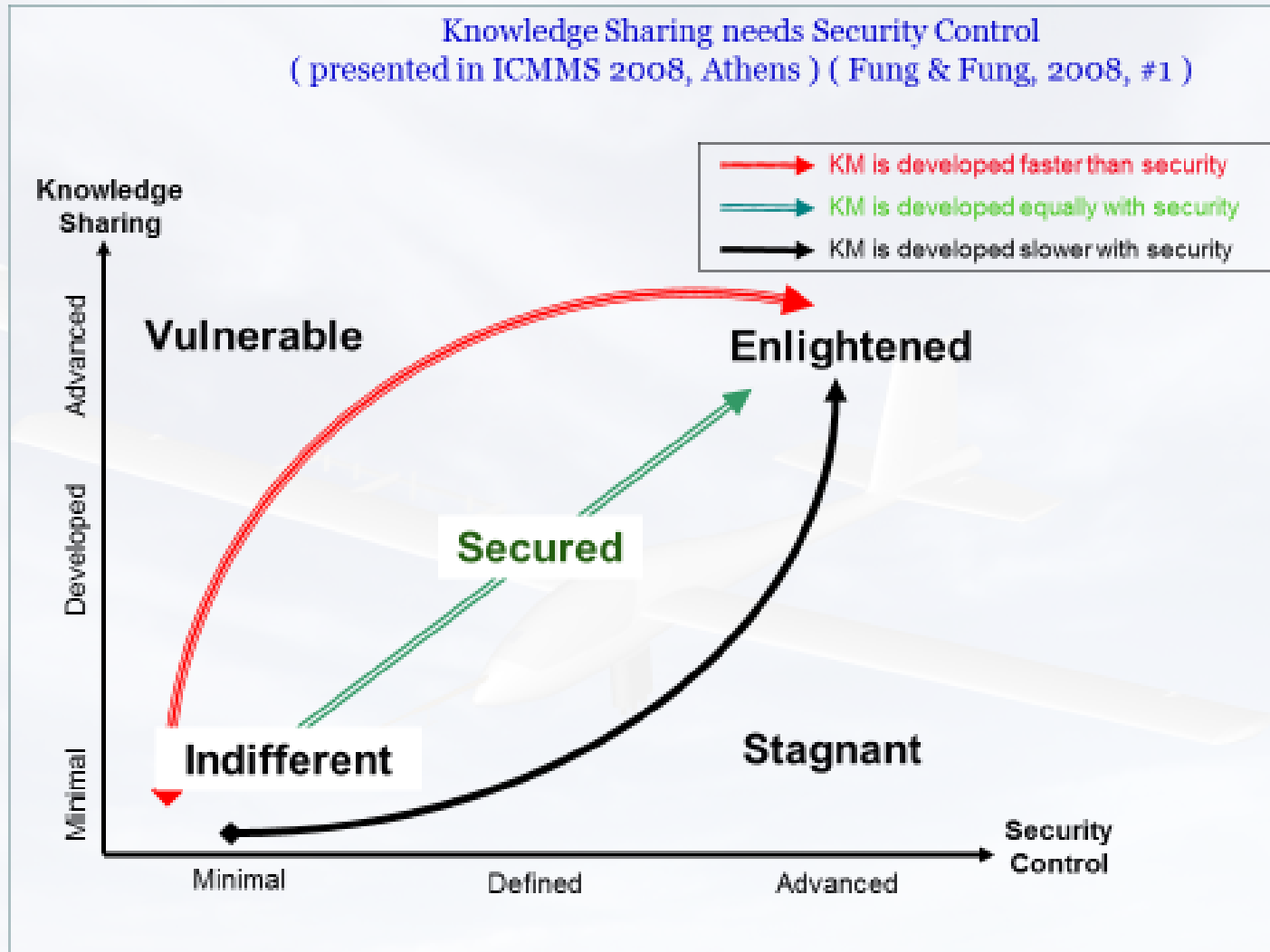
Project Motivations

Information Systems Audit & Control as related to security used to be assessed by traditional methods like exam, case study, audit & evaluation of companies by report, etc.



Project Motivations

Students in control and security disciplines are easy to neglect the dimensions of knowledge, creativity, and innovations, which can be so critical to create values to survive an enterprise.



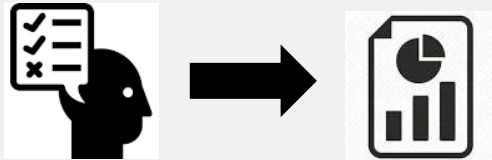
New Design of Assessment is needed



By inspiration of Daniel Pink's Autonomy, Mastery, Purpose, the subject assessment is redesigned to allow 4 project options for students :

Option 1 :

Traditional assessment of a company and draft report



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Option 2 :

Create animation clips to enhance enterprise security



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Option 3 :

Design of Board Game to help enterprise security education



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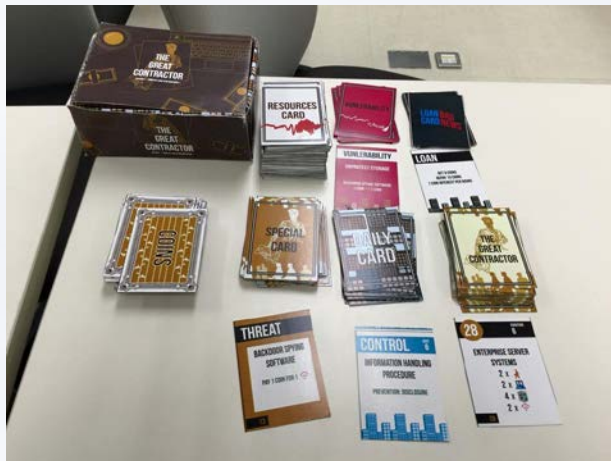
Option 4 :

Design of Strategic Simulations to train up executive in security decisions



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Simulation / Game Design and Animation Exhibition (End of Semester – Week 13 on 14th April 2016)



Simulation / Game Design and Animation Exhibition (End of Semester – Week 13 on 14th April 2016)

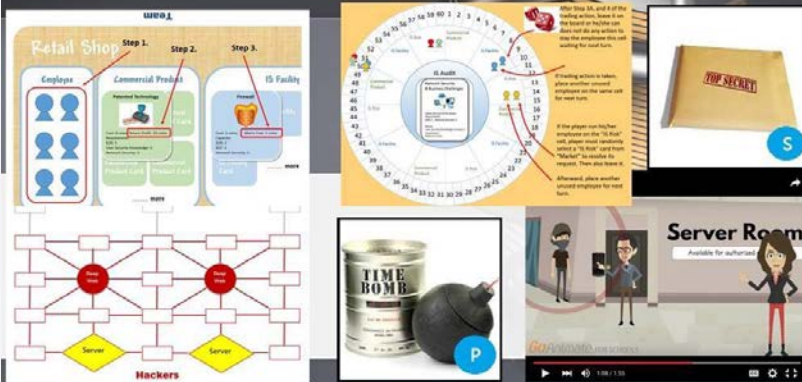


Design of Board Games and Animations for teaching in "Information Systems Audit & Control"

In association with the Entrepreneurship Club of Department of Computing, the gallery will exhibit some 10 groups of students who design board games or create animations for the subject "Information Systems Audit & Control". The deliverables can be reused in other universities, or for purpose of security awareness training in the industry. All are welcome to discuss with students.



Galleries of semester student projects, **P505**, Thursday April 14, 6 to 8pm.



For enquiry contact Dr. Walter S. L. Fung walter.fung@polyu.edu.hk

```
Local System Startup
Bootup Complete
Ver
Al
St
Type 'help' for help
localhost>
Help menu for localhost system
alt
(c)hat launch chat program
(e)xit exit this localhost
(h)elp display this menu
(m)ail launch email client
localhost> alt
Alternate Commands
ach list achievements
alt display these commands
answer solution to this level
clr clear the screen
hint a hint for this level
font [size]
change the font size
program
```

Abstract of Game:

Anti-Hack is a kind of board game, which mainly focuses on the concept of "Attack" and "Defense".

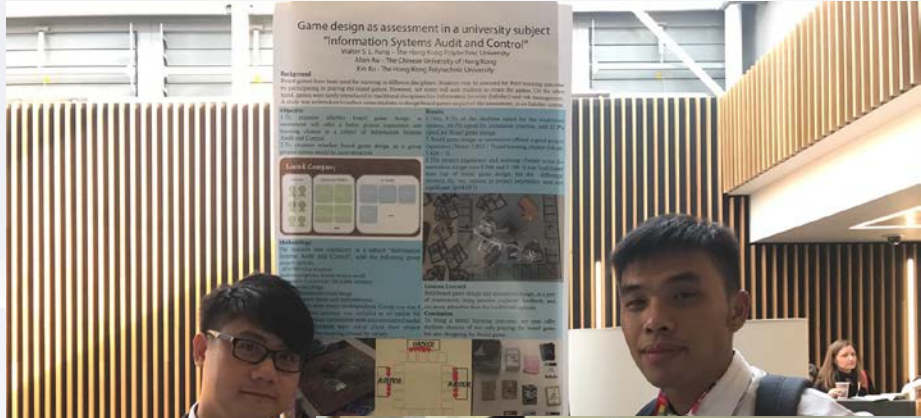
By designing different kinds of attack card and defense card, we hope that the game can introduce different ways of computer attacks and the corresponding ways to defend the attacks.

Level of play: High school & University

Chau Lap Yin	12101815D
Cheung Yat Kan Eden	12140241D
Ma Kwok Yi	12102453D
Ngoo Wing Yan	12102011D
Wong Ka Yan	12101691D
Yeung Tsz Yan	12103109D



Students' participation in international competition (ECGBL Oct 2016 - Scotland)



Teaching research and publications

- **Poster Exhibition** in European Conference on Games Based Learning - October 2016
- **Conference paper** in IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) – in December 2016 in Bali, Indonesia
 - Shortlisted for best paper award.
- **Conference paper** in IEEE 8th International Conference on Engineering Education (ICEED 2016) – in December 2016 in Kuala Lumpur, Malaysia

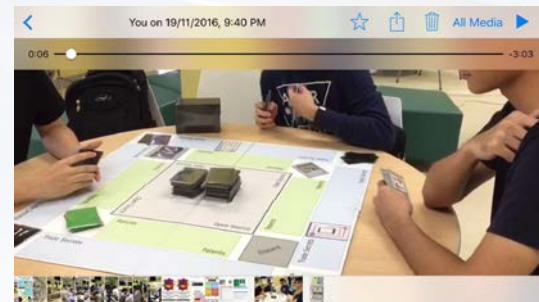
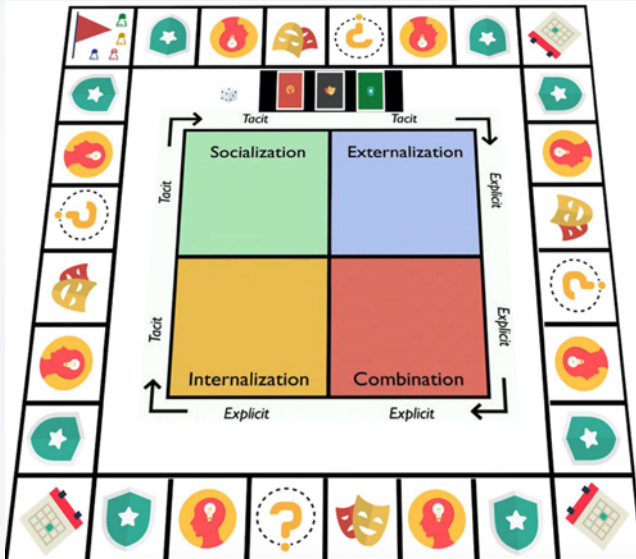
Future Research Direction



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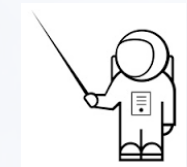
	The starting point of the "Journey". Each player needs to place his piece on this grid at the beginning of the game.
	The "Knowledge Management" grid. The player can draw 1 "Knowledge Management Card".
	The "Incident" grid. The player must draw 1 "Incident Card".
	The "Defense" grid. The player can draw 1 "Defense Card".
	The "Holiday" grid. The player cannot do anything in the next turn.
	The "?" grid. The player can roll the dice 1 more time to determine how many steps his piece can move. If the player's piece is moved to "Knowledge Management" or "Defense" grid, then he can draw 1 card for himself.

Mail Calendar Files People Settings



Conclusion

- Information Systems Audit & Control as related to security used to be assessed by traditional methods like exam, case study, evaluation of companies by reports, etc.
- Simulation and Game Design, as well as Animation allow students to be more innovative and creative, enhancing their own knowledge as well as those of target audiences (students, professionals).
- The semester end exhibition connects students with industry, training further their presentation skills out of classroom. Some games may be adopted for other universities in the world to use, for professional trainings, and for start-up.
- Students participate in international game competition as further exposure.
- Teaching research and publications to evaluate the validity of such assessment approach, may extend to future teaching in knowledge management, intellectual property protection, etc.



Publication