



# Integrating Game-Based Elements in Assessing Learning Outcomes



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# Purpose

- Extension of previous work
  1. Apply game mechanics to non-game activities
    1. CMN 450 (2 sect), ITM 445 (1 sect), and NUR 825 (2 sect)
    2. Carry out a longitudinal study of gamification
    3. Development of leaderboard API for D2L
    4. Disseminate the findings at conference





# Participatory Media & Communication (CMN 450)



- ~90 students
- Limited due to concerns about using XP instead of grades
- Game “Social Media Celebrity”
  - *Weekly solo quizzes and team quests to earn points*
  - *Dice rolling challenge once team completed quest for popularity points*
  - *Winning team received chocolates and party favours*



# Social Media Platforms

Platform	Cost	Max Experience per Quest
Facebook	0	5
Twitter	0	5
Instagram	10	7
Google+	10	7
Snapchat	15	8
LinkedIn	15	8
Vine	20	10
Pinterest	20	10
Blogging	25	12
YouTube	25	12
Reddit	25	12
Periscope	30	15
Flickr	30	15
Meetup	35	18
Foursquare	35	18
Website	40	20
Yik Yak	40	20
Twitch	45	25
Ello	45	25

Die Roll	Result	Popularity Points
1	Deleted in Time card	You receive a card that can erase one negative outcome of a role
2	On a talk show: Based on your great content, Ellen wants you to come on her show for a 2 minute segment	Earn 50 Popularity Points
3	Grumpy Cat Reposts You: Grumpy Cat reposted one of your posts. Marnie the dog favorited it! OMG all the internet animals love you!	Earn 25 Popularity Points
4	24 Hour Ban: You overloaded the internet and have been banned for 24 hours	Lose the ability to be online. You now must use no technology to complete your quests next week
5	A celerity followed your account!	Earn 50 Popularity Points
6	Errant Tweet: You posted something you shouldn't have – maybe you should talk to Justine Sacco about that	Subtract 100 popularity points
7	You've been Hacked! Shouldn't have made your password password1...	Lose one level, and the last platform(s) you purchased
8	24 Hour Ban: You posted something that got reported and have been banned for 24 hours	Lose the ability to be online. You now must use no technology to complete your quests next week
9	You've Gone Viral: Your post, photo, video has gone viral on the internet. You are an instant success but can you keep it up?	Earn 40 Popularity Points
10	Earn a free platform	Earn one platform of your choice free of charge



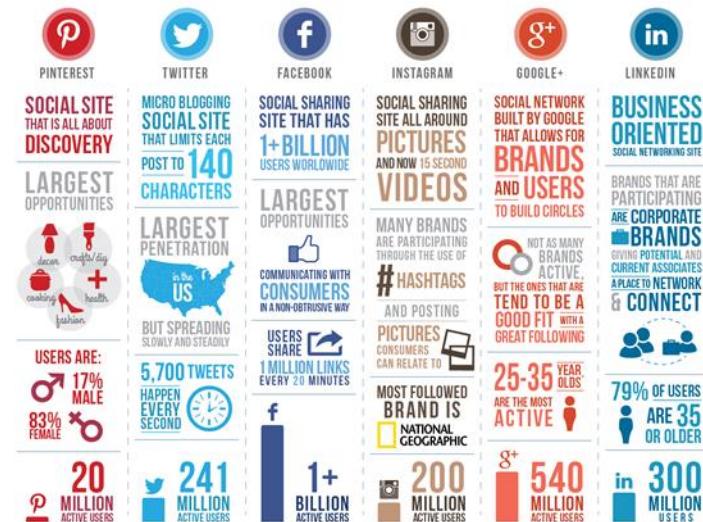
# Examples from CMN 450

## Snapchat (8XP)

Why Snapchat? Does it really make sense for you? Your publicist wants to know! Please write 300 words to explain to your publicist why you should be allowed to use Snapchat which will include how to use Snapchat, features of Snapchat, and 2 examples of celebrities or companies that use Snapchat with 50 words on how their use of Snapchat is effective.

## Periscope (15XP)

Write 500 words on what periscope is. Please include how periscope works, why your celebrity needs to use it, what they would use it for, and other important things you want your publicist to know.



Statistics as of 4.23.2014. Designed by: Lorraine - leveragingsigns.com



# Multimedia in Business (ITM 445)



- ~18 students
- Only XP points (no grades)
- Backstory & guilds for group project
  - Evil director steals all the files from Magical Company
  - Need to move up by gaining XP and stock options
- Weekly challenges (maker, history, state of the art)
- Guild presentations requiring gamification element
  - *Award XPs to classmates*





# Example of exercises

Item	Cost in stock options	XP enhancement	Bonus challenge
Camera	7	10	What is in a name?
Conference room	14	15	Impress the clients
Sound studio	25	20	It's all in the sound
Multimedia studio	35	25	The world in transition
Marketing consultant	47	40	The business of inclusion



# Example from ITM 445 (25 XP)

## Bonus Challenge (audio)

Make a power point slide that has your Toronto logo and the guy with flowers that you made in Fireworks. Add one 15 second home-made sound effect/music piece for each graphic. The sound should play when the graphic is clicked on.

Note: Each 15 second audio clip must be unique. One audio clip should be a happy type sound and another should be a sad sound. Remember these must be your own compositions/creations.



# Family Health Nursing (NUR 825)

- Course aim is to understand why and how to “think family” when delivering health care



# NUR 825 Format

- Seminar format
- Weekly readings - low percentage motivated to review in previous cohorts
- 2 sections of @ 50 students each



# Family Health Nursing Quest (FHNQuest)

**Gamification applied to course reading list:**

- Game objective - achieve **Level 4 FHN** by accumulating at least **40 XPs** by end of Week 11
- All those with 40 or more XPs received a prize (FHN lapel pin)
- Top three scorers in each section received an additional prize



# Preliminary Findings

- 80% of students read 40 or more peer-reviewed research or theoretical papers
- Some achieved over 50 XPs; some achieved as high as 60 XPs  
**(over expected requirement)**



# Student Feedback

- Students reported that FHNQuest:
  - Motivated them to read
  - Helped them write the final course Knowledge Reflection paper, thus realizing higher grades in the course



# Leaderboard

XP Test Course 1

Avatar	Name	XP
	Group 11	9
	Group 1	8.9
	Group 6	8.5
	Group 12	8.2
	Group 7	7

https://courses.spi.ryerson.ca/d2l/home/10733

My Home > XP Test Course 1

Ryerson University

XP TEST COURSE 1

Content Grades Assessment Communication Resources Classlist Course Admin

courses.spi (ryersontest)

\*\*courses.spi\*\*

- This is the Testing Environment -

News and Announcements

There are no announcements to display. Create an announcement.

Systems Maintenance

Calendar

Updates

Gamification

XP Test Course 1

Avatar	Name	XP
	Group 11	9
	Group 1	8.9
	Group 6	8.5

Google Apps



# Research Questions

1. What is the perceived impact on course engagement and performance?
2. What are the attitudes towards the gamification of a multimedia and social media undergraduate course?
3. What are the challenges in delivering a gamified course?





# Method

- 2 online surveys, week 6 and 12 of course
- 37 questions in five sections
  - *Overall enjoyment (Hans & Fox, 2015) and of specific gamification elements*
  - *Grades and perceived performance (de Byl, 2012)*
  - *We asked questions about overall impression of course style*

# Findings for Engagement

- Students more engaged and encouraged to participate
  - *“keeps student engaged”*
- Good use of time
- Liked competitiveness, teamwork
  - *“encourages teamwork and pushed me to learn in a more fun and interactive way.”*
- When quests were completed, students would seek more work to “get ahead” in game rather than leave classroom





# Findings for Interest in Course Material

- *“...made course content easier to understand”*
- *“I liked how it encouraged me to learn in a different way as opposed to the traditional method...”*
- Team-based competition may have facilitated socializers and competitors

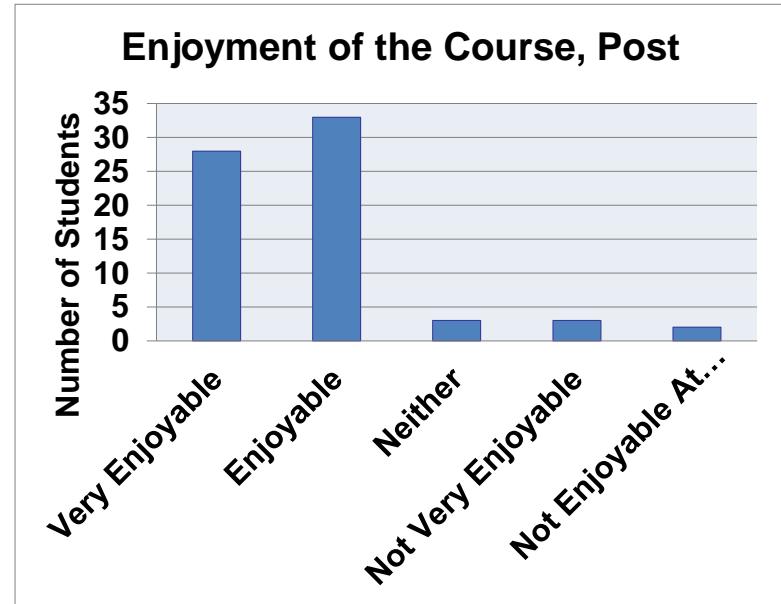
	Crew Names	Members	Trophies
1	Math Masters:D InviteOnly	50/50	67439 🏆
2	THE GOLD STARZ InviteOnly	35/50	54018 🏆
3	THE DESTROYERS!!!!!! Public	119/50	7944 🏆
4	PENGUIN InviteOnly	11/50	4191 🏆
5	The Top crew Public	50/50	3033 🏆
6	Always Best! InviteOnly	45/50	2764 🏆
7	the mutt care team Public	50/50	2278 🏆





# Findings for Course Enjoyment

- 72.5% rated course was enjoyable or very enjoyable compared with other non-gamified courses
- “*fresher*” or “*exciting*”
- “*it was a nice change from my other classes with 3-hour long PowerPoint lectures.*”
- “*...it had some resemblance to the games I play daily, which I use to destress and relax.*”
- “*...I am more awake for the rest of the day.*”





# Challenges

- Structure and department rules:
  - XP, instead of percent, may cause more appeals
  - Participation XP in CMN450 did not correlate to marks
    - Student engagement still had a positive impact on students
- Gamer vs non-gamer differences:
  - Goal: to include game elements that were accessible to non-gamer and keep gamers engaged
  - *Gamer: “There wasn’t really any sort of clearly defined goal or reward”*
  - *Non-gamer: “I find it difficult to understand. Great for people who love gaming.”*

NON-GAMER:



KLEENEX  
BOX

GAMER:



CLEAN  
XBOX



# Challenges (cont.)

- Content and Delivery
  - High preparation load
    - *2-3 challenges per week, maintaining leaderboard*
    - *Difficult to recycle challenges when tied to grades*



# Concluding Remarks

- Gamification was engaging for students regardless of implementation
  - *Students willing to do extra prep*





# Let's play a game!

## Territory Map





# Time to reflect





# Questions?





# Departing quote...

- “Long live gamification”

- student in CMN450



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