Playing Political Science: Leveraging Game Design in the Post-Secondary Classroom

Popular abstract: *The Multiplayer Classroom* describes how a course in computer game design can be based on the same structure as a computer game (Sheldon 2012). Students play this game through the entire term. Sheldon also had students take on roles based on Bartle's taxonomy of player types (Bartle 1996), leveraging it to structure group work and accommodating different learning types.

During the Winter term of 2015, I taught two courses in Political Science at the University of Calgary: Topics in Comparative Politics in the Industrialized World and Introduction to Public Administration. Having previously leveraged gamification principles in teaching extensively (Hellström 2015), operationalizing Sheldon's design was a logical next step. This paper describes that effort, including challenges and opportunities for how Sheldon's design can be used. The design requires a complete change in the point of departure for the course, from the implementation of Bartle's Taxonomy, to how the curriculum is presented to the students through potentially asynchronous game events rather than through the linear structure of the classic lecture series. These techniques will be familiar to those who are acquainted with computer games or live action role-playing (larp). The paper will also include some reflections on potential for future research in terms of how game-based learning could enhance the post-secondary political science classroom.

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1. INTRODUCTION

There is a growing discourse concerning the utility of games and gamification for learning. In *The Multiplayer Classroom*, Lee Sheldon describes how he delivered a course in computer game design as a computer game (2012). In his class, students form groups and take on roles inspired by Bartle's Taxonomy of player types, which then structures group work and accommodates different learning styles (Bartle 1996). I have used gamification and game-based learning extensively when teaching Political Science at the post-secondary level since 2013. Sheldon's design was thus interesting for me.

This paper describes my first implementation of a design based on Sheldon's work. It was used on two courses at the 400-level during the Winter Term of 2015. 463: Politics in the Post-Industrial States had two classroom sessions per week and about 80 students. 451: Introduction to Public Administration was an evening class with about 20 students. The position was an emergency appointment and both courses had to be designed at least partially from scratch.

The paper starts with an overview of a selection of scholarly literature on gamification and game-based learning contextualizing my previous experiences of these practices. It then discusses Sheldon and his use of Bartle's Taxonomy to provide a point of departure for how I operationalized them. Finally, the paper summarizes the outcomes, including what went right and what went wrong.

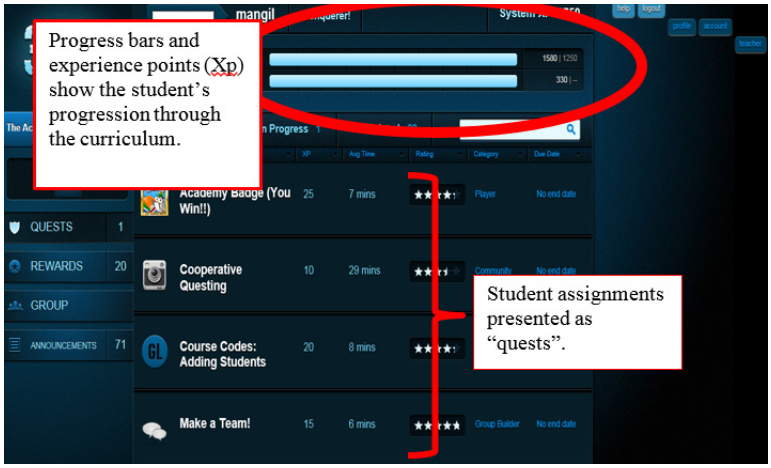
2. GAMIFICATION AND GAME-BASED LEARNING SCHOLARSHIP

Drawing upon game-design in teaching increases student engagement (Larsen McClarty, et al. 2012; Mochon and Norton 2012; Papastergiou 2009; Hattie 2009; Gee 2007; Prensky 2005; Bates and Poole 2003). The web tool 3dGameLab (3dgamelab) was developed to facilitate gamification (Deterding, et al. 2011) and game-based learning (Sheldon 2012). The student user interface is inspired by computer games, as shown in Figure 1 below. It provides instructors with functions that facilitate fast feedback on submitted student assignments and increased transparency in grading, both of which are important for enhancing learning (Prensky 2005; Sadler, 2005).

I have used this web tool since 2013 to teach courses at the 200 to 400-level, class sizes varying between 8 and 75 students. The syllabus explains the design to students like this:

> **Completing quests:** These tasks have no due date for submission, giving students maximum time to plan their own work. When a quest is completed, it will be submitted to an instructor for approval. The instructor will review the work. If the requirements have not been fulfilled, the instructor will return the quest to the student with feedback on outstanding work that needs to be completed for approval. There is no limit to the number of re-submissions a

Figure 1: 3dGam



> student can make. When a quest is finally approved, students will gain experience points, Xp, which reflect the learning achievement. (Hellström, Winter 2015)

Students start the term at 0 experience points. The assignments, often based on old exams and study questions from readers, were organized into quest trees, where completing one assignment revealed new options for students. The opportunity to choose their own paths through the curriculum provides students with agency, which is important for learning (Glantz 2014; Gee 2007; Bates and Poole 2003; Sorcinelli 1991). The quest trees were structured to first expose students to basic concepts, and then compel them to apply those, a design consistent with Bloom's taxonomy of learning (Krathwohl 2002).

For example, the student would first watch a YouTube video on types of Non-Government Organizations (Hellström 2013), worth 10 Xp. The format allows students to replay the lecture if needed (Owston, Garrison, & Cook, 2006). After that, the student would have to peruse the Internet to find civil society organizations and explain what type of social capital they generate, worth 50 Xp. Some challenging tasks, like writing an academic paper, could be done across several linked quests.

The asynchronous design allows students more power to schedule their work, which they appreciate (Garnham and Kaleta, 2002). Moreover, the game mimicking formative assessment design further empowers students by reducing the risks of failure (Zimmerman and Cunningham 2011).

Grades were calibrated based on the experience points and rewards the student accumulated during the term, illustrated in Table 1:

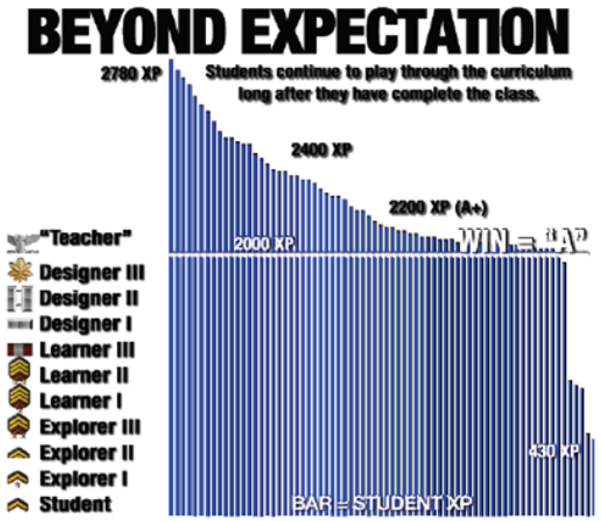
Having moved lectures online, classroom time could be used more effectively (Garnham & Kaleta 2002; King, 2002; Bauer 2001). I used it for live action role-plays (larps) to add authenticity to the course, which also facilitates learning (Larsen McClarty, et al. 2012; Prensky 2005). In political science, the Model UN constitutes a classic example.

I developed several stand-alone scenarios to explore different political systems. Students were provided an instructional video covering the system in question to prepare. Before play start, they were introduced to the roles and objectives of play. For the German Parliament scenario, it would be the party caucuses embarking on negotiations to create a coalition government. The class always ended with a ten or fifteen minute debrief structured by study questions to link their experiences to the curriculum. Finally, they had to submit a post play report through the web tool to gain the experience points for their role-play learning.

Table 1: Grade requirements, 230 Introduction to Comparative Politics, Global North, Fall 2013, University of Alberta

Total XP	Letter Grade	Grade Point Value	Description
2500 + Academic Writing Badge + any 1 badge	A+	4.0	Outstanding/ Exceptional
2000+ Academic Writing Badge + any 1 badge	A	4.0	Excellent
1750+ any 1 badge	A-	3.7	
1600	B+	3.3	Very Good
1500	B	3.0	Good
1400	B-	2.7	
1300	C+	2.3	Fully Satisfactory
1250	C	2.0	Satisfactory
1200	C-	1.7	Minimally Satisfactory
1100	D+	1.3	Adequate
1000	D	1.0	Minimally Acceptable
0	F	0.0	Failure

Figure 2: Haskell (2013) Figure 4: "Pre-service teacher candidates level up and remain persistent after earning 'A'," p. 4.



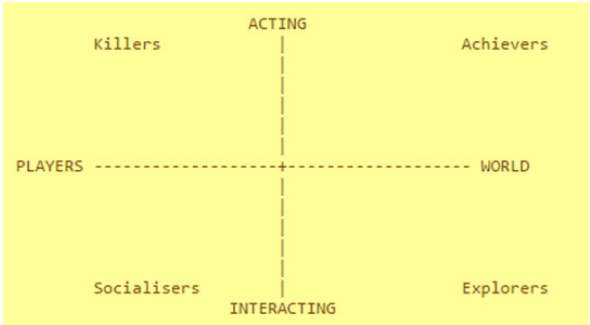
I, too, found that grades and enthusiasm went up significantly. Students asked for more curriculum and engaged in research beyond assigned readings. Some accumulated 2000 XP -- the threshold for an A grade -- in a matter of weeks. Of those, some kept working, like Haskell's students. Others disengaged, though I cannot say why. Possibly, they needed to focus on other courses. Class demographics do not allow conclusions about how age might matter for the perception of the design. Only two students might have been older than 50. Only a handful of the about 200 students I have taught over 8 courses expressed strong dislike for the design. Even so, more could be done. I felt I had insufficient intrinsic motivation. To find that, I turned to Bartle's Taxonomy and Sheldon's *Multiplayer Classroom*, presented below.

3. BARTLE'S TAXONOMY

This taxonomy divides players into different types depending on the type of game play they found attractive:

- Achievers aspire to succeed with game-related objectives, like accumulating great in-game wealth or rising to the highest level.
- Explorers want to discover as much as possible about the game world, for example how it functions and what makes it work.
- Community builders are primarily focused on interacting with other players and role-playing. Their goal is to build lasting relationships with them.
- Killers want to win over other players, showing their superiority by destroying their avatars or by competing and winning against them (Bartle 1996).

Figure 3: Bartle's Taxonomy, from "Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs" (Bartle 1996).



4. SHELDON'S *MULTIPLAYER* CLASSROOM

In *The Multiplayer Classroom*, Sheldon presents one design to structure the curriculum as a game (2012). Like I did, he made grades a function of accumulated experience points. However, he also drew upon MMORPGs, as these have persistent worlds, which are highly conducive to a continuously immersive and engaging classroom experience, i.e. strong intrinsic motivation. Thus, students were assigned to teams with the task of writing the final project: a video game proposal. This design provided the students with a "plot hook" powerful enough to sustain engagement throughout the entire term, but also a clear division of labor and meaningful roles for each student to play within the team.

The number of team positions depended on the course iteration:

Table 2: Sheldon's team positions From Sheldon, 2012, *The Multiplayer Classroom*.

Early Label	Late Label w/ Sheldon's motivation	Responsibilities
Designer	**Mage:** there is magic in finding the inspiration for an idea that can become a game	Went to the student with the winning team proposal
Writer	**Ranger:** writers are explorers, building the path for others to follow	Writing the story of the game
Producer	**Necromancer:** Sheldon provided no motivation for the choice of new title	Arranging meetings, project progress, researching game development, budgets, and so on
Tech Lead/ Programmer	**Warrior:** corresponds to the killer type, as it involves destroying bugs	Solving the game's technical issues
Art Lead	**Healer:** art has soothing properties	Illustrating the document's text
Marketing	Later dropped	Marketing plan, studying the competition

I would argue that as the Marketing person has to think outside the box, work through subtlety and defeat the competitors through the creation of perceptions rather than brute force, the position might correspond to the rogue/thief character class, another classic role-play trope.

When describing these positions, Sheldon refers to Bartle's Taxonomy (2012, 101-102), and while there are more positions than taxonomy types, there are significant connections. The warrior corresponds to the killer, the healer to the community builder, and the ranger to the explorer, for example. He goes on to argue that "...your class is divided into these four types as surely as any MMO. When you design your game, it would be folly not to include equal gameplay for each of them" (Sheldon 2012, 102). When the game design accommodates different player types in this fashion, it also presents potential pedagogical benefits, as the recognition of differentiated game engagement is also an implicit acknowledgement that learning styles vary.

5. REDESIGNING THE COURSE INTO A MULTIPLAYER CLASSROOM

The engagement effect made me interested in drawing on Sheldon's use of "character classes" and continuous role-play. The diegetic setting varied considerably between the courses because of the different topics. In the comparative politics course, a course objective was to identify differences and similarities in public policy, discourse, and political culture between different post-industrial countries. This objective meant that it was highly conducive to situating student roles in different countries. Students were divided into workgroups that assembled around different tables in the classroom based on countries.

Table 3: Character class positions for Poli 463: Politics in Post-Industrial States

Position	Archetype/Responsibilities
Politician	The **Killer**, wants to win and impose their will on others.
Administrator	An equivalent of the **Community Builder** in the sense that this position was tasked with providing support to the politicians.
The Journalist	Representing the **Explorer**, the journalist had the task of investigating what the other actors were up to.
Activist	Member of an NGO or a social movement, tasked with being the voice of their members in politics. Students had to pick three demographic groups from a worksheet (inspired by the constituencies in the computer game Democracy 3). The position was the equivalent of the **Thief**, in the sense that activists from interest groups often exercise influence in a way that is not entirely transparent to citizens.
Academic	The collector of knowledge, thus an equivalent to the **Wizard** in Sheldon's design.

The goal was to have each work group populated by at least one student in the role of one of the five "character classes," including an equivalent of the Thief archetype, which for this class became the character class positions depicted in Table 3.

The positions came with unique "powers" related to the generation of either political Capital or Scandal, which the Politicians needed to launch and implement policies.

In the Public Administration course, the roles inhabited public agencies on different levels of government. The design differentiated the "classes" by status point accumulation for career advancement:

Table 4: Character class positions for Poli 451: Introduction to Public Administration

Position	Archetype/status generating mechanism
Director	The **Killer** led the group work, which would gain status by expanding the funding and mandate of the agency.
Connector	**Healer** generated consensus for a decision in the group.
Investigator	**Explorer** acted as a user advocate and gained status if the user's perspective was adopted for programs implemented by the organization.
Activist	Thinking outside the box and getting a new plan adopted by the others.
Scholar	Conducting analysis, grounding decisions in research and being proven correct on evaluation of policy.

The generation of XP was for the most part disconnected from narrative generation. Students gained XP by attending and submitting post-play reports. Also, the asynchronous, non-diegetic path through quest trees organized by topics was retained from previous courses.

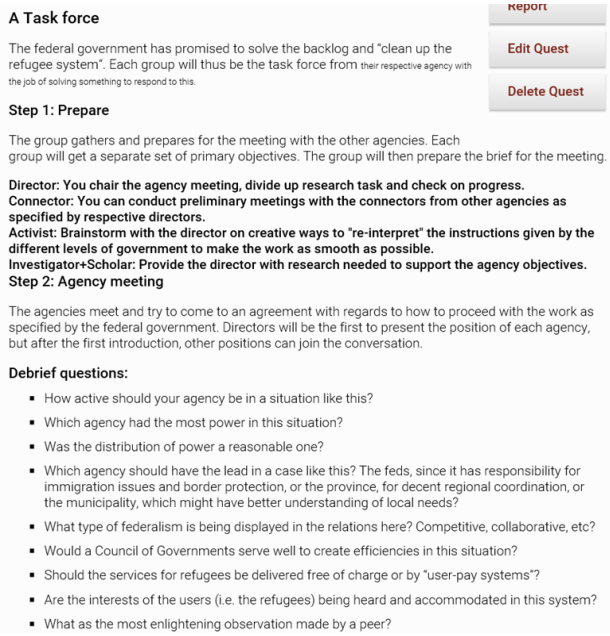
My rationale for this separation was that I wanted to keep a distinction between the student and the role; students may learn a lot when their roles fail to achieve their objectives. My design choice may be erroneous and it would be interesting to explore how narrative and experience point accumulation may strengthen each other.

Creating the continuous narrative met one principal challenge: how much power should students have over it? With power, they might turn it away from course topics. On the other hand, infringing upon their agency might undermine intrinsic motivation and engagement. Ultimately, the urgency of quickly producing content prompted me to do pick the latter for the sake of expediency. To create that content,

group workshops from previous courses were re-designed into role-plays, regardless of their narrative strength. As a result, transitions between topics in 463 were more contrived than I wanted. It was less so in 451 as I played the superior of the student roles who could assign them tasks. That course also had useful supplemental instructor material which included role-play scripts that were easy to adapt.

Each classroom session thus constituted an "episode" in the narrative. Figure 4 is the briefing for the "Episode 1: A Task Force" role-play in the 451: Public Administration course.

Figure 4: Episode 1 quest instructions for Poli 451: Introduction to Public Administration



6. EXPERIENCING OF IMPLEMENTING THE DESIGN: DISCUSSION AND CONCLUSIONS

Student reactions were consistent with previous experiences. The vast majority --about 80 per cent -- expressed strong enthusiasm for the design. That said, the course evaluation scores were the weakest I have received since starting with gamification and game-based learning. Previously, my average rating on the question "Overall, this instructor was excellent" was about 95%. For these two courses, the rating on Overall Instruction averaged about an 85% rating. In both courses, the Content Well Organized got the lowest rating, with student comments mostly focusing on the improved role-plays and quest instructions. No doubt, this reflects the time constraints of the emergency appointment.

In hindsight, the design was flawed. In 451, character classes and status accumulation system gained little traction among students, likely because career advancement had little-to-no narrative effect. Classes in the 463 course had clearer motivations, and thus more meaning. However, the political capital gameplay remained unclear for students. Likewise, the railroaded episodes did little to enforce how the "character classes" affected inter-character dynamics. A potential remedy could be to change the point of departure for the course. The students' choice of character class could also determine their path through the quests.

Care is needed when re-designing the course. Instructors should be able to focus on assessing learning, which means little time for administering mechanisms like in-game status accumulation. Thus, such systems need to be simple to track. One possible solution which I have yet to explore is to let students design that as part of their course work, where they have to produce a system that is a decent political simulation. This technique makes the game design process itself a potential learning experience, while off-loading the instructor.

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BIO

Mikael Hellström holds a Ph.D. in Political Science. His primary field of research concerns immigrant community mobilization in labour market integration and public administration thereof. He began teaching at the post-secondary level in 2010, and started pioneering the use of gamification at his department in 2013. Hellström has been invited to present on his experiences with active learning by the University of Alberta's Faculty of Graduate Studies and Research as well as various conferences. He has also collaborated with the University of Alberta Centre for Teaching and Learning and the Arts Pedagogy Research and Innovation Laboratory.