Teaching Teachers about Gamification through Experience:  
Gamifying a Graduate Course on Digital Learning

NOTE: This paper may best be read along with the accompanying PowerPoint, which contains images of the various elements in the Classcraft gamified LMS.

FURTHER NOTE: I am not affiliated with or paid by Classcraft or associated companies in any way!

Background and Purpose

Since the early 2000’s, when Gee (2003) and others brought gaming and gamification into the respectable scholarly conversation, the influence and spread of gamification (defined as "the use of game design elements in nongame contexts,” Deterding, et al., 2011, p.1) has grown rapidly in business, marketing, and even medicine, but perhaps in no other field as quickly or broadly as in education (Hamari et al., 2014).

Teachers at many levels are currently being urged to gamify their courses because gamification “boosts enthusiasm” and “lessens disruptive behavior” (https://education.cu-portland.edu/blog/classroom-resources/five-benefits-of-adding-gamification-to-classrooms/), yet they are rarely given time or support to understand the complexities of how gamification can affect motivation or develop effective gamification strategies to fit their classrooms and students. As a result, as happens all too often with new educational fads, gamification is often implemented in a superficial, mainly behaviorist, fashion that can over-emphasize competition and actually impair intrinsic learning motivation.

For these reasons, gamification is one of three focus topics in EDIT6150E: Introduction to Digital Learning, a required course in our online IT master’s program for teachers at (blinded). Until this year, teachers in this course learned about gamification by reading articles and looking at examples of classroom gamification, but few had ever participated in gamified instruction themselves.

To give teachers the opportunity to experience gamified learning and also to reflect on their experiences both individually and with fellow teachers, and thus develop a deeper understanding of the pros and cons and issues involved in various aspects and types of gamification, this fall I redesigned EDIT6150E as a fully gamified course. In order to include typical surface elements of gamification (e.g., avatars, levels, points) and also the deeper gamification elements that more meaningfully impact learning, such as "freedom to fail, rapid feedback, progression, and storytelling" (Stott & Neustaedter, p.1), and to give them experience with a gamification program they could use in their own classrooms, I decided to use Classcraft (www.classcraft.com/), a fully gamified LMS designed for middle and high schools.

Findings

Design issues
Although gamification is growing in post-secondary education (Toyama, 2015), there is no software yet available to gamify learning specifically at this level. I chose Classcraft in part because it incorporates quests (i.e., learning modules) that focus on learning activities, in addition to the behavior management elements central to most K12 gamification programs (e.g. Class Dojo). But even in Classcraft, I found that behavior management features were so closely intertwined with the gameplay that I was forced to modify, even distort, some elements of the system and to abandon others entirely.

For instance, Classcraft contains its own assignment submission and grading system, but our university requires that online assignments be submitted, graded and retained for posterity in eLC (a version of D2L), our university-sanctioned LMS. So students had to receive their assignments in the quests in Classcraft, but turn them in to our class site and get grades and comments on eLC. I also created a back-up list of the assignments for each unit in eLC, because I was worried some students might be overwhelmed by Classcraft. All this created a degree of confusion for some students, who kept looking for assignments in different places, as you will see in the student comments below.

Similarly, in the original design of Classcraft, Hit Points (HP) and Experience Points (XP) are given for certain positive and negative classroom behaviors respectively, all chosen by the teacher, and intertwined with character powers, team rewards and penalties in a beautifully complex, flexible and balanced system. However, classroom behavior is not really an issue in an online graduate class, so I tried to adapt the Experience points (which are needed to "level up" your character) and use them for grade points instead, since my course is built around a point-grade scale. But that resulted in a dual entry system, where I had to first grade an assignment in eLC and then award XP by hand to each student in Classcraft. Since students were completing assignments at their own pace, and thus at all different times, I inevitably fell behind on awarding the XP, which frustrated some students who were really working to "level up" their characters, in order to get access to new pets and better armor for their avatars!

A subtler issue, with implications for both K12 and higher education pedagogy, was the difficulty of creating choices and alternate pathways within quests. Even though the Classcraft support materials advocate for increasing student options and choices, a straight-line, linear quest was by far the easiest to design. Offering more than a simple two-path choice was particularly difficult and required creating “waystations” and other work-arounds within the program. This tendency towards linearity is only one of the pedagogical “bad habits” that gamification programs may unwittingly encourage, along with implying, through constant rewards, that learning itself is not interesting, and the corollary tendency to turn learning into a competition.

On the plus side, designing within Classcraft almost forced the employment of the “flipped” classroom model that I habitually use in my courses anyway (Knapp, 2018). When all the instructions and materials for course learning activities (including recorded video lectures) are inserted within independently-completed quests, it becomes almost inevitable to use class meeting time, whether online or F2F, for discussion and active exploration of what has been learned.
Student responses

**During the class.** I noted three rather surprising things that happened as I taught this class in a gamified version for the first time last Spring.

--After the first module completion, a number of students independently volunteered that completing the required readings and activities felt easier, less burdensome or “less intimidating” when encountered one-by-one as steps in the first "quest," versus as a whole list of requirements on the page of instructions I would typically have provided. This unexpected reaction may have implications for non-gamified online instruction as well.

--Many students tended to complete work faster and earlier. For example, while most students in previous sections of the class tended to complete activities or post reflections on, or maybe a day before, the day they were due, many students in this gamified section were posting well ahead of due dates, and even requesting access to future modules (quests) before they would normally be assigned. It seemed as though the sense of accomplishment that came from completing each step of a quest, plus the trivial rewards ("gold pieces" that enable them to purchase armor and pets for their avatars) were surprisingly motivating, which relates to the final thing that surprised me....

--Some students REALLY cared about the game; they worked to earn extra gold pieces by "training" their pets, and they were notably irritated when I did not award XP as quickly as they completed assignments (confession time: I fell way behind on this!). Several also volunteered how much they were enjoying the "storyline" I made up to go with the "quests" (and I am no great shakes as an author....). Every single student took the time to customize their avatars, choosing appearances, clothing, magical powers, backgrounds, etc.

**On the final course evaluations.** There were 18 students in the course, but only 10 completed the final course evaluation, which is unfortunately typical since we switched to a new, non-instructor facilitated online course evaluation system. These final evaluations, especially in regard to the gamification of the course, were a bit mixed. Students liked the course, giving it a 4.2/5 overall, but this was significantly lower than the 4.5/5 rating on section of the same class taught the previous year without gamification, and also lower than my typical class rating, which ranges from 4.5-5. Table 1 below lets us look deeper into the factors influencing this overall rating (NOTE: Highlighted questions were specially added to the final evaluation for this course, and were not figured into the course overall rating.).
Table 1: Student ratings of various instructional factors on the final course evaluation

<table>
<thead>
<tr>
<th>INSTRUCTIONAL FACTORS</th>
<th>#1s</th>
<th>#2s</th>
<th>#3s</th>
<th>#4s</th>
<th>#5s</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>The course was effectively organized.</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3.90</td>
</tr>
<tr>
<td>Assignments and activities were clearly related to course goals.</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>4.30</td>
</tr>
<tr>
<td>The instructor was knowledgeable and well-prepared.</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>4.30</td>
</tr>
<tr>
<td>Assignments and activities were useful for helping me learn.</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>4.30</td>
</tr>
<tr>
<td>New skills and/or concepts were presented in ways I could understand.</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>4.30</td>
</tr>
<tr>
<td>The instructor was open to students' questions and comments.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>4.20</td>
</tr>
<tr>
<td>The instructor provided useful feedback on student work.</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>3.70</td>
</tr>
<tr>
<td>Course work was evaluated according to clear expectations.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>4.20</td>
</tr>
<tr>
<td>This course challenged me to think and learn.</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>4.20</td>
</tr>
<tr>
<td>This course should be offered in Classcraft again next time it is offered.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.50</td>
</tr>
<tr>
<td>Taking the course through the Classcraft LMS has helped me gain a better understanding of the pros and cons of gamification in instruction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.88</td>
</tr>
</tbody>
</table>

(ratings are from 1-5, lowest to highest)

Looking at the range of student responses to these more specific questions, it is clear that students were rather divided in their feelings about the class, especially about whether it should be offered using Classcraft and in the two regular areas where some were least satisfied--those related to organization and instructor feedback.

Students' written comments on the final evaluation evidenced the same division about organization, and clarified where the organizational problems lay, and how they affected students' feeling about Classcraft itself. Some simply found the gamification off-putting or too confusing:

*Classcraft negatively impacted my experience in the course. It made it harder to complete assignments rather than more fun.*

*For me, the Classcraft experience felt more like a checking of boxes.*

Many attributed their confusion not to Classcraft specifically, but rather to having to use two different LMS's for different purposes.
You need to narrow your focus on what tools you use for teaching, there were two competing class management systems ... which led to a lot of confusion on the student's end because we didn't know where to look for assignments and communication. You should pick either eLC or Classcraft (I'd vote eLC) to give assignments from.

I think Classcraft on its own would have been great- but it was the combination of ELC and Classcraft that made it difficult to know where to find assignments.

I think with the incorporation of Classcraft into this course, the overall instruction became just a little muddled.

I did not like having things in two different places. Some things were done on eLC and some on Classcraft. Many assignments and directions were confusing because I was not sure where to find instructions and submit them.

I think there just needs to be a stronger connection between eLC and Classcraft. The grading system was somewhat lacking, so that could be stronger, perhaps?

Yet others found the Classcraft experience both easy to follow and satisfying:

- Liked the gamification and how tasks were broken up.

- The idea of gamification of the classroom made it easy to navigate to see what needed to be accomplished and the little cheat sheets were helpful as well.

- I loved the format with Dr. Knapp offering class sessions regularly and office hours. The innovative design of the course was something I have never seen but really liked.

- I really enjoyed the use of Classcraft in this course. I think there are just a few kinks to work out, understandably as this really has not been done to this extent before. I think it should be done again.

- I enjoyed learning about the [Classcraft] system and would love to incorporate it in my own classroom. It was definitely fun!

- The design of the course exposed me to new methods of instruction that I did not know about, and playing through the Classcraft setup helped me actually understand the viability of gaming in education, as it truly worked here.

- I enjoyed the way this course was organized in Classcraft. It seemed well-planned and well thought-out. I also know how much work it was to get everything uploaded into Classcraft, via the multiple quests.

The issues with instructor feedback were more surprising to me, since I gave the same detailed, personal feedback on each assignment as I always do, and the comments did not focus on this either, except for one, that called me out on losing track of the XP, saying, "I spent several weeks at the beginning of the semester worried I was failing because my XP never changed, until I eventually gave up on expecting it. Many of the features of Classcraft were never used because of this, there was effectively no point in the gold or pets, so we never really got the rewards that gamified learning is supposed to feature." This leads me to suspect that it was the lack of timely rewarding of XP that made some students feel as though they weren't getting
enough feedback, even though grades and comments were posted as usual on eLC in a timely fashion. But again, perhaps these students were looking to the gamified rewards in Classcraft to judge their own learning in the class, rather than the actual grades and conceptual comments in eLC?

**Grades.** The grades students earned were not significantly affected by the gamification, even with its attendant confusion for some. The class average was 95%, as compared to a 93% average in the earlier section of EDIT 6150E that was not gamified.

**What I Have Learned So Far**

**From the design process**

◊ Doing gamification takes a lot more time and effort than I would have guessed! This was compounded by the heavy behavioral emphasis found even in Classcraft, which was the least behavior-oriented of the gamified LMSs I could find. My struggles to adapt Classcraft to a post-secondary context and population suggest that a gamified LMS specifically designed for higher education may be needed if gamification is to spread beyond “pioneering” professors who are willing and able to design/modify systems for themselves.

◊ It is difficult to design a gamification system that does not inadvertently privilege straight-line, linear sorts of assignments. Classcraft (and other gamified LMSs) really need to put some thought into making it easier for teacher/designers to offer students choices and alternatives.

◊ Because it almost required a Flipped Learning model, a gamified LMS might help nudge instructors away from the stand-up-and-lecture pedagogy still so prevalent in higher education (Chaudhury, 2011).

**From the students**

◊ Using two LMSs, one gamified and one not, is not at all ideal (even though it was and will be unavoidable). It is really important to streamline the organization of the two together as much as possible and reduce confusion. Redundancy of instructions in both LMSs may help or hurt this process??

◊ If you promise points and rewards in-game, even to graduate students, you'd better keep those promises (better than I did!).

◊ When long lists of tasks are included in a several-weeks long module, as is typical in online course design, to enable students to be more self-paced, this may also be (unintentionally) intimidating or discouraging. Meeting these tasks one at a time, in a gamified environment, may somewhat relieve the sense of "too much to do" and thus make learning activities a bit more enjoyable and less intimidating. Since the gamified environment makes it easy to complete a single task and get some (small) payoff from
each task (instead of simply seeing the long list of tasks still to do), this may also encourage students to spread out task completion, instead of leaving it all to the final day or two, which can only benefit learning.

◊ The fantasy and role-playing aspects of Classcraft's gamification (perhaps helped by their quality, unchildish graphics) are enjoyable and add a welcome element of playfulness to learning, even for many grown-up, serious, busy serious graduate students. Since I deliberately did not include a "leaderboard" or any aspect of competition in my design, these factors (which have some serious downsides for some students) do not appear to be necessary to create a gamelike, "fun" environment.

Looking ahead

I often remind the teachers who are students in my classes that "the first time you try something, it probably won't work very well." Taking my own words to heart, I am going to teach this course using Classcraft again in the Spring. However, I am going to do some heavy thinking and redesign to disentangle and clarify the two LMSs I will still have to use (Classcraft and the university's eLC). I will also take a solemn vow to award all Gold Points and XP as soon as they are earned!!

If you would like to play through some of the "quests" from this class as a student, to get a better idea of Classcraft, just email me at nfknapp@uga.edu, telling me the email and name you want to sue, and I'll be happy to add you to my "sandbox" class roll--Classcraft is totally free for all students (and is only $100/year for the premium version for teachers, for as many classes and students as they want).

You can access an online bibliography of research on gamification, including all the references from this paper, at https://docs.google.com/document/d/1yq-IBbMqWmaaMUj6nEfpayajTUeNV8WFiOvdsGU1siU/edit?usp=sharing.

If you have suggestions of resources to add to this bibliography (please!), an experience with gamification you'd like to share, questions you'd like to discuss further, or ideas for collaboration on research related to gamification in higher ed, please email me at nfknapp@uga.edu. I'd love to hear from you!