Role-Playing Gamification Technologies with Adult Learners

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ABSTRACT

This quantitative scholarship of teaching and learning (SoTL) research study examined the impact of Classcraft, an online role-playing game that awards points and digital rewards to individuals and groups based on random content-related challenges, learning quests, boss-battle quizzes, and student avatar interactions, and whether this motivates, engages, and leads to satisfaction in adult criminal justice students at a western-Canadian institution. Specifically, the role-playing digital game Classcraft was integrated into a first-year applied English and investigative writing course. The game-based elements incorporated by the instructors, through Classcraft, reflected the content of the writing course. Learners earned health, experience, and gold points in class and during their own asynchronous "playing," individually and with their teams, that led to receiving "real-world" prizes, in some cases. Based on a survey with Likert-style and open-ended questions, the data revealed that most elements of Classcraft motivated and engaged participants. The most impactful finding was that Classcraft promoted teamwork and problem-solving abilities. Little research has been conducted in post-secondary settings related to the implementation of Classcraft, and it is evident more research is required in other post-secondary learning contexts. Post-secondary educators and programs are constantly looking for ways to engage, motivate, and as a result, hopefully retain their learners, so examining the impact that role-playing gamification technologies may have, especially in content-heavy and challenging courses, is worthy of exploration.

Keywords: role-playing technologies, gamification technologies, Classcraft, student motivation, student engagement

INTRODUCTION

We developed and taught a first-year writing course for criminal justice students at Lethbridge College. The content of the course has historically proven to be challenging as it focuses on analyzing information and communicating clearly in a variety of written formats. The course content is very relevant to the learners who are endeavouring to enter the field of public safety; however, instructors of this course have noted some students lack motivation and are disengaged. As a result, the researchers committed to learning about potential engagement strategies that could be incorporated to enhance their learners' experiences.

Using traditional teaching methods and techniques can lead to students who are bored, unmotivated, and disengaged (Bond, 2015; Papadakis, 2016). Also, people are more interested in learning when there is a degree of control and autonomy (Perdue, 2016). As a result, gamification and game-based learning technologies were studied to determine if these could potentially enhance student autonomy, relatedness, and competence, all required elements that self-determination theory contends enhance student intrinsic motivation (Deci & Ryan, 2008). Other research has affirmed that including game elements in non-gaming contexts can improve student motivation and engagement, especially when compared to using traditional lectures (Al-Azawi et al., 2016). More recently, digital games have become part of people's lives, so they are powerful motivators in educational settings (Papadakis & Kalogiannakis, 2017).

In previous semesters, we had introduced Socrative, Kahoot!, and Quizizz in this particular course, and received positive feedback from our learners. However, we wanted a gamification technology that extended beyond one lesson and introduced the role-playing element of gamification, while encouraging teamwork. We reviewed several different gamification technologies and sought to implement one called Classcraft into our criminal justice writing course. Classcraft, an online role-playing game, was integrated to determine its impact on student satisfaction, motivation, and engagement. This gamification technology encourages teamwork, cooperative problem-solving, and interaction, so these components were assessed in the three course offerings we taught.

With respect to other available gamification technologies, Gradecraft and Rezzly were closely considered. Gradecraft is a fully functioning learning management system (LMS). We already had access to a robust LMS as our institution requires us to use the Canvas LMS actively. Canvas affords many of the features that Gradecraft does, such as the ability to add badges, incorporate leaderboards, and view student analytics. Badges, leaderboards, and analytics were integrated into the three courses studied through the Canvas LMS. A lot of the gamified components in Gradecraft are structured to be attached to formal grades, rubrics, and assignments. This research sought to integrate a tool to enhance student motivation

and engagement without linking participation in the gamification technology to course grades. Brown et al. (2017) determined that studying engagement separately from academic performance was necessary because the two do not necessarily have a relationship; in addition, motivation has also been shown to be a separate concept (Cook, 2006; Ryan & Deci, 2000). There is definitely a place for many gamification tools depending on the learning context, but Classcraft most closely aligned with the goals of the course being studied and the intent of this research. In addition, Classcraft is a Canadian-based tool that requires synchronous, face-to-face interaction (as the random events and boss-battle challenges were completed this way), so it varies greatly from Gradecraft.

Rezzly is more similar to Classcraft than Gradecraft. In a review from another educator (Gonzalez, 2019), students preferred Classcraft. In this study, we were both learning the nuances of gaming terminology (like XP, GP, and HP) and the character roles (like mage, warrior, and healer), and we found Classcraft more user-friendly than Rezzly. The random events in Classcraft fit with our idea of facilitating random events based on course content, and the new "quests" feature from Classcraft was appealing as well. Classcraft also added the feature of the three character classes (mage, warrior, and healer), which the students seemed to enjoy and which encouraged collaborative learning. These character classes are not an option with Rezzly. Overall, we chose to incorporate Classcraft because we were curious about whether it could be used in adult learning settings to enhance student motivation and engagement.

The three course sections of the applied English and investigative writing course involved in this research were delivered face-to-face with approximately 80 students. These students were in their first year and second semester of a two-year college diploma in a criminal justice program. A self-report student survey was deployed, near the end of the Winter 2019 semester, to gauge whether there were changes in student motivation and engagement related to gamification. In this article, we provide an overview of our SoTL project, summarize key findings, and include a reflection from one of the researchers, all with the intent of sharing an instructional tool that can be implemented in a variety of contexts across disciplines. At the 2019 Symposium for SoTL, we presented some of our processes, research, findings, and reflections; however, this is a more in-depth exploration of what we learned and how it has impacted our instructional approaches and, most importantly, our learners.

SoTL Project Overview

The purpose of our quantitative, descriptive SoTL research was to examine and describe student satisfaction, motivation, and engagement when Classcraft was used throughout the semester in an on-campus writing-focused course. We sought

to determine if using Classcraft as a teaching strategy can have an impact on team building, interaction, and collaboration in face-to-face settings**.** Since research is informed by a research gap, we also wanted to address the gap in empirical research around using Classcraft in post-secondary classrooms and to share findings with other instructors, course designers, programs, and institutions to contribute to evidence-based gamification teaching strategies. Additionally, we sought to understand how earning points in the digital world via Classcraft could be recognized with real-world experiences and rewards. The last objective was for two instructors to work collaboratively to learn about the functions, powers, rules, and other features Classcraft offers to create gamified learning environments that span one semester and reflect scholarly teaching principles.

Literature Review

Most published literature about Classcraft does not focus on the use of this game-based technology in higher education with adult learners (Sanchez et al., 2017; Papadakis & Kalogiannakis, 2017; Bretherton et al., 2016; Hanghøj et al., 2018). Using game-like situations changes educational experiences for students, so they derive more pleasure from the process (Sanchez et al., 2017)

The roles of instructors and their adoption of the digital role-playing game Classcraft are key to students' experiences (Sanchez et al., 2017). With Classcraft, new interactions were experienced, as the class setting was reconfigured (i.e., students "save" others); interactions were therefore redefined (Sanchez et al., 2017). Reflexive space resulted, and autonomy was fostered because of immediate feedback and the ability for students to test their ways of behaving (Sanchez et al., 2017).

Focusing on the interactions, and not the game itself, is a new perspective in educational game design that requires further research (Sanchez et al., 2017); this aligns with user-centred design principles (Norman & Draper, 1986). Proper instructor preparation, student training, and strategic implementation are all crucial in realizing the potential of gamification (Papadakis & Kalogiannakis, 2017). Generally, support, tools, and methodologies are lacking for teachers to implement gamification tools. More research was required to understand the potential of tools, like Classcraft, to increase student engagement (Papadakis & Kalogiannakis, 2017). In this study, an educational perspective of "student engagement" was examined, which meant the amount of passion, enthusiasm, concern, interest, and attention students demonstrated when engaged in learning ("Student Engagement," 2016). In addition to our observations about student engagement when we interacted with our students, engagement was viewed in this study as relating to those students who spent their own time engaging with optional Classcraft elements, like healing peers, adopting avatar pets, upgrading their personal avatars, and completing an "individual" quest. As a result, we asked specific questions on the survey relating to time spent thinking about or interacting with others on Classcraft

asynchronously. The concept of student motivation was drawn from Ryan and Deci's (2000) definition of motivation, which entailed being moved to act or "do something." It was not a concept that was steady but could vary based on the context and one's experience (Ryan & Deci, 2000), which was ideal for this study because we were examining student motivation within a specific course context. For this research, we aimed to use Classcraft to help motivate students to prepare for "flipped" classes, attend consistently, submit assignments on time, and participate in random synchronous challenges, in-class activities (e.g., APA Amazing Race, Escape Room), and boss battles (quizzes) with their teams, individually, or sometimes as an entire class. From the research gathered, three key themes emerged from the literature.

GAMIFICATION LEARNING TECHNOLOGIES ARE EMERGING

Classcraft is a Canadian-developed game-based technology that has been financially supported by the Government of Canada, starting in May 2018 ("Classcraft Studios," 2018). There are two elements, self and social, that are important to consider when looking at the impact of gamification (Bretherton et al., 2016). Classcraft addresses both elements.

GAMIFICATION VERSUS LUDICIZATION

Gamification, which first appeared in 2008, is the use of game elements in contexts that are not typically game-like (Deterding et al., 2011). Gamification aims to engage people cognitively; ludicization focuses less on people's attention and more on the situation, or context, in which play unfolds (i.e., in a "reflexive space") (Sanchez et al., 2017).

IMPACT OF CLASSCRAFT

Previous studies have shown that Classcraft can encourage teamwork, enhance learning, and be fun for students (Papadakis & Kalogiannakis, 2017). Gamification promotes active participation and gives students something else to invest in, beyond the academic expectations embedded within a lesson or course (Papadakis & Kalogiannakis, 2017). Inclusivity is promoted with gamification technologies for at-risk students, that is, those who are inactive, struggle with academics, experience social difficulties, demonstrate disruptive behaviour, or are socially excluded (Hanghøj et al., 2018). Classcraft also met many of the critical components outlined by Gee (2007) as principles for good game-based learning. Gee contended that gaming elements, like self-determination theory (SDT), should encourage individuals to build a sense of identity with agency (or autonomy, according to SDT) and facilitate interaction (or relatedness, according to SDT). Classcraft relies heavily on what Gee terms "cross-functional teams" as individuals rely on others not only to learn the course content but also to thrive in the game, in terms of earning points and levelling up. The various in-game elements, like random events, boss battles, and quests, allow students to participate in "pleasantly frustrating"

challenges to gain confidence in their abilities and prepare for the

summative assessments in the course (Gee, 2007).

PRINCIPLES OF SoTL

According to Felten (2013), there are five principles to assess SoTL in its many forms; these principles were addressed in this research. To begin, inquiry into student learning was accounted for because we recognized that teaching is more than the content or disciplinary knowledge gained; it also includes studying "what works" for student learning (Biggs, 2006). In this research, we were trying to determine if using Classcraft "works" for increasing retention, motivation, engagement, inclusivity, and teamwork in an adult learning setting.

The second SoTL principle acknowledged was that the study should be "grounded in context" (Felten, 2013, p. 122). There are many gamification technologies available to educators. We wanted to acknowledge previous research, use applicable theoretical perspectives, and apply research findings to determine if the use of Classcraft in a first-year criminal justice writing course for a college diploma program was effective. Using an interpretive paradigm, we acknowledged that the location, course, institution, program, and students will all impact the results because we were measuring students' subjective experiences. We were cognizant of this and recognized that the phenomena that resulted were coloured by the meaning students gave their experiences (Deetz, 1996).

The third principle was that the research should be methodologically sound. We intentionally used quantitative social science research methods to ensure our research questions were the focus of the study (Felten, 2013). Specifically, our research questions guided our methodology, data collection, and data analysis procedures. We strategically used a positivistic approach to uncover students' experiences and present this empirical data (Henning et al., 2004). Fourth, we committed to partnering with our students in this study (Felten, 2013). Since we were studying a teaching strategy, we needed to collaborate with those directly experiencing game-based technology, our students. Therefore, students and their learning experiences were the focus of this study. We not only sought their input based on their Classcraft experiences for our quantitative survey; we also requested the assistance of a student researcher to help gather the data. We strategically chose a former student who was not part of the study to be our student researcher; the researcher had taken the course two years prior, so was familiar with the content but never experienced Classcraft. Interestingly, the researcher let us know they would have enjoyed the opportunity to use Classcraft in this particular course because it encouraged teamwork and added an element of fun with the random challenges, boss battles, and quests related to core course concepts.

The last of Felten's (2013) principles that we addressed was to ensure our process, experiences, and findings were made public. With so many gamification learning technologies available to educators, we wanted to share our findings with the SoTL community. There is very little published on the use of Classcraft, so if we can help other educators implement this tool and work alongside these individuals to strengthen our teaching strategies, we will have been successful. Collaborative inquiry around game-based technologies will serve to help adult educators realize the full potential of Classcraft (Felten, 2013).

Theoretical Foundations

Deci and Ryan's (2008) self-determination theory (SDT) was foundational in our selection of Classcraft to address the challenges we were experiencing in this course. Specifically, we looked for a gamification technology that had the potential to enhance our students' innate psychological needs of autonomy, relatedness, and competence, all of which are key components of SDT (Ryan & Deci, 2000). Previous research in adult education demonstrated when these needs were strategically part of courses, students' levels of motivation, engagement, and collaboration improved (Perdue, 2016; Ryan & Deci, 2000). For this particular course, which was historically content-heavy, challenging for the students, and did not encourage teamwork, we felt an approach rooted in SDT was best. Furthermore, Marx et al. (2016) showed gamification technologies were effective in promoting autonomy, relatedness, and competence, so this theory also supported exploring the use of Classcraft in the context of our course. Autonomy, according to Ryan and Deci (2000), included the desire for people to be the agents of their experiences. In Classcraft, there were opportunities to maximize points independently outside of class for individuals, which helped promote autonomy. Participating in the Classcraft challenges and earning points was voluntary, so learners chose their level of engagement with the role-playing game. There were learning quests, which we started to experiment with, that allowed individuals to choose different pathways. These quests would be worthy of exploring in future research because they directly encourage autonomy through personalized instruction.

Relatedness referred to the importance of interacting with others (Ryan & Deci, 2000). We are social beings, and Classcraft immediately gave us the chance, on the first day of classes, to group students into teams by avatars and their roles within the game. Competence was another inherent need where people require the ability to master concepts or skills (Ryan & Deci, 2000). From previous course offerings, we identified the concepts our learners struggled with. We then created random challenges, boss battles, in-class activities, and even a quest to address these concepts through the use of Classcraft.

The elements of game theory, such as problem-solving, feedback loops,

interconnectedness, and rewards, were taken into account when selecting Classcraft

because these can be added to learning environments to increase student engagement, enhance motivation, and encourage specific behaviours (Cook, 2006). We were strategic in our incorporation of Classcraft and its many features because previous researchers cautioned that integrating gamification takes a great deal of rethinking and restructuring of courses (Perdue, 2016).

RESEARCH DESIGN

This quantitative study used a descriptive methodology because it was appropriate when trying to "illustrate accurately and clearly the characteristics of a group or situation" (Diem, 2003, p. 2). Since we integrated Classcraft as an instructional strategy, all 80 students enrolled in the three course sections participated in the gamified elements of the course to the degree they chose. An electronic survey, with Likert-style and open-ended questions, was deployed using Survey Monkey, to gather data one time at the end of the semester (once students had used Classcraft throughout an entire semester); therefore, a normative study was undertaken (Diem, 2003). Randomizing was not an option because participation in the study was based on course enrollment, so the population and resulting sample were formed out of convenience. The study's population included 80 criminal justice students in a diploma program, and the research sample was made up of 45 learners who agreed to complete the survey. Of the respondents, 34 identified as male and 11 as female. The highest level of school that 69% of participants had attained was a high school credential, with another 22% reporting "some college but no degree."

Classcraft Integration Survey

The survey used in this study was adapted from the Instructional Materials Motivation Survey (IMMS) by Keller (2010) because it addressed attention, relevance, confidence, and satisfaction according to the ARCS motivational model (Keller, 1987). This survey was selected because motivation theory was used to inform the survey questions, and it addressed the key components of SDT. There were 25 Likert-style questions, where participants responded to statements as 1 = not true, 2 = slightly true, 3 = moderately true, 4 = mostly true, and 5 = very true. Also, there were five short-answer questions. We reviewed the items on the survey and could identify the SDT innate needs each question assessed, which included autonomy, relatedness, and competence (Ryan & Deci, 2000), so the instrument aligned with the purpose of our study. Also, the IMMS provided insight on engagement and motivation specific to students' experiences with "instructional materials" (Keller, 2010). In this study, it was slightly modified so the questions aligned with the research (for example, we switched out the word "course" for "Classcraft"). Open-ended questions were added to address specific questions we

had about student engagement with avatars, suggestions for future use of Classcraft,

and the use of extrinsic motivators, like the prizes offered. Therefore, motivation theory informed the research design and instruments used to measure student motivation and engagement.

Research Questions

There were two research questions addressed in this study:

- R1: How does the use of Classcraft impact student motivation, engagement, and satisfaction?
- R2: How does the use of Classcraft impact team building, collaboration, and interaction?

Research Process

Classcraft is a robust application that requires technological competence and time to learn. Since we were individualizing it for higher education, most of the basic elements needed to be modified, such as the powers for each of the avatars, the "rules" of the game, which included what students obtained points for, the sentences served to avatars, and the random events that teams would complete. Each of these components was customized to align with the course content. This process was intense and needed to be completed before using this tool as an instructional technique. As a result, two faculty were required to customize the tool over a two-month period. Incorporating this gamification technology into three course sections allowed for more data to be obtained than if only one faculty integrated this tool.

We initially created one master Classcraft course and eventually copied it to all three of our course sections. In the first week of classes, we randomly assigned our students, using the Canvas random assignment tool, to groups of 4–5 students. We asked students, within their groups, to select at least one mage, warrior, and healer, as one of each is required to assist the other roles. Once they selected a character type, they created their own unique avatars using the tools provided by Classcraft. These avatars could be enhanced throughout the semester based on points earned; for example, we had many students adopt avatar pets. Every four weeks, the groups were shuffled to allow our students to work with others in the class.

We used many of the features available in Classcraft, including random events and boss battles. Random events were used once per week and focused on grammar exercises or content specific to the course. As shown in Table 1, we called these M.U.G. shots, and these group exercises were customized to the course objectives. Boss battles were also used and equivalent to electronic quizzes. Again, these were customized to the content of the course and completed as a class for points. At the end of the semester, we used one of the more advanced features, called quests,

which allowed us to create individualized learning experiences where students

could pass through various milestones at their own rate. We found this to be an excellent tool for "flipping" a class; students could complete quests outside of class and then be prepared for in-class activities. On our end, we could review some of the data from the quests to determine what was challenging for our students. For each of these features, students had the opportunity to earn different types of points, which are shown in Table 1. We awarded points for other behaviours throughout the semester, such as being prepared, attending class, and submitting assignments on time (as shown in Table 1).

One week before the end of the semester, we provided the informed consent form for our study and deployed our survey to the 80 students taking the course, both of which had previously been approved through our institution's Research Ethics Board. Forty-five students agreed to participate, completing the informed consent and survey, out of the 80 from our target population, so this reflects a 56% completion rate.

Data Analysis

We analyzed the quantitative data using SPSS and descriptive statistics. The Likert-scale data was originally ordinal, so it was summed and averaged for each question to result in continuous data. We chose to present our findings in terms of averages or according to the number of respondents selecting certain scales or providing similar feedback so the data would be straightforward for colleagues and other instructors interested in our results and integrating Classcraft into their own courses. For the five open-ended items, we had three people code the data and draw out themes (the two researchers/instructors and our research assistant), and then we compared and refined our themes.

COURSE DESIGN

When we considered how to implement Classcraft, we framed the course design according to the course outcomes and the principles of SDT because this theory suggests the need for tasks that inherently motivate and engage people (Deci & Ryan, 2008). People are innately driven by seeking autonomy, competence, and relatedness (Ryan & Deci, 2002), which are all aspects Classcraft afforded our students. According to Zainuddin et al. (2020), in a recent review of gamification studies, SDT was the most commonly employed theoretical perspective, with 46 studies using its principles to guide design elements and analysis of results. Table 1 outlines how we integrated Classcraft, including the frequency of events, points awarded, and student participation. Lastly, we connected the gamification elements to the needs outlined by SDT to demonstrate how this theoretical perspective informed our course design. As shown in Table 1, the following course outcomes

were also addressed throughout the gamification elements integrated:

1. Demonstrate mastery of grammar, word choice, and editing to meet public safety industry standards, including pre-employment testing.
2. Record accurate, relevant, detailed notes for the purpose of testifying and writing investigative reports.
3. Demonstrate formal, direct, and clear writing in public safety reports.
4. Research, analyze, summarize, and communicate relevant justice issues.

Table 1. Gamification Integration with Classcraft

	Frequency	Points Awarded	Participation	SDT Needs Addressed	Course Outcomes Addressed
Random Events (called M.U.G. shots)	Weekly (14 total)	+50 XP	In Classcraft groups	Competence, relatedness	1, 2, 3
Attendance	Every class (28 total)	+50 XP for attending (-20 HP for an unexcused absence)	Individually	Autonomy, relatedness	N/A
Prepared for Class	Intermittently throughout 14 weeks (based on lesson requirements) (5 total)	+20XP	Individually	Autonomy, competence	2, 3, 4
In-Class Group Activities	In-class Amazing Race and Escape Room lessons; (2 total)	Variable depending on completion of task (+50 to +100 XP)	In Classcraft groups	Autonomy, competence, relatedness	1, 2, 3, 4

Boss Battles (quiz-based games)	Intermittently throughout 14 weeks (based on lesson requirements) (5 total)	+50XP	As an entire class vs. boss	Competence, relatedness	1, 2, 3, 4
On-Time Assignment Submission	Throughout 14 weeks (for each assignment submission) (9 total)	+50XP	Individually	Autonomy	N/A
Quests	Once (at the end of the semester)	+100 XP	Individually	Autonomy, competence	3, 4
Independent Playing of Classcraft	Throughout 14 weeks	+GP, +XP - Variable (depending on what roles and actions taken)	Independently (outside of formal class) based on own interest in engaging with the game, other characters, and levelling up their own avatars	Autonomy	N/A

Notes: XP = experience points, HP = health points, and GP = gold points

   Students accumulated points throughout the semester, and every two weeks some were awarded prizes, obtained from our institution, community partners, and local businesses. For example, our institution's library donated $5 toward students' printing accounts, our bookstore donated toques with our institution's logo, and the digital learning team donated coupons to assist students with upcoming presentations and to print 3-D objects. The culinary program at our institution provided a reward that was given to the groups with the top experience points (averaged) where they learned how to make healthy soups with their teammates. A local business donated coins for their virtual reality arcade and a local policing agency offered a tour of the facility as a reward. These extrinsic rewards allowed us to provide real-life rewards for digital points accumulated throughout the semester. This was suggested to us by one of our digital team members, who thought the extrinsic rewards could further enhance motivation and engagement overall. As a team, we determined what type of points we would award prizes for to ensure prizes were distributed to different students throughout the term. Overall, students earned health points (HP), action points (AP), experience points (XP), and gold points (GP). Sometimes we would award a specific type of point for an action; for example, being prepared for class resulted in gaining XP. At other times, for the random challenges, we gave options and allowed students to pick the point type they preferred. AP were automatically added by Classcraft on a daily basis, and

most of the HP were accumulated through interacting with peers outside of class (e.g., healing a peer in need of points). Points were tracked for each student, but many students worked collaboratively to maximize their points and opportunities for their team asynchronously as well. For example, one week we selected individuals with the highest XP and then next week it was the group with the highest average HP. Students worked together to "heal" each other and transfer points

outside of class time; this is where we saw the teamwork element and group "relatedness" emerge. Since teams were shuffled every month, over the four months of the semester students had the opportunity to work with a variety of their peers.

RESULTS

Of the 25 Likert-style questions, the highest mean resulted from the statement, "I like working in a team." With an average of 3.8 out of 5 (or 76%), it was evident this was the truest statement for most participants, with 31 students combined reporting this was "mostly" or "very" true. Next, 39 participants, or 87%, responded with either "moderately," "mostly," or "very" true to the statement that participating in the random challenges, which included the grammar M.U.G. shots and word-of-the-day exercises, promoted problem-solving. Therefore, the mean for these responses was 71.4% (or 3.57 on the five-point Likert-style scale). Only one participant felt the random challenges did not promote problem-solving. Most students appreciated receiving points for attending class, with the mean on this question being 3.24 (or 64.8%). Other questions affirmed that most liked earning points, felt compelled to be prepared for class, and were motivated by the prizes. One of the lowest weighted averages was in response to the statement, "I thought about Classcraft between classes." In this case, 23 of the 45 respondents answered "not true" to this statement, and only 10 students felt this was "moderately" to "very" true. This was similar to the open-ended responses, where only some students felt the powers of their avatars were motivating. In fact, 14 of the respondents, or 31%, reported avatar powers were not motivating at all.

The first short-answer question was, "Which Classcraft element of the course was most motivating for you?" We determined the aspects of Classcraft that were most motivating were those that encouraged attendance, teamwork, and earning points overall. Of the 45 respondents, 13 students, or 29%, specifically mentioned prizes were the most motivating element of their Classcraft experience. The next open-ended question was, "Which Classcraft element of the course motivated you the least?" The most consistent response, when we analyzed themes in the data, was that all of Classcraft was motivating. However, we had four participants who found non-attending teammates to be discouraging as this impacted their group points because they eventually had to "heal" individuals who lost all their health points. Another four students claimed that learning Classcraft was challenging initially, and there were five students who did not find Classcraft motivating. The third

question posed was, "Did you find the prizes offered motivated you to engage in Classcraft? If so, what prizes were motivating? What prizes were demotivating?" Overwhelmingly, the prizes were motivating to the participants. The tour of the local policing agency was by far the most favoured prize. However, 24% of students responded that none of the prizes were motivating.

The next open-ended question was, "Did you find the powers that your avatar had motivated you to engage in Classcraft? If so, what powers were motivating? What powers were demotivating?" We found a split between the participants who thought powers were motivating (15 agreed) and those who felt no motivation from their avatars' powers (18 agreed). As instructors, we found Classcraft limited in that many of the powers could not be customized to our learners. The data affirmed our experience that the powers avatars received were not as motivating as other elements of the role-playing game. Lastly, we asked a question to gain insight about potential powers the participants would be motivated by if Classcraft ever afforded complete flexibility with assigning powers. Most of those who responded did not have any specific suggestions; however, three participants stated they would have liked to use their avatars more actively in the game, and two students requested "easier" methods to attain experience points.

LIMITATIONS

As with any research, we acknowledge several limitations. One limitation was the experience we had, as instructors, with using Classcraft. As the semester progressed, we felt our knowledge of the tool grow dramatically, and we feel that student motivation, engagement, and satisfaction could reflect the experience levels of instructors implementing this role-playing technology. We had the luxury of experimenting with this program over the summer on our own; however, we can already see where we could adjust random challenges, add more boss battles (quizzes), and include individualized quests.

Additionally, after completing the research, we realized we should have gathered more demographic information to be able to measure the relationship of these demographic factors to student motivation, engagement, and satisfaction. Consequently, the results presented do not acknowledge some important distinctions that could be present, such as students' previous gaming experience, ethnicity, and age. We also found that individuals identifying as female were underrepresented (24%) in our sample as those who identified as males made up 76% of our respondents. As with most research, conducting this study over multiple semesters and obtaining more self-reported data would also be beneficial.

DISCUSSION

Overall, we were able to determine that many components of Classcraft improved student motivation, engagement, and satisfaction, such as receiving points, earning prizes, and completing random challenges related to the course content. However, we also learned that the avatar powers, which are not as

customizable as some of the other Classcraft elements, were not as motivating for our adult learners. We were not surprised by this finding as we found this to be a limitation when customizing our Classcraft course. We were not able to customize all the powers, and the learners did not have a choice of the powers their characters could "unlock." We saw this as a barrier to encouraging autonomy, and the student survey responses reflect this drawback. We were also not expecting our students to think about Classcraft outside of class. Nevertheless, we found it interesting that 10 students still "moderately" to "very" much agreed that they thought about Classcraft outside of class.

Team building and collaboration, reflecting the psychological need for relatedness, were consistently affirmed to be positive outcomes of using Classcraft in our empirical and short-answer data. One of our goals was to enhance relatedness in this course because it was lacking in previous iterations. Additionally, we as instructors observed this phenomenon more when we incorporated Classcraft than in previous non-gamified semesters of teaching the same course. We noticed students were more motivated to attend and participate in our face-to-face challenges and activities; they also encouraged their team members to attend and participate throughout the semester. Concerning the innate need for competence, we built the random challenges, boss battles, quests, and other in-class activities around core challenging concepts that students had struggled with in previous cohorts. While we did not compare grades from these cohorts to previous classes, we noted in our reflections that these in-class activities were much more motivating and engaging than the previous instructional strategies used. Students would get excited on "random challenge" days, although most of these challenges focused on writing basics that typically do not elicit excitement when reviewed in class. Overall, we felt Classcraft enhanced our students' competence because most enjoyed the activities and the element of competition that resulted from them; this positively contributed to their abilities to recall and apply the concepts being integrated into the Classcraft gaming elements.

Given that Classcraft is a free and accessible gamification technology, we concluded the positive impact it had on our learners was worth the investment in learning about the program and incorporating it into our classes. In examining other technologies, like Gradecraft, we also determined that Classcraft is different from traditional LMSs and other gamification learning technologies. We used Classcraft features in addition to the Canvas LMS features, such as adding digital badges and leaderboards, to gamify the courses by including elements that catered to people's innate needs according to SDT.

REFLECTION

One of us is a trained educator, with gamification integration experience, and the other is a former major crimes investigator relatively new to teaching at a post-secondary level. From our conference presentation, we found the perspective of an instructor with very little "gaming" experience was beneficial.

Reflections of a Former Police Officer

In 2019, my colleague spoke to me about her plan to implement "gamification" in an applied English and investigative writing course we were both teaching at the time. I did not understand what gamification was or what it entailed. At 56 years old, I had never played a video game and was not on social media. I did not understand or appreciate how or if this type of motivational design would make any difference in my classroom. I did know that I was willing to try anything to create a climate that would increase attendance, engagement, and learning. I quickly discovered that using gamification, specifically Classcraft, accomplished all of these goals and more, which is especially important to note considering my initial skepticism.

To learn how to operate Classcraft, I simply watched a tutorial on the website. I followed the steps, added all of the students' names to the website created solely for my class, and then printed out the documents the students needed to choose their specific roles of mage, warrior, and healer. The tutorials explained gamification using simple terms and specific examples. I then played the student video on how to play the game to the students. Everything on the Classcraft website was very clear and that is saying quite a bit considering the fact I knew nothing about it and am not a "gamer." What was a great relief to me was how quickly the students set everything up in the class. Many were "gamers" or at least had some degree of experience playing in this environment, and most understood the roles, terminology, and point system.

Since I was teaching the writing course, my colleague and I knew that we would need to employ competitions that would support what we were trying to teach. As a result, we used M.U.G. shots, which represent "mechanics, usage, and grammar" as warmups at the start of the class. The M.U.G. shots were a collection of sentences, which we built into Classcraft in the random events feature, that had issues with punctuation or grammar, and the students (in their teams) needed to fix the sentences. Thereafter, I revealed the correct response and points gained for correct answers. The students, I quickly learned, were very competitive and wanted to gain points as teams. I also gave the students a word with which they needed to create a grammatically correct sentence, not using any electronic devices to do so, which helped with writing mechanics and expanded their vocabularies.

My colleague and I wondered if we needed prizes of some sort to motivate the students to earn different types of Classcraft points. Another colleague from our teaching and learning centre told us about how impactful real-world prizes were for students. He explained that these prizes were not normally physical prizes but rather "experiences" that encouraged collaboration and teamwork, which are key student competencies of our program in general. This resonated with us, and we found people from the institution, in the community, and among our stakeholders who agreed to help. A sergeant from the municipal police Special Weapons and Tactics Team agreed to give the students a tour of the police service, a world-class squash player agreed to give the students a squash lesson, and a top-level chef at the institution agreed to put on a cooking session for the students. We also had local businesses donate "experiences," such as virtual reality sessions and escape room passes. Every two weeks, we decided which team or individual had the most points, and then awarded the real-world prize. We ensured the prizes were distributed for different point values, and we also awarded individual or team rewards.

After the students attended the real-world prize event, I always sought feedback from them in class to determine how they enjoyed it. Without exception, they absolutely loved attending all of the experiences. They detailed how much fun it was and that they would remember it for many years to come. I now know this type of prize was the most lasting of any I could provide them.

My colleague and I included in the game consequences for actions, such as non-attendance, arriving late to class, not being prepared in class, and late submissions of assignments. If a team member loses points, it can impact a whole team, so this encouraged the learners to work together. I should also note that none of the points, nor the Classcraft game itself, were connected to course grades. It was an entirely separate, voluntary experience for the students. Conversely, we also embedded positive rewards in the form of points given to the team for completing tasks for "flipped lessons," attending class, handing in assignments on time, and being prepared in class.

My initial goals of encouraging consistent attendance, promoting active engagement, and helping students to retain challenging concepts were realized because of Classcraft. It promoted a strong team identity (each team decided on a team name and crest), and the team members encouraged their peers to earn points. If they lost points, they would not have the same chance to win the real-world prizes. I watched the teams working together to rewrite the M.U.G. shots and, in doing so, they learned a great deal about teambuilding, critical thinking, and compromise. Many of these students are going into workplaces as police officers, correctional officers, social workers, and lawyers, and filling other occupations in the world of public safety. Learning all of these skill sets them up for success in their chosen professions.

Each team had students with different powers that accompanied the roles of mage, warrior, or healer. The specific powers held resulted in them helping each other throughout the game. I would see students who had never associated with each other before in the cafeteria having lunch with each other and forming relationships. Initially, I had always considered gamification as negative in that there would be students playing games by themselves, without any interaction with others. This experience, as well as the research we undertook concerning gamification in a variety of contexts, changed my view of what gamification can accomplish.

Classcraft taught my students accountability to each other, as opposed to just me as their instructor. That responsibility to each other is what they will need to be successful in any given career path they choose, not just for a student pursuing a career in public safety. One of the main takeaways that my students have learned from this experience was that supporting their teammates was the key to their success. My takeaway is that Classcraft is a collaborative model that makes learning motivating for both the students and the instructor and allows students to thrive.

CONCLUSION

While our findings helped us see the impact Classcraft can have in a course, more research on this tool and other gamification technologies in adult learning settings would be beneficial. Specifically, research that separates the motivational impact from the gamification technology from the extrinsic rewards provided would be helpful. Since this project concluded, we have continued to use Classcraft, refined our processes, and used more of the features available within the program. Future research should study the individual Classcraft elements in greater detail, like the use of quests. Also, future research that examines how Classcraft might complement LMS gamification elements, such as digital badges, leaderboards, and analytics, would provide great insight to other instructors venturing to enhance student engagement and motivation in challenging courses.

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