

Incorporating Game-Based Learning with Shirley Jackson’s “The Lottery” to Maximize Students’ Achievement and Engagement

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According to Anderson and Jiang of the Pew Research Center (2018), 88% of U. S. teens have access to home computers and 95% to smartphones. This ease of access to technological devices, in turn, rapidly fuels digital consumption. While 45% of teens reported being online with virtually round-the-clock regularity, Anderson and Jiang noted that “roughly nine-in-ten teens go online at least multiple times per day” (p. 8) and the same number participate in video gaming. As a matter of fact, the percentage of teens who use the Internet on a near-constant basis has nearly doubled in the span of only three years.

Teens enjoy using technology not only in their personal lives, but also in the classroom to enhance their learning. Game-based learning (GBL), a pedagogical method in which games are incorporated into the curriculum in order to accomplish specific learning objectives, enables individuals to attain content mastery through various competitive, collaborative, and goal-oriented means. By combining gaming principles with purposeful instructional design, teachers can create an active learning environment that promotes academic interest/engagement and improves knowledge retention (Pho & Dinscore, 2015; Spires, 2015).

Specific to English language learning, researchers have found that the adoption of GBL can result in promising learning gains. In their study of nonnative and native English speakers interacting in the virtual world *Quest Atlantis*, Zheng, Wagner, Young, and Brewer (2009) discovered that GBL created a learner-centered environment in which participants worked together to complete educational quests in an atmosphere that felt more interactive and flexible to them than did the rigidity of a traditional classroom. As a

result, their linguistic abilities were furthered in the areas of pragmatics, syntax, semantics, and discourse. To further examine how GBL impacts student performance, Zheng, Bischoff, and Gilliland (2015) examined nonnative/native English speaker educational interactions in the massively multiplayer online game (MMOG) *World of Warcraft*. The researchers ascertained that the collaborative nature of the MMOG and the richness of the in-game linguistic resources provided multiple contexts for the acquisition of both vocabulary and multimodal literacy skills. Furthermore, they noted that GBL provided participants with lexicogrammar opportunities that went beyond the offerings of a physical classroom.

However, Zheng et al. (2015) also stressed that educators must exert agency over the lesson development process in order to avoid academic stagnation in the digital era. The traditional teacher-centered instructional model favors the reduction of language concepts into clearly delineated units taught via rote learning. Yet this singular focus on content mastery limits the motivation to engage with the curriculum and the ability to perform higher-level cognitive processes. The GBL research conducted by Wu, Chen, and Huang (2014) determined that modern students—a generation highly influenced by Web-based multimedia—require active learning experiences that mirror real-world linguistic/communicative situations outside of the school setting.

One pedagogical resource that provides such active learning experiences is Kahoot—an online application launched in 2013. With Kahoot, students use digital devices to participate in multiple-choice quizzes in which they are pitted against their peers. After the conclusion of each round/question, they receive immediate feedback and points for correct answers, with the class leaderboard subsequently updated between rounds.

Although Kahoot is a relatively new means of instruction, studies have shown that this GBL platform increases students' test scores and levels of classroom engagement. Iwamoto, Hargis, Taitano, and Vuong (2017) conducted an experiment in which two undergraduate classes received identical instruction during a unit on general psychology. One class (the experimental group) reviewed the lesson material via non-graded Kahoot quizzes during the last 10 minutes of the period, whereas the other class (the control

group) continued with the lecture-discussion format of instruction. The day before the test, the experimental group spent the entirety of the period replaying all of the Kahoot quizzes from the unit; conversely, the control group completed a study guide as a class. After both groups were administered identical multiple-choice exams on the same day, the researchers discovered that the experimental group received significantly higher scores on the exam than did the control group. Moreover, results obtained from a post-exam questionnaire indicated that 71% of the experimental group's members found Kahoot to have aided them in preparing for the exam.

Researchers across disciplines have made similar discoveries. For example, Plump and LaRosa (2017) found that more than 85% of students enrolled across twelve university business classes stated that Kahoot aided their conceptual understanding of course content and proved to be a positive and engaging experience. Furthermore, Wang and Lieberoth (2016) found that 90% of first-year information technology students at the Norwegian University of Science and Technology, with both full and partial access to Kahoot, found educational value in their game participation and became more academically motivated in the content area.

Gaming/Learning Preferences Survey

To measure how the data from the literature review is reflected in the classroom, we administered a gaming/learning preferences survey to a class of 40 sophomore English students taught by Sarah, the first author, at the private Grand Island Central Catholic High School in Nebraska. Phu, the second author, served primarily as a research mentor uninvolved in the classroom activities and without direct contact to the students.

The results of this survey informed us of the extent to which gaming is an essential part of high school sophomores' personal lives. More than 80% of the students reported that they incorporate gaming into their weekly routine, with the majority desiring an entertaining means of interacting with their friends. Based on my hall duty and lunchroom monitor responsibilities, I am unsurprised by these findings because students are permitted to interact with their cell phones for recreational use during passing periods

and in the cafeteria. I frequently observe them engrossed in gaming on their devices, sacrificing nourishment and/or an early arrival to class in order to make progress on a mobile level of their choice. When these devices run low on battery, panic-stricken students seek teachers out for permission to charge their phones in their rooms. Additionally, not a day goes by without discussions about mission quests/boss battles or competitive digital card games. Dance-offs that make use of various Fortnite choreographic sequences are regularly present at school dances, and the potential reception of video game console upgrades is a topic of fervent conversation during the holiday season.

In the survey that I administered, two-thirds of respondents also indicated partiality to demonstrating content mastery through gaming. As educators, it is imperative to acknowledge a paradigm shift in pedagogical best practices because traditional teaching methods must be amended in order to better meet the needs and interests of 21st-century learners. When the majority's preference for learning does not align with the educator's preference for teaching, instruction is not being designed to optimally promote academic success. Teaching the way students learn enables them to invest themselves more thoroughly in their education.

Post-Survey Reflection

Analyzing high school sophomores' educational and technological predilections led me to reassess the manner in which I taught Shirley Jackson's short story "The Lottery." This unit culminated in two summative assessments: a text-to-text/text-to-world exploration project (in which students researched, analyzed, and evaluated the similarities and differences between aspects of "The Lottery" and various laws/traditions/persecutory practices) and a test over plot elements and literary structure. By preparing for the test, the class experienced factual concepts and textual interpretation in a manner providing a firm foundation for pursuing the upper-level elements of Bloom's Taxonomy.

When previously presenting this unit, I noticed that many of the students struggled to fully engage with the content of the lessons. Whereas the exploration project of this unit

has traditionally been viewed by sophomores as a highlight of the academic year, they tended to lack intrinsic motivation when reading and analyzing “The Lottery”: their involvement in lessons merely stemmed from a desire to pass the class, not from interest in the subject matter. As a result, grades on the test reflected the stagnant effort with which they approached the learning process.

Furthermore, their linguistic and literary abilities often required my attention in order to transcend from lower- to higher-order thinking skills. In fact, many students defaulted to a role of passivity when receiving information and needed prompting in order to actively engage with, examine, and communicate the deeper meanings of the text. For example, when asked to identify character names that take on additional symbolism, many ably located Graves (foreshadowing death) and Warner (portentous tragedy) but struggled to explore how said names possessed deeper levels of meaning. When asked to locate/cite/present textual information, such as providing two quotations predicting the end of the story, they required extensive scaffolding. Additionally, as they lacked confidence to share their answers, I was able only to solicit their verbal responses after providing substantial encouragement.

Objective: Implement GBL

Based on a desire to promote content engagement and the digital learning preferences of my students, I decided to implement GBL as a means of accomplishing the following objective: given a 25-question test, students will be able to recall information from the short story with 80% accuracy. The selection of 80% as the desired level of proficiency stemmed from a pedagogical guideline published by the National Council of Teachers of English asking teachers to state desired performance levels for objectives at 80% (Peterson, 1975).

To actualize these objectives, Phu and I chose Kahoot in order to explore game creation in a manner not requiring prior coding knowledge or experience. Although we appreciate the idea of open educational resources, we often find that these pre-existing activities address neither the specific subject matter nor specific instructional contexts. The

composition of learners in my classroom necessitated the incorporation of tasks that provide engagement through visual, auditory, and kinesthetic modalities. Kahoot enables students to read the content with which they are engaging, to hear the teacher provide an oral rendition of the question, and to interact with their peers in a competitive player vs. player or team activity while solving said question. Furthermore, designing a Kahoot facilitates the customization of both content questions that meet the educational needs of the students and time constraints for providing answers.

Our selection of Kahoot was also influenced by the cohesive nature and scholastic habits of my students. As a whole, they are one of the closest-knit groups that I've taught. Not only do they favor socializing as a large group, but they also strive to encourage each other to achieve academic success. Despite this strong bond, this grade boasts sizeable numbers of both introverted and extroverted personalities, thus I introduced an entertaining, technology-based activity that would appeal to both solitary and communal learning styles.

The mechanics of Kahoot foster student excitement and engagement in a manner that can be smoothly initiated and monitored. When beginning a round, the teacher selects customization options such as question/answer randomization, answer streak bonuses, and podium recognition for the top three finishers. After the teacher clicks either "classic" (player vs. player) or "team" mode, the class is presented with a welcome screen, projected from the master computer, that provides the game PIN. Once they enter the PIN and a moniker (with the teacher having the power to eliminate inappropriate choices), the teacher clicks "start" and play commences. Kahoot displays a question on the board for five seconds, then the students answer by pressing on the corresponding shape/color on their individual devices. Once time runs out, a checkmark appears next to the correct response with a bar graph of anonymous student responses. The five highest cumulative point totals are displayed on the scoreboard at the conclusion of each question. At the end of the game, the teacher privately receives data on student performance (see Figure 1).

What is Jackson's main theme in this short story?



The image shows a Kahoot! quiz interface. At the top left, a purple circle contains the number '8'. In the center is a purple rectangle with the word 'Kahoot!' in white. At the top right, a blue button says 'Skip' and below it, '0 Answers' is displayed. Below these are four colored buttons representing answer choices: a red button with a white triangle icon and the text 'The value of human life'; a blue button with a white diamond icon and the text 'The foolishness of blindly following tradition'; a yellow button with a white circle icon and the text 'The need for change in a community'; and a green button with a white square icon and the text 'The need for tradition in small towns'.

Figure 1

I began by furnishing the students with a traditional multiple-choice pretest on “The Lottery” and stressing the importance of interpreting the results as a diagnostic baseline for their current understanding of the material rather than as a measure of their intelligence. In other words, I wanted them to set personalized goals for attaining content mastery by discovering what they did not yet comprehend. Afterwards, with the aid of a randomizer, they read “The Lottery” aloud together. Since they knew neither the order in which they would be called nor the frequency with which they would be asked to participate, they paid close attention to the text as it was recited. Before the end of the period, I assigned them study guide questions to complete within three days.

During the week-long duration of GBL, the Kahoot link was available on my sophomore English online weekly planner. Students therefore interacted with this resource on an independent basis. Every other day, they competed against each other on Kahoot during the last portion of class; on alternating days, they reviewed the questions with a partner. Because they tended to select answers swiftly without reading the question or the answers themselves (in order to earn a potential maximum of 1,000 points), I activated the

“Answer Streak Bonus” option to encourage them to take their time and favor accuracy over rapid clicking.

In between each Kahoot round/question, the students asked questions in order to clarify their understanding of unfamiliar content. One such occasion emerged when those who incorrectly answered the question “What is Jackson’s main theme in this short story?” (with “the foolishness of blindly following tradition” being the correct answer) proactively queried their peers regarding the definition of the word “theme” and why the correct answer was the best selection out of the four possible options (with the other options “the value of human life,” “the need for change in a community,” and “the need for tradition in small towns”).

On the day of the posttest, they competed in a round of Kahoot as a means of studying for their assessment over “The Lottery.” Afterwards, I distributed the 25-question, multiple-choice exam. All of the students completed the task in under fifteen minutes and substantially improved their scores:

		Pre-test	Post-test
Gender	Female	30.96%	100%
	Male	26.08%	96.20%
Ethnic/demographic background	Caucasians	28.92%	99.60%
	Hispanics	27.20%	96.80%
	African American	22.68%	80.00%

	Asian	36.00%	100.00%
Total mean score		28.40%	97.80%

Discussion

Using Kahoot brought about constructive results from both student and educator perspectives. As I currently teach at a 1:1 school, all of the sophomores possess a Chromebook. Since two-thirds of the class members are partial to demonstrating content mastery through gaming, they relished the chance to participate in Kahoot. Consequently, student interest and motivation/desire to succeed resulted in the pretest-to-posttest scores improving by 244.37%. Their avid engagement emboldened them to become active agents (as opposed to complacent bystanders) in the learning process. In other words, they became more confident in interacting with others, verbalizing their opinions, and asking for help.

Interacting with the Kahoot appealed to visual/auditory/kinesthetic modalities and thus aided students with diverse learning styles. Furthermore, presenting various setting and grouping options for the Kahoot (e.g., independently outside of class, with a partner during review time, and with the entire class at the end of the period) enabled both introverts and extroverts to experience the online platform comfortably. Removing barriers to learning by providing options for access and perception helped them grow in their ability to critically analyze literature: when I presented the information in a manner that the students could more readily comprehend, they mastered the information more expeditiously and possessed a stronger knowledge base from which to execute higher-order thinking skills. For instance, those with a confident grasp on the plot initiated class discussions on topics such as how “The Lottery” exemplifies satire, how the story’s theme of “the foolishness of blindly following tradition” is echoed in the real world, and why Jackson would use a cheerful/objective tone to narrate a story that ends with an execution.

From a teaching standpoint, being able to monitor participant behavior permitted me to discern between the mastered material and that requiring additional reinforcement. By walking around the classroom throughout the duration of the Kahoot, I could provide assistance and instruction and to redirect off-task behavior as needed.

Notwithstanding the success, an area of rectification lies in the domain of product testing. Although I spent hours generating and customizing the content, I could not preview the game from a student's perspective. As a result, it was not until the students began inputting their usernames that I realized an error had been made: the background color of the video summary of "The Lottery" embedded on the welcome screen was almost identical to the color of the Kahoot font. Only by tilting the laptop could I view the usernames. In the future, integrating Kahoots into the development process should lessen the presence of such software bugs.

For teachers seeking to replicate this process, I would strongly urge them to provide access to the Kahoot outside of teacher instruction. When individuals are able to experience content at home and receive instantaneous feedback, knowledge retention and lesson engagement are greatly enhanced. Because the Kahoot link was posted on the English online weekly planner, the absent students could still interact with the material and keep up with their studies. Moreover, those who experience anxiety when interacting with new material in front of their peers have opportunity to grow in self-confidence and mastery on a timeline that best fits their educational needs.

Something as simple as copying/pasting a Kahoot URL to a Google Doc takes only a few seconds, yet this action can have a tremendous impact. For instance, with the institution of online access to class activities, I noticed that the attendance rate of one student, whose apprehension toward unfamiliar content often caused her to become physically ill and miss multiple, often consecutive days of school, started to sharply rise. This student found a sense of confidence within herself and realized that she could accomplish greatness through determination and ambition. She is determinedly strengthening her ability to communicate interpersonally and now desires to increase her involvement in extracurricular activities. Furthermore, I began to form more positive connections with

students whose comportment had previously been less than desirable. One with a history of acting out because of impulsivity and hyperactivity and a general disinterest in literature transformed into a far more focused and motivated student. This self-styled “Lord of the Kahoot” (a nickname which he coined and highly favors) is presently my assistant during his free period. Another student had struggled significantly with completing homework and asking questions to clarify understanding—actions which resulted in significantly low assessment scores—but now completes her tasks with excitement and enthusiasm. To her, the English room is now an environment that caters to her learning needs and a haven where she feels valued and supported.

Although the 244.37% pretest-to-posttest score improvement demonstrates the benefit of GBL, what inspires me the most to continue are 1) the connections the sophomores made with the material and 2) the emotional maturation attained by various individuals. While test-score data provides concrete proof of scholastic advancement, changes in behavior provide further evidence of student growth. As the sophomores’ lockers are right outside my classroom, I frequently hear them socializing before and after school. During the implementation of GBL, I noticed that their mentioning ENG 10 began to evolve from reminders about deadlines/assessments into discussions about the content of “The Lottery.” Similar to the informal gatherings of John Keating’s students in *Dead Poets Society*, they would freely converse about the themes/concepts addressed in class in order to form interpretations and viewpoints about material that personally resonated with them.

Final Thoughts

GBL activities such as Kahoot can provide a powerful foundation by which to foster scholastic achievement and engagement. While a positive correlation exists between academic gaming and student learning, teachers should never blindly assume that technology will instantaneously ameliorate curricular outcomes. By itself, technology is but a tool of incredible potential and seemingly endless possibility. The success of this instrument comes from the combination of digital resources with effective pedagogical

practices. Teachers who use GBL in such a manner will ultimately better serve the needs of their students and provide a more grounded educational experience.

In addition, one potential factor that may have contributed to the students' positive performances is that of novelty. This was the first time that this GBL activity had been introduced, therefore the novelty may have played a role in the higher posttest scores. Novel stimuli have been found to enhance visual perception (Schomaker & Meeter, 2012), and the resulting "novelty effect" has also resulted in greater rates of participation in GBL (Ku, Chen, Wu, Lao, A. C, & Chan, 2014; Ronimus, Eklund, Pesu, & Lyytinen, 2019). Follow-up assessments and implementation should provide evidence of whether the levels of excitement will remain consistent in subsequent GBL activities or will decline due to habituation.

Furthermore, low pretest grades may have resulted from students experiencing "The Lottery" for the first time during the in-class reading (as opposed to accessing/reading the digital copy of the story provided via the online class weekly planner), while the improved pretest-to-posttest scores may have resulted solely from reading and reviewing the text in class. To verify that student success resulted from GBL implementation, I could 1) survey the students for verification on whether or not they read the short story prior to taking the pretest and 2) teach the short story unit to different class sections of sophomore English via a variety of methods and compare the variance in test scores.

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