

# Play and Learning with KAHOOT!: Enhancing Collaboration and Engagement in Grades 9-16 through Digital Games

Lauren Zucker & Audrey A. Fisch

Abstract: This Voices from the Field piece tells the story of a fortunate meeting on Twitter between a high school teacher and a college professor that blossomed into an exchange of KAHOOT! games and the recognition of shared pedagogical beliefs. KAHOOT! is a web-based platform that allows users to easily create and play interactive, multiple-choice-style games. The authors used KAHOOT! games in their respective classrooms to teach MLA format and academic integrity—traditionally dry topics that were enhanced by playing games. Through the use of KAHOOT! games, the students and teachers were able to play their way into substantive and student-centered discussions. The authors discuss the opportunity Twitter provided for professional development and collaboration, their students' experiences playing KAHOOT! games in class, and their reflections on using games to promote active learning. The piece concludes with recommendations for educators to make use of digital collaboration tools to connect and share expertise with colleagues across educational sites and levels in order to work together to meet the learning needs of new generations of students.

Keywords: games, technology, composition, high school and higher education



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### Teachers Learning in Playful Spaces<sup>1</sup>

fter a fun day of playing review games about MLA format on the KAHOOT!<sup>2</sup> (Kahoot!) website with her high school students, Lauren logged onto Twitter. A quick perusal of tweets from professionals in the field typically offered ideas, suggestions, and inspiration.<sup>3</sup> She noticed the first tweet in her Twitter feed, from Audrey:

My college students are having fun playing silly @GetKahoot games to review MLA style and grammar. This would be so boring otherwise! (@audreyfisch)

Lauren couldn't believe it. She replied immediately:

My 9th grade high school students were just playing a @GetKahoot game to review for their MLA format test! If you are willing to trade kahoots, I bet they would get a kick out of trying to take yours and vice versa! #connectedclassrooms (@LGZreader)

### Audrey replied:

Why not? Message me! (@audreyfisch)

This was not the first time Lauren had made a meaningful connection with a fellow educator over Twitter. Since 2013, she had made a conscious decision to expand her Professional Learning Network (PLN)<sup>4</sup> (Goldberg<sup>5</sup>, 2014). Simply put, she made an effort to follow teachers and scholars whose work she found engaging.

Previously, she had doubted that Twitter could ever be called professional:

I created my professional Twitter account [during a professional development workshop] without any intention of using it beyond that day. I imagined this would be like one of the many technologies I obligingly toyed with during a professional development session, and then promptly filed away and abandoned. I thought Twitter was a place for celebrities to talk about themselves and for the rest of us to share our banalities; I didn't think I could accomplish anything meaningful in 140 characters. (Goldberg, 2014, p. 30)

Twitter is what Jenkins, Purushotma, Weigel, Clinton, and Robison (2009) referred to as a participatory culture (p. 7)—a contemporary learning environment that requires new literacies while encouraging creativity, collaboration, and sharing. Before Jenkins et al., Gee (2004) wrote about affinity spaces (p. 67); face-to-face or online spaces for groups to organize around shared interests and learn informally. These types of learning environments are fertile spaces for connected learning, which "combines personal interests, supportive relationships, and opportunities" (Connected Learning Alliance, n.d., What is Connected Learning?).

Lauren and Audrey had never met in person. They found each other on Twitter through their shared

<sup>&</sup>lt;sup>1</sup> We acknowledge that there is a gender spectrum and that myriad pronouns exist that we can use when referring to individuals in our writing. Throughout this article we use pronouns to refer to individuals that correspond with the pronouns that they use to refer to themselves.

<sup>&</sup>lt;sup>2</sup> The name KAHOOT! is used with permission in accordance with Kahoot AS's trademark agreement.

<sup>&</sup>lt;sup>3</sup> The authors are grateful to Susan Chenelle, the peer reviewers, and the editors at *JoLLE* for their useful suggestions and feedback on this piece.

<sup>&</sup>lt;sup>4</sup> For further reading on Professional Learning Networks (PLNs), see Trust (2012) and Trust, Krutka, and Carpenter (2016).

<sup>&</sup>lt;sup>5</sup> References to Zucker and Goldberg all refer to co-author Lauren Zucker.

interest in education. The two educators were somewhat familiar with each other through professional circles and had connected virtually on Twitter by following each other, reading, and sometimes responding to each other's tweets. This small, virtual connection facilitated a communication that quickly developed into a creative collaboration between their classrooms and later, an opportunity to work as writing partners. Their shared willingness to jump in the "sandbox" and play with technology (Turner, 2013), led to academic outcomes that hardly felt like work at all.

### Playing Review Games in Lauren's Classroom

"I don't think we need a page number if we're citing a website."

"Wait. How do I find the year of publication?"

"What do I write if there's more than one author?"

Lauren's classroom was abuzz with student conversations about MLA citation and plagiarism. She had given students a deceptively simple assignment to make their own MLA study guide with a partner in preparation for an MLA test. They had to cover the major topics listed on the board: intext citations, incorporating quotations, plagiarism, formatting essays and titles, and bibliographic entries. Lauren had taught some of these topics as they arose in class and in student writing, but this activity marked the first and only extended class time dedicated to focused study on these topics.

When the class was about halfway through their work, Noreen and Ana<sup>6</sup> eagerly approached Lauren's desk to show off their completed study guide for her approval. Given the speed of their work, Lauren expected to find some inaccurate or incomplete

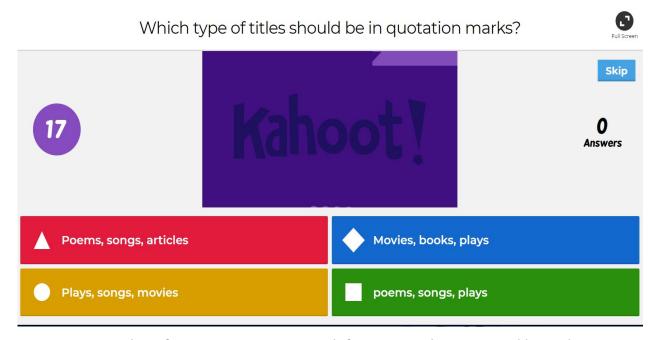


Figure 1. Screenshot of a KAHOOT! question with four answer choices created by students in Lauren's class

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<sup>&</sup>lt;sup>6</sup> Noreen's and Ana's names are used with parental permission; the students requested that their real names be used.

information and was poised to send them back to their seats with a copy of the *MLA Handbook* to search for answers as she had done with other students. Their study guide was thorough and flawless, however. Since they had finished early, she suggested the students quiz each other.

Lauren immediately thought of KAHOOT!, a game-based online platform that allows users to create interactive quizzes for invited participants to take via a personal electronic device. She had used the platform occasionally to create review games when she determined that simple, multiple-choice questions could reinforce students' learning. Lauren asked if they were interested in creating a KAHOOT! quiz for their classmates to review for the test. She offered two extra credit points as compensation.

"Yes! And we'll make it really hard to try to trick the class!" All three of them delighted in the idea, and the students eagerly returned to their desks to work on their new project while their classmates completed their study guides.

"In an effort to teach these skills then, Lauren designed a lesson that paired the student creation of MLA study guides and KAHOOT! quizzes."

The next day, Lauren gave the students feedback on a draft of their KAHOOT! game. She was pleased with their progress and looking forward to sharing the students' game with her ninth-grade classes.

### Approaching an Old Topic with New Tricks

Lauren did not always teach MLA format and academic integrity explicitly, but as she grew frustrated over years of marking errors that could be easily corrected, she began adding more lessons throughout the school year. In contrast, some of her colleagues had done away with teaching certain aspects of MLA format. For example, they might teach the MLA heading, and in-text citations, but not bibliography formatting. A few of Lauren's

colleagues eschewed devoting time to MLA rules, given that students outsourced their bibliography formatting to websites like EasyBib and Citation Machine.

But Lauren believed that the nuances of format and academic integrity were critical for her students to master before college. Indeed, many teachers at all levels dread teaching these topics because they assume someone else is covering them, or because they think the students already know what they need to know, or because the material is dry and boring.

Audrey shares Lauren's worries that the stakes for students are high. If a student doesn't know how to incorporate quotations, that student might

paraphrase in a misinformed attempt to bypass a citation. Confusing or ignoring the requirement to reference sources has far-reaching consequences. Students' misconceptions and insecurities about MLA format can result in an

inability to demarcate their own ideas from others'; as we have both seen in our high school and college teaching contexts, this inability can escalate to accusations of plagiarism with serious ramifications.

In an effort to teach these skills then, Lauren designed a lesson that paired the student creation of MLA study guides and KAHOOT! quizzes. Rather than provide students with the rules to memorize, Lauren hoped these activities, completed in pairs, would offset the difficulty and dryness of the topic and make the experience productively social and effective.

Lauren was aware of the research: Students learn grammar and writing topics best in the context of

their own writing (Anderson, 2005; Noden, 2011; Weaver, 1996). But she also knew that discussion, focused practice, and quizzing can help students remember concrete information such as lower-level writing and citation practices (Brown, Roediger III, & McDaniel, 2014). The KAHOOT! practice quiz was a valuable, culminating opportunity for the class to review the material. When her students played the KAHOOT! as a class, Lauren reinforced key topics and addressed any misunderstandings.

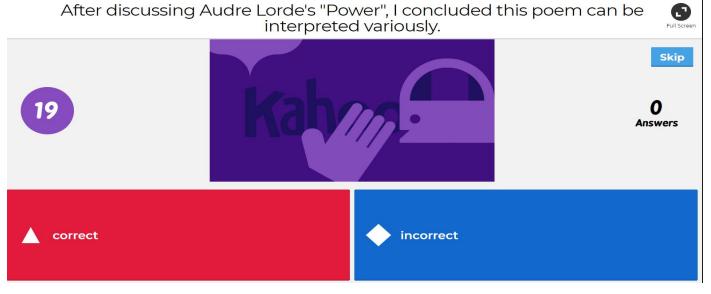
### **How Audrey Typically Used KAHOOT!**

Meanwhile, in her undergraduate-level 1st-year composition classes, Audrey had been using KAHOOT! games to serve two purposes. First, she was trying to incentivize and reward timely student attendance in her first-year composition classes. Because of local construction and the vagaries of public transportation around her campus, she was experiencing significant tardiness from her students. Without penalizing those who arrived late, Audrey wanted to make the best use of her instructional time. In particular, she wanted to make those opening minutes of class particularly fun, so that those who did make it on time were rewarded for their efforts. She started implementing short

KAHOOT! games to begin class, with a piece of candy for the top three winners. Students who arrived late could still watch and learn, but they could no longer join the game. Audrey noticed that students no longer strolled into the classroom. Those who were not early rushed in, eager to be present in time for the game.

Audrey's KAHOOT! games typically featured 5-10 questions drawn from sentences from students' recent essays, highlighting grammatical and MLA format issues. The questions were edited versions of these student sentences, shortened to fit the character limits of KAHOOT! games and selected to highlight only one particular issue. Moreover, consecutive questions covered the same issue in a variety of permutations, so that students had several opportunities to learn and implement the skill.

Usually, Audrey used a short YouTube clip or even excerpts from a clip at the opening of the KAHOOT! game (e.g., Shmoop, 2014) so that students had an opportunity to review a single concept. The video also served to maximize instructional time and provide a bit of fun as some students inevitably took a bit longer to log onto the KAHOOT! game than others.



*Figure* 2. Screenshot of a KAHOOT! question with two answer choices created by Audrey.

Discussing the questions and answers was a critical piece of Audrey's practice. Audrey used the teacher-directed mode (as opposed to the KAHOOT! setting that automatically moves players through questions), so that she could stop after each question for discussion of why the answer was correct. The combined discussion and repetition of concepts gave students the additional practice opportunities some needed to achieve confidence.

All of this was low stakes, although the students thrived on the friendly competition generated by the scoreboard, reporting on the score-in-progress.

The three top-scoring students, indicated on the digital "podium" at the end of the game, happily accepted their reward.

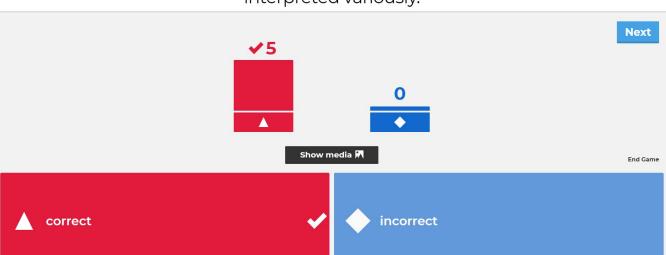
The broader goal, of course, was "massive practice" (Moffett & Wagner, 1991, p. 10) on typically boring

grammatical and formatting concepts that may be a distraction from higher-order concerns but remain necessary for students who are still honing their writing skills. The gamification of the exercise made a relatively chore-like educational practice both entertaining and meaningful. The skills practiced during this game-based multiple-choice would be reinforced when students wrote their own, original sentences.

### **Playing Games in the Classroom**

Recent research reinforces the idea that, beyond fun and extra practice, games<sup>7</sup> can be a meaningful educational innovation. Connolly, Boyle, MacArthur, Hainey, and Boyle's (2012) meta-analysis of 129 research studies found that educational games led to increases in knowledge acquisition and motivation.

After discussing Audre Lorde's "Power," I concluded this poem can be interpreted variously.



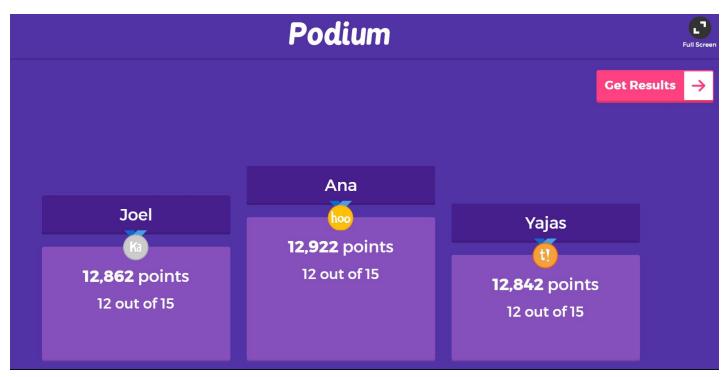
*Figure 3.* Screenshot of showing the number of students who scored "correct" versus "incorrect" on each KAHOOT! question.

mechanics to non-game activities" (p. 75). For further discussion of these terms and the ways they overlap, see Hung (2017).

<sup>&</sup>lt;sup>7</sup> It is important to note that playing games or game-based learning is distinct from gamification. Sheldon (2012) defines gamification as "the application of game

# Ana 3068 Joel 2958 Noreen 2947 Jahaan 2812 Yajas 2750

*Figure 4.* Screenshot of the KAHOOT! Scoreboard indicating that, in this game-in-progress, Ana is in the lead with Joel not far behind. [Note: Names and scores are fictional.]



*Figure 5*. Screenshot of KAHOOT! Podium showing the top three scorers. [Note: Names and scores are fictional.]

KAHOOT! is currently an especially popular game across grade levels and in higher education. When Lauren's ninth graders play KAHOOT! games, the energy in the classroom spikes. Even with a topic as

boring as citations, students are enlivened by the friendly competition. They lean forward with their eyes on their screens, dance in their seats to the music, and make audible sounds - cheers and groans - when the answers are revealed. Audrey's adult and young adult college students respond similarly: singing along with the KAHOOT! music and engaging in friendly but lively banter. As Karagiorgas and Niemann (2017) wrote, "Students' love of gaming provides a natural motivator which can be cultivated to encourage a love of learning" (p. 515). As Noreen, one of two student authors of the Kahoot! from Lauren's class, reflected: "During the game, everyone was so enthusiastic and engaged in the process" (personal communication, June 29, 2018).

One reason games like KAHOOT! are so effective is that they provide several dimensions of engagement: visual, auditory, tactile, and movement (Kapp, Blair, & Mesch, 2014). KAHOOT! engages the visual with colorful, readable displays, auditory with lively music, and tactile through a response system in which players key in their answers. The game indirectly encourages movement; our students danced along, high-fiving each other and gripping their fists in frustration depending on their answers. Moreover, research suggests that the use of sound effects and music within KAHOOT! has a statistically significant effect on student concentration, engagement, enjoyment, and motivation (Wang & Lieberoth, 2016).

Effective games, moreover, offer opportunities for both risk-free challenges and failure. Playing games allows students to "explore, try things out, and fail without penalty" (Hung, 2017, p. 63). Failure is a

critical element of gaming; gamers can spend "up to 80% of their time failing" (McGonigal, 2011, p. 64). Effective games are designed to keep "players teetering on the fine line between boredom and stress" (Kapp et al., 2014, p.98). Well-designed games, like effective teaching, keep participants challenged but not flummoxed, with the potential to facilitate a healthy attitude towards failure. In addition, the social experience of a KAHOOT! game creates a safe but competitive learning environment where students can become comfortable with public failure without shame, benefit from immediate feedback, and enjoy peer and teacher recognition (Dellos, 2015). Research also suggests that frequent testing, particularly when combined with the kind of immediate feedback that KAHOOT! provides, can increase overall student performance and narrow the achievement gap for low-income students (Pennebaker, Gosling, & Ferrell, 2013). Frequent use of KAHOOT!, in lieu of high-stakes tests, allows students to enjoy fun play, gauge their progress, and improve their learning (Pennebaker et al., 2013).

## Trading KAHOOTS! with High School and College Students

After connecting on Twitter, we decided to trade games (which is easy on the KAHOOT! platform). Lauren shared access to her students' KAHOOT! game on academic integrity, and Audrey used it with her 1st-year composition students. The first thing Audrey's students discovered was that every question asked if a given scenario should be called "plagiarism" or "not plagiarism," and Lauren's student game creators had selected a setting to randomize the position of the answer choices across questions.

Immediately, the students who were trying for the quickest possible answer, since KAHOOT! games reward speed and correctness, groaned in dismay at this switch. More substantively, Lauren's students'



Paraphrasing multiple sources and stitching them together, making them sound like your own.



Figure 6. Screenshot of KAHOOT! questions from Lauren's "Is That Plagiarism?" KAHOOT! game. Note the answer choices switched positions.

KAHOOT! game also utilized repetition, but this time on the broad topic of academic integrity. Each question presented an example of a writing practice (e.g. using six or more words in a row without quotation marks; using a small portion of another's students caught on to the fact that the answer in work; changing a few words but using ideas), and the players had to determine whether or not that practice constituted plagiarism. Even after Audrey's students caught on to the fact that the answer in Lauren's KAHOOT! game was always "yes [it's plagiarism]" (versus the alternative option, "no [it's not plagiarism]"), they still argued and puzzled over the differences as they worked their way through the game—after all, there were points (and candy) at stake!

Most significantly, to Audrey's delight, the game turned out to be a deeply engaging way to address misconceptions about academic integrity. For example, Lauren's KAHOOT! game indicated that submitting an assignment composed for one class as an assignment for another class elicited disbelief and protest from Audrey's students and created a spirited and honest discussion—several students approached Audrey after class to discuss the fact that they were hoping to expand on research they had begun in other classes for Audrey's research paper. Note, Audrey and her students actually disagreed about some of the answers. For example, they considered a mistake in a citation, such as leaving out information, to be a mistake in citation style but not a violation of academic integrity. The key, however, is that the KAHOOT! game allowed Audrey's class to do more than simply use "cool' technology to deliver a planned lesson" (Hicks & Turner, 2013, p.61); rather, the immediate and public feedback from the game allowed an authentic, timely conversation about writing conventions, ownership of ideas, and academic discourse.

In return, Audrey shared a game with questions focused on in-text citation issues. When Lauren's students were given the option to play Audrey's college-level KAHOOT! game, they welcomed the challenge. Though they seemed intimidated at first, after a few questions, they grew more comfortable, and several expressed surprise that college students were studying the same topics as they were. They were especially proud when they were able to answer some of the college-level questions correctly. Lauren had heard her younger students talk about college as a faraway, mysterious place where they would be able to simply study the subject of their choice with no overlap in content with the work of high school. The game exchange disabused them of this misconception.

One challenging element of Audrey's KAHOOT! game was that the example sentences were taken from student essays on *The Great Gatsby*, which Lauren's ninth graders had not read. Though the context was not necessary to address the format of the quotation (the aspect being tested), many students were distracted by the unfamiliar textual references. Nevertheless, playing a college-level KAHOOT! game imbued the room with the loudest learning energy of the school year.

KAHOOT! games are nothing radically new; educators created and played games well before the existence of web-based platforms. KAHOOT!, however, enables teachers and students to create those games quickly and easily and in a professional template complete with music and color. Similarly, the Twitter conversation that brought us together is not so different from the kind of conversation that two educators might have over lunch at a conference. Yet Twitter enables this kind of informal, spur-of-the-minute exchange to occur at any moment, even asynchronously, and among educators in different locations. The exchange of educational resources has always occurred among

teachers; Twitter and KAHOOT! here enabled a simple, fast sharing that once would have been more involved and, therefore, less likely to happen. KAHOOT! and Twitter, as digital platforms, made it easier for us, and our students, to play and learn together.

### **Playing and Learning Together**

"Millennials" and "Generation Z" learners have been in the K-12 pipeline for some time, so elementary and secondary educators have had to time to adjust their pedagogies to meet the educational needs of students who were "exposed to technology from birth" (Rickes, 2016, p. 31). In higher education, however, passive, teacher-centered, lecture-based

instruction is still the most common instructional modality (Rickes, 2016). As Prensky (2001) noted almost twenty years ago, "today's students are no longer the people our [higher] education system was designed to teach" (p. 1). Higher education faculty, like Audrey, may be able to learn from and

capitalize on the work of K-12 peers to develop active learning experiences that meet the needs of today's learners.

Lauren's game, in this sense, reflects the broader shift in K-12 away from traditional lecture instruction; the KAHOOT! game enabled her class to have a high-level, student-centered discussion of academic integrity. Lauren's approach demonstrates the many ways in which K-12 educators have been on the forefront in taking advantage of technology and adjusting their instructional methods to promote active learning and give students more agency. As one of Lauren's students noted, "The idea of interactive learning is something that is starting

to be integrated more in the curriculum and I think that Kahoot is definitely a useful tool for the students and teachers" (personal communication, June 29, 2018). The appeal of interactive learning holds true for older students as well. In a course evaluation, one of Audrey's college students remarked, unprompted, "The Kahoot games made each lesson fun and kept my focus." The student comments here affirm what our impromptu connection and subsequent discussions and research validated: Engaging, interactive learning can help us meet the needs of our students.

K-16 educators are engaged in a shared enterprise as we strive to teach a new generation. Thankfully, social media like Twitter has made networking and

collaborating across
educational sites and levels
easy. Where we once had to
seek out new ideas within the
walls of our institutions,
educators today can find
ideas and innovative practices
not just in scholarly journals
but in the informal
Professional Learning
Networks (PLNs) that exist

online. For example, several Twitter chats on topical subjects (Fingal, 2018) appeal to educators across grade levels (e.g., #edtechchat, #games4edchat).

Now more than ever, it seems imperative that we provide and seek out opportunities for discussions between high school and college educators to encourage articulation and collaboration across educational sites and levels. For example, in our home state, the New Jersey Writing Alliance ("New Jersey Writing Alliance") provides opportunities for cross-site networking and professional development around the teaching of writing.

The National Council of Teachers of English (NCTE) regularly features presentations on shared issues among high school and college sections at their Annual Convention. NCTE's constituent groups, such as English Language Arts Teacher Educators (ELATE), also include sessions on topics of interest to educators across sites and levels. For example, ELATE's Commission on Digital Literacies and Teacher Education (D-LITE) hosts popular presentations on using technology in the English Language Arts classroom that are attended by K-16 faculty. Cross-level, K-16 conversations like these are critical to enable educators to see connections, share resources, and increase continuity of instruction.

As we have addressed, digital platforms like Twitter and KAHOOT! make teacher collaboration in the service of greater student engagement much easier. Educators such as New Jersey teachers Kate Baker and Shari Krapels (2018) use technological tools to connect their ninth- and eleventh-grade classrooms across the state and allow their students to peer edit in virtual spaces. Baker (2018) has even set up a website as a digital "classified ad" space where teachers looking to collaborate can post their requests. More and more, technology allows teachers across levels and locations to move out of the isolation of our classrooms and silos, connect to each other and share expertise and games, and in so doing, meet the needs of our students.

### **Not Just Fun and Games**

Through our fortuitous meeting on Twitter, we were able to swap some fun KAHOOT! games. Our exchange was grounded, however, in the shared recognition of the need to find innovative ways to address the mundane but critical issues of MLA format and academic integrity.

Our subsequent discussion of our collaboration has made clear that the use of KAHOOT! games in both of our classes achieved outcomes beyond the simple fun of a game. The jocular and low-stakes environment of the KAHOOT! game combined with the camaraderie of competition enabled substantive, heartfelt, and student-centered discussions of academic integrity that could never have been achieved through the usual dry, teacher-led lecture about plagiarism.

Collaborations remind us that we can all learn from each other, as can our students. And teachers can start small, even with one mini-lesson—our KAHOOT! game exchange only took up about 15 minutes of instructional time. We just need to be willing to play.

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