Can Kahoot be used as a supplement to safety orientations?

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For: ASSP Greater San Jose Chapter

Hi everyone! My name is Russell, and in 5 minutes today I'd like to share with you a small idea I've been interested in for how to make safety orientations just a little more engaging and a little more effective.

About me

- **Sophomore at Stanford**
- **Studying Computer Science and Biology (?!)**
- **Passionate about OSH**
  - First Aid | CPR | AED certified
  - Currently doing OSHA 30 Construction online
  - Trying to learn best practices as much as possible
  - Toured manufacturing plants, construction sites

Before we start, a few quick facts about me. I'm a sophomore at Stanford, I'm studying computer science, and in the last few months I've become very passionate about safety in the workplace. When I introduce myself, a lot of people sort of laugh or are confused about why I'm interested in safety if I'm studying computer software. In general, safety really excites me because it's a really complex problem that involves everything from human health to design and engineering, and most importantly, taking care of people - questions about empathy and trust, team-building and human relationships.

And I do see a very bright future for technology to play a role in safety, whether it's drones or cameras watching out for danger or sensors or uniforms that help people stay cool out in the sun, or keep track of people's heart rate, oxygen, vitals. Even the sensors on the backside of cars today that automatically stop the car when it's about to run something over -- these really ought to be integrated into our forklifts and trucks, etc. So I do think more people in the world should take in interest in safety.

Context: Safety training comes in two parts

and

Anyway, let's begin. It's to my understanding that safety training comes in two parts: we have on-site training -- your outdoor toolbox talks and hands-on coaching, out on the field or the production floor. And we have classroom training -- powerpoints in an air conditioned room, usually for orientation for new employees or some sort of assembly or meeting giving a safety refresher. As I've heard a couple of times, people learn and retain information best with the on-site teaching, of course, but there are some times when we do need to use the classroom-type style. For this presentation, I'd like to focus on those times when we are using the classroom-type training.

The trouble with Powerpoints

- Inherently boring
- Lower information retention compared to on-site
- **Yet a necessary evil:**
  - New employees
  - Large groups
  - Fast rate of information transfer
  - Standardized set of information
  - Formal requirements
- **Passive learning (vs. active learning)**

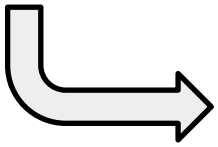
Now, the classroom training usually comes in the form of a packet that the safety manager is reading to the person, or in the form of Powerpoint that can be as long as 60 slides or more. As we all know, the problem with powerpoints is that as they get too long they become inherently boring. The boring meeting, or the boring lecture---I fall asleep in class all the time. Which is ironic, of course, because I'm giving a powerpoint right now. But that goes to show how necessary powerpoints can sometimes be. With safety training, perhaps we want our new employee to get familiar with all the different aspects of safety before bringing them on-site, or we are trying to communicate a lot of information at once, or the safety information we transmit needs to be standardized to meet formal requirements. So that's why it's a necessary evil.

In terms of the pedagogical research, the reason why powerpoints are inherently boring is because they are a form of passive learning as opposed to active learning. By passive learning I mean information is going into the eyes and ears in one direction, and that's it. Whereas when someone is being quizzed on something, or being asked to demonstrate on the site what they learned, that's what we call active learning. The person learning is now learning not just with their eyes and their ears, but also with their speech and their hands and their body--and even with their nose, with the smell of the things around them. The whole experience becomes locked into memory, as opposed to staring at a projector, which is kind of inactive like watching television.

So the goal is to move away from passive learning as much as possible and towards more active learning. More quizzing, more experiences, more asking the person to teach back to you what they just learned.

The use of games in education

- Constantly debated in educational circles
- Games as an educational tool are a double-edged sword: effective when it works, off-putting when it doesn't
- Game has to resonate with people who play it



Kahoot!

So we're stuck in this dilemma where safety training in front of a Powerpoint ends up being boring. In any other circumstance, it might be okay for a presentation to be boring, but because this is a question of safety we really need people to be paying attention.

This is where the role for games comes in. Actually, I might want to ask: How many people in the room have supplemented their safety powerpoints with an activity or a game, like roleplaying?

As some of you may know, there's always a delicate balance when it comes to using games to teach or reaffirm a lesson. Many times, I've had teachers try to create a game or activity with good intentions but it's not quite on beat, and so nobody actually takes it seriously. And then we'd all wish the teacher went back to giving Powerpoints.

(An example of this that comes to mind is a class I'm taking on Preventing Human Extinction. We were trying to model nuclear peace trust by playing an equivalent to rock-paper-scissors (cooperate-defect) with someone 5 times and writing down the result each time. But it really wasn't a good example of what we were trying to learn and was mostly tedious. And it did not feel "high-stakes" like nuclear war, and so people just did whatever they thought was funny).

Worst-case scenario, a game can feel like a waste of time or even demeaning to the people playing if it's not working out. But I would still encourage you to try as many new games as possible because you never know which one is going to stick. And then be sure to eliminate it as soon as you can tell it's not working. Anyway, that brings me to Kahoot, which is an example of a game that is used to help with learning.

What is Kahoot?

- A tool that creates audience participation by inciting a level of competition between class members
- Instructor creates a "Kahoot game": a series of multiple choice questions displayed on a projection or monitor
- Students answer on their smartphone (nothing required except Internet connection)
- Points awarded for speed and accuracy; results displayed on game leaderboard

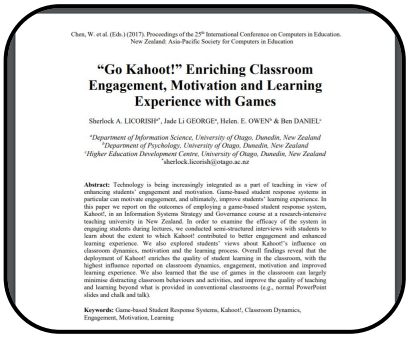
Kahoot is basically like a game show-style competitive quiz you can use at the end of your powerpoint lesson. It's made up of a bunch of multiple choice questions that you create, and then it goes up on a projector or monitor for everyone to look at. The students join the game through their phone (there's no app; just connect to the Internet) and then win points for getting questions right and answering quickly. The people who are in the lead show up on the screen after each question.

History of Kahoot

- Made at a university in Norway
- Became extremely popular in middle school and high school classrooms
- Spread by word of mouth from teacher to teacher
- Game has been played 60 million times since 2013

I would say the most interesting part about Kahoot is its history. It's not something that was ever really marketed. It became popular organically, by teachers telling each other about it. I know because it's something that our teacher had us play in middle school one day--the first time I played this it was surprisingly fun--,and next thing you know it was in every class, and then it followed me to high school too. That's basically where I got the idea from for using this in safety training. So in terms of its merit as a game, I would say the people who made it really got the design aspects right: It's very easy to use, and it gets people excited and competitive.

Pedagogical value of Kahoot



Chen, W. et al. (Eds.) (2017). Proceedings of the 25th International Conference on Computers in Education. New Zealand: Asia-Pacific Society for Computers in Education

"Go Kahoot!" Enriching Classroom Engagement, Motivation and Learning Experience with Games

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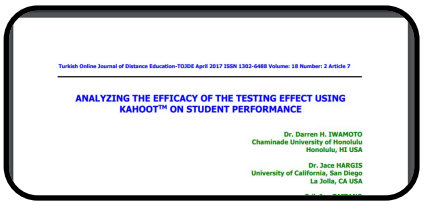
Abstract: Technology is being increasingly integrated as a part of teaching in view of enhancing students' engagement and motivation. Game-based student response systems in particular can motivate engagement, and ultimately, improve students' learning experience. In this paper we report on the outcomes of employing a game-based student response system, Kahoot!, in an Information Systems Strategy and Governance course at a research-intensive teaching university in New Zealand. In order to examine the efficacy of the system in engaging students during lectures, we conducted semi-structured interviews with students to learn about the extent to which Kahoot! contributed to better engagement and enhanced learning experience. We also explored students' views about Kahoot!'s influence on classroom dynamics, motivation and the learning process. Overall findings reveal that the deployment of Kahoot! enriches the quality of student learning in the classroom, with the highest influence reported on classroom dynamics, engagement, motivation and improved learning experience. We also learned that the use of games in the classroom can largely minimise distracting classroom behaviours and activities, and improve the quality of teaching and learning beyond what is provided in conventional classrooms (e.g., normal PowerPoint slides and chalk and talk).

Keywords: Game-based Student Response Systems, Kahoot!, Classroom Dynamics, Engagement, Motivation, Learning



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ANALYZING THE EFFICACY OF THE TESTING EFFECT USING KAHOOT™ ON STUDENT PERFORMANCE

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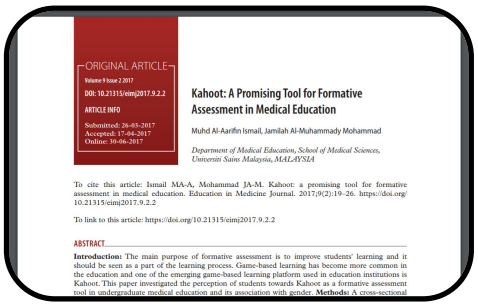

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Kahoot: A Promising Tool for Formative Assessment in Medical Education

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ABSTRACT

Introduction: The main purpose of formative assessment is to improve students' learning and it should be seen as a part of the learning process. Game-based learning has become more common in the education and one of the emerging game-based learning platform used in education institutions is Kahoot. This paper investigated the perception of students towards Kahoot as a formative assessment tool in undergraduate medical education and its association with gender. **Methods:** A cross-sectional

There's a little bit of research on the game, using it in K-12 classrooms to medical schools, but their analyses are not particularly deep. The research mostly focuses on an affirmation of the "testing effect," which is the hypothesis that quizzing and testing people helps them learn, sort of as we discussed prior in terms of active learning. Regardless, I would intuit from common sense that something that gets people excited and competitive certainly helps them learn.

The one drawback to using Kahoot is that it does require a large number of people (5 would be the minimum) because more people add to the competitive atmosphere.

Demonstration of Kahoot

I’ll open up a demonstration of Kahoot so everyone can play and get a feel for what it’s like.

Key takeaways

- Powerpoints must be used carefully
- Look for ways to maximize engagement and interaction during training sessions: experiment with many games
- Be constantly quizzing: testing is part of the learning process
- Try Kahoot and let me know how it goes!

Key takeaways -
Do whatever you can to make powerpoints less boring! Flavorful experiences help stick memory.
It's important to quiz and test what people have learned, not just for some certification, but also because it's one of the best ways to help them learn.
I'd love you to try Kahoot and let me know if it works or not. I'll have a link to the Kahoot I made on the next slide in case you want to reference it.

Questions and Feedback

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Link to sample Kahoots: [bit.ly/safetykahoot]

Help me with my project:
[Form at http://bit.ly/helprussell]

Thank you!

Thank you for listening! Questions and comments?