Does Game-based Learning really work?

Alf Inge Wang
Professor in Game Technology
Norwegian University of Science and Technology
Inventor/Co-founder Kahoot!
Co-founder BitPet, PlayPulse
Agenda

Motivation for games & learning
Effect of game-based learning in the classroom
Demonstration!
From Lecture Quiz to Kahoot!
Transform unengaged students...
...to listening and engaged students
Transforms passive students...
... to active in own learning
From one-way communication
...to two-ways interaction
Provide useful feedback to instructors
Provide useful feedback to students
Results in more positive attitude towards learning
The effect of using Kahoot! for learning -
A literature review
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<th>Topic</th>
<th>Percentage of Studies Covering a Topic</th>
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<td>Classroom dynamics</td>
<td>35%</td>
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<td>Student anxiety</td>
<td>15%</td>
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<td>Students’ perception</td>
<td>88%</td>
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<td>Teachers’ perception</td>
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Studies on Learning effect

- Quasi-experiment: 75%
- Case study: 14%
- Other: 11%

Participants
- Higher Ed: 83%
- K12: 17%

Studies testing statistical significance
- No sign effect: 17%
- Positive effect: 83%

36 studies on the learning effect of using Kahoot!
Significant results on learning

- Sign improvement on tests, exams, and grades (from 6% to 38%)
- Highest learning outcome: Students creating and hosting own kahoots
- Other positive effects: Improved class attendance, less late arrivals to class, higher downloads of course material, improved classroom dynamics
- Additional 12 studies comparing technology-supported learning including Kahoot! vs. traditional teaching all showed improved academic results
Learning Performance main conclusion:

“Kahoot! can have a positive effect on learning compared to traditional and other learning tools and approaches across various contexts and domains”
Classroom dynamics

34 studies investigated how K! affected classroom dynamics
Statistically significant results

- Classroom dynamics reduced after five months of use compared to first time.
- Use of audio and music had a positive impact on questions and discussion in class.
- Positive impact on interactivity with teacher and peers, attendance and participation (large effect).
- Positive impact on motivation to participate.
Classroom dynamics improvements

Teacher-student interaction
Student-student interaction
Easier to participate in class
Improved classroom atmosphere
Student anxiety
14 studies contained results related to student anxiety
Results related to student anxiety

- 10 studies reported that Kahoot!
  - Reduced student anxiety to ask questions
  - Reduced stress and tension
  - Encourage participation without being judged
  - Add humor to class
  - Enable shy students to get involved

- 2 studies show statistical significant reduction in student anxiety

- 1 study reported that K! could produce agitation (no statistical analysis)
Students’ attitude and perception

82 studies had results related to how students perceive K!
17 studies with statistical significant results

- Improved motivation, concentration and engagement compared to other quiz tools
- Improved perceptions when using audio and points vs. not using audio and points
- Improved attendance, participation, motivation and satisfaction
- Higher concentration, engagement, enjoyment, perceived learning, motivation and satisfaction vs. Quizzes and Google Forms
- More positive students when using K! compared to Socrative
Main conclusion students’ perception

• Students have a very positive perception of the use of K!:
  - Motivation, engagement, concentration, perceived learning, attention, enjoyment, satisfaction and confidence

• Main challenges:
  - Technical issues, hard to read questions & answers on projected screen, time pressure, afraid of losing, hard to catch up if incorrect answer has been given
Teachers’ attitude and perception

10 studies investigated teachers’ perception of using Kahoot!
Results

• One statistically significant result:
  - After starting to use K!, it increased teachers’ motivation, it enhanced teaching, and resulted in better teaching

• Positive results:
  - Easy to use, support instructive work in class, assess students’ knowledge, stimulate student participation, increase students’ interests, wake up slumbering students, engage students

• Challenges:
  - Afraid of student failing the quiz, lack of infrastructure, difficult to get question-timer right, scoring based on how quickly students answer reduce student reflection
Thanks!

- Email: alfw@idi.ntnu.no
- Twitter: @drfinge
- Homepage: finge.com
- Publications on Game-Based Learning: gbl.finge.com

kahoot.com