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# Kahooting for Learning

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**Abstract:** This paper describes an approach to utilizing a quiz game for learning purposes that involves student engagement. Instead of teachers making up the questions for the quiz game, the students are to find questions and answers to the quiz game. This activity support and stimulate the reflection process with the students. Acknowledging that reflection is the bridge between the curriculum and learning, this activity can support the learning outcome. Using games for learning purposes is not new, but at the Inland Norway University of Applied Sciences, student developed content has become a subject of research with regards to learning outcome, in several courses. In this paper, the course is about methodologies for collecting, organizing, analysing and discussing data for research purposes. The quiz game used is Kahoot!. Kahoot! is a Norwegian developed quiz game that has had a world wide expansion. According to their website ([www.getkahoot.com](http://www.getkahoot.com)), there are now over 70 million active monthly users and it is used in all countries in the world. The game can be played both in single player mode and in team player mode. For this study we have only used single player mode. The data are collected from interviews and a survey. This mixed methods approach has provided data that we have analysed and will be presented and discussed in the paper. The data is collected over two years. The preliminary results show that the students claim that making the questions and playing the quiz are two activities that contribute towards learning. They report on finding the gaming fun, and developing the questions and answers contribute towards their experienced learning outcome.

**Keywords:** gaming, learning, quiz game, learning outcome

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## 1. Introduction

This study is a follow up on a previous study on using student input towards a quiz game. The results from the previous course were promising as the students seemed to appreciate the involvement and reported on a learning outcome from being engaged in developing questions for the quiz game. The quiz game in question is the Norwegian developed Kahoot! which is now used all over the world. With 70 million active users ([www.getkahoot.com](http://www.getkahoot.com)) it is a quiz game that has had a formidable spread throughout the world.

The game itself (Kahoot!) has several modes, and one can play ready made quizzes, quizzes that other players have shared, and one can make own personalized quizzes. It is possible to play in teams and in single mode, since you have to add an alias one can stay anonymous when playing. The mode used for this research is the generic, ordinary mode with single players.

The students are - as last year - requested to hand in questions and answers from the curriculum. For each question, we need four answers where they can decide if one or more are correct answers. Each group got a chapter from the text book and were requested to develop 2-3 questions with corresponding answers.

We wanted to investigate if this group of students found it equally fun and engaging, and if they had a learning outcome not only from the gaming, but also from developing the questions and answers for the quiz.

We collected the data using interviews and a survey.

## 2. Theoretical backdrop

The original idea behind having the students develop questions for their own quiz game, is to engage the students prior to the quiz game. Most of the students had played Kahoot! before, but none of the attending students had developed questions for a Kahoot! used for learning purposes. It was thus interesting to investigate if this group of students would perceive this as contributing towards their learning outcome.

As the students attending our university are adult students, it is important to focus on adult educational principles. The students may not have a lot of work experience, but they have quite a few years of school prior to attending university. Also, they are at university because they have actively chosen to apply for a particular study. This imply that they have a purpose with their studying.

Malcom Knowles (1970, Knowles 1984) claim that adults need to be involved and engaged. They also need to be enabled to contribute. By being involved and engaged, the ownership and motivation towards the task also increases.

Motivation is also triggered by relevance and tied to success according to Biggs and Tang (2007). The students need to see the importance and value of the learning activities, and they expect success when they engage in these learning activities. According to Bandura (1997) the more they trust their abilities to succeed, the more energy they put into the task.

Biggs and Tang (2007) claim that the relevant forms of motivation at university level are extrinsic motivation – reward based, social motivation – pleasing role models, achievement based – competitive motivation, and intrinsic motivation. Lecturers at university level should seek to utilize a combination of these forms of motivations in order to facilitate for learning.

Jenny Rogers (2007) also claim that it is necessary to pay attention to *relevance*. The nearer the learning is “real life” situations, the more they perceive it as relevant. This will make the learning more acceptable and they will learn more quickly and efficiently.

According to Diana Laurillard (2005), student–student interaction is valuable to learning, but it is important to beware of the pitfalls of this interaction, such as feedback from the teacher and lack of reflection processes.

Knud Illeris (2007) refer to four categories of learning; cumulative, assimilative, accommodative and transformative learning. The cumulative learning is about acquiring repetition-oriented knowledge. The assimilative learning is about developing and applying knowledge to situations. Accommodative learning is about understanding and interpreting as well as applying in a relevant context, and lastly, transformative learning is about developing “personality-integrated knowledge”, developed “on the bases of which associations can be freely made in all subjectively relevant contexts” (p. 49).

### 3. Methodological approach

The design of the study is a variant of longitudinal design. The data have been collected over a period of several years from groups of students following the course of Quantitative and Qualitative Research Methods. These students were all studying the same course, but not at the same time.

We have collected data by using a mixed methods approach. The data-material presented here, has been collected by means of different methods: using unstructured interviews and observation conducted during the preparations for the kahoot, and observing the students during the game sessions. In addition, surveys have been conducted after the game sessions to investigate the students’ experience of the kahoot.

The students have been given an assignment of making questions from the core curriculum of the course as a part of doing preparations for the exam. The questions have then been used by us to create a kahoot game. After going through the kahoot, the participants were asked register their names on a list, so that they later could receive an email from us with a link to a questionnaire. They then were asked about how they thought about first making the questions and then answering them in order to investigate if this will increase the motivation for the course content.

### 4. Results and discussion

The students claim to have learned from the experience. Not only do they find the kahooting fun and engaging, but also to see their own questions on display is fun.

To find questions and answers are also viewed as a part of the learning experience. There is a difference in how much effort is put into making questions and answers, but most of the groups have made questions (and answers) that were possible to ask in a Kahoot!

The students worked in groups to form the questions, but as individuals during the quiz. Working in groups allowed them to draw upon each other and co-operate. When they play, they are more “on their own” and fend for themselves. The student – student interaction when developing the questions and answers, is in alignment

with what Laurillard (2005) describe as valuable to the learning outcome. However, it is important with the reflection processes and the teacher feedback. The reflection processes could probably be better facilitated by the teachers as the process itself could be organized differently, e.g. by not having them use the books and discussing with the groups in order to come up with the questions and answers. The teacher feedback was in form of quality assuring the questions and answers the first year. This second year, the quality assurance was poorer and we (the authors) spent less time quality assuring the questions. This led to a misunderstanding during the Kahoot! as some of the answers marked as "wrong" were actually right. Some of the students had ticked of this as the right answer and were not awarded points. However, this started a discussion where we established what was right and not.

The game is used for learning purposes, but will according to Berg and Erichsen (2014) not contribute to deep learning. The difference in ordinary use and our "take" on the use is however somewhat different. The ordinary use starts from the first question being displayed. Our use provide a meeting between the learning and the gaming earlier, and prior to the actual quiz.

The students do display engagement and motivation. Our observations show that they are working seriously on their task of finding questions and answers. This resembles what Biggs and Tang (2007) refer to as motivation; they want good grades and claim that this is a way of learning (obtaining the objective), and they want to do well and they have a competitive side that is also displayed both when working on the questions and even more during the kahooting. Maybe some are also motivated by the social aspect of pleasing the teachers, although this is not something that we have clear evidence of.

Also, the students know how the quiz works, and their trust in their own abilities of creating questions and answers for the quiz seem high. This is much like Bandura's (1997) explanation of "self- efficacy", the students believe in their own ability of contributing with questions for the Kahoot!. Also to see their questions on display give the students some satisfaction and confirmation of their abilities. The first year of this project, we did not include questions from all the groups as we thought the quiz would then take too long to play. One of the student groups then confronted us with the missing questions from their group, and wanted to know why we did not include them. This show how much this may mean to some students; to be recognized and included.

## **5. Conclusion**

Even if we cannot establish if the students have only surface learning or deep learning, the activity is reported to be supporting their total learning outcome. The activity also provide the students with a difference in their learning approach and by creating the questions and answers for the quiz, they have the opportunity of starting their learning process earlier. Also we register that developing the questions make the students look for "their" questions and this can increase the motivation and their "self – efficacy".

The students recommend this way of working for their summing up and last input before their exam. They claim it supports the learning outcome and the activity provide them with a different approach to the learning. Since most of the students are familiar with quiz games, and the game itself is quite self explaining, the time spent on these activities (developing questions and answers, and playing the quizgame) are time well spent, according to the students.

### **5.1 Further research**

We need to explore this further and also try to establish if we can obtain the deeper learning that Berg and Erichsen (2014) seeks. Would e.g. working without text books and maybe only with their notes and with a teacher support the reflection processes necessary to obtain a deeper learning process.

Also to deploy this way of working with the kahooting could be done in other classes. This would provide us with a larger number of respondents and also establish if it the way of working with the quizzing and the activities we have described, can work on other curricula as well.

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