

Game Elements in Hospital Clinical Practice: Teaching and Active Learning at the University Hospital of Copenhagen

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INTRODUCTION

The education in Biomedical Laboratory Science is a practice-based profession which consist of periods both at the University College Campus as well as in clinical practice. This way theory and practice are closely connected; the clinical training can bridge theoretical knowledge with skills and vice versa. As biomedical laboratory instructors from two clinical departments we will share about our "Spilledage" ("Days with games"), which were the active learning days we conducted with our students from summer 2014 to winter 2017.

OBJECTIVE

The intent of this project was to have students use game elements as a tool for learning content and to make them reflect on their learning processes. The aim was furthermore to encourage students to use higher order thinking (analysis, synthesis and reflection) relevant for their clinical practice.

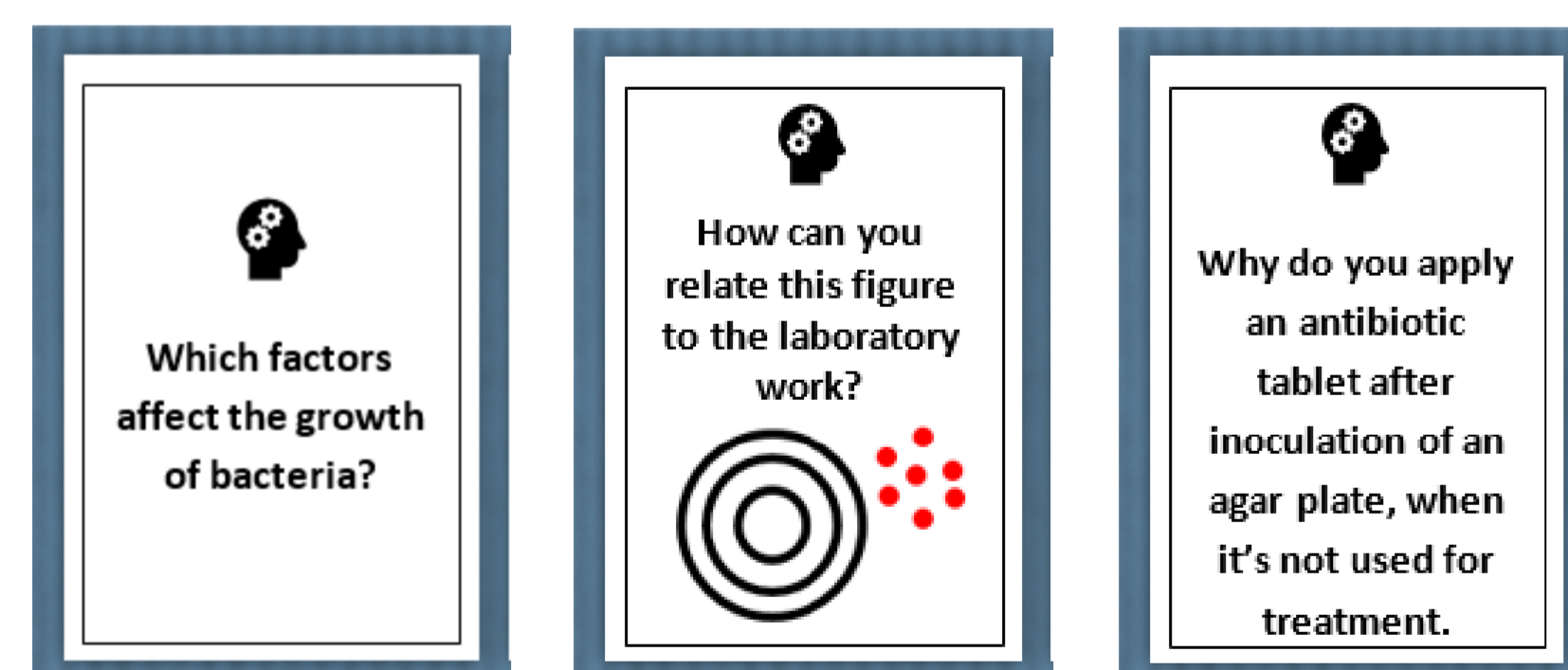


Figure 1: Examples of questions depicted on playing cards.

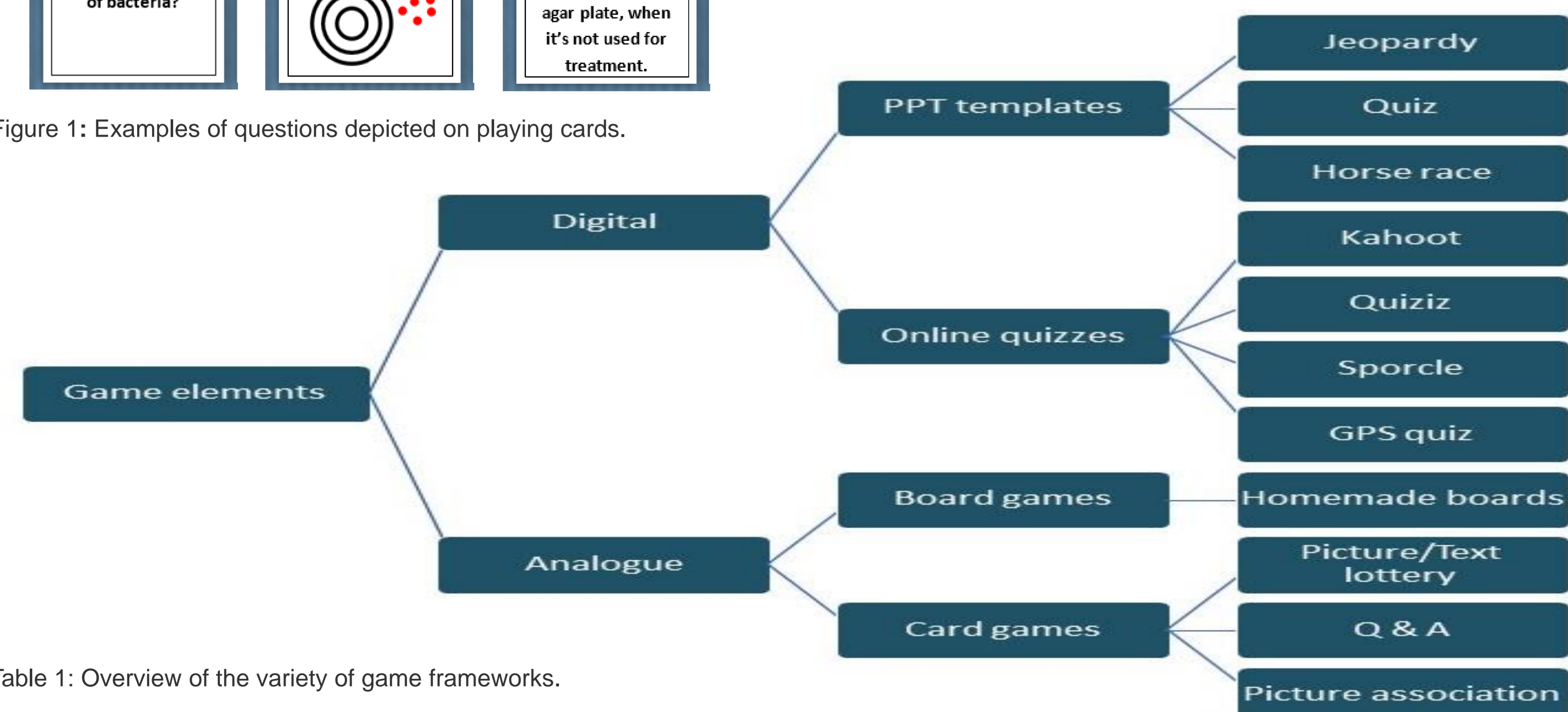


Table 1: Overview of the variety of game frameworks.

Learning Goals

"Whenever we moved the difficulty increased as well"

Motivation

"I find games that are about being the best very exiting. Being a competitive person, I think it is fun that you can see visually that you are lacking behind, and now you need to pull yourself together and dig a bit deeper [in ones mind]"

Feedback

"It was great that you find the answer by talking with each other"

Social Interaction

"Games are [...] something you play with your family [...] so you associate it with something relaxing and fun"

METHODS

Students phrased a set of questions (figure 1), in a variety of game frameworks, such as online quizzes and board games (table 1). The idea was to create an active learning environment where the students analyze, share and produce knowledge through peer and instructor feedback. By creating content the students construct knowledge themselves, which fosters deeper learning.

Students Instructors

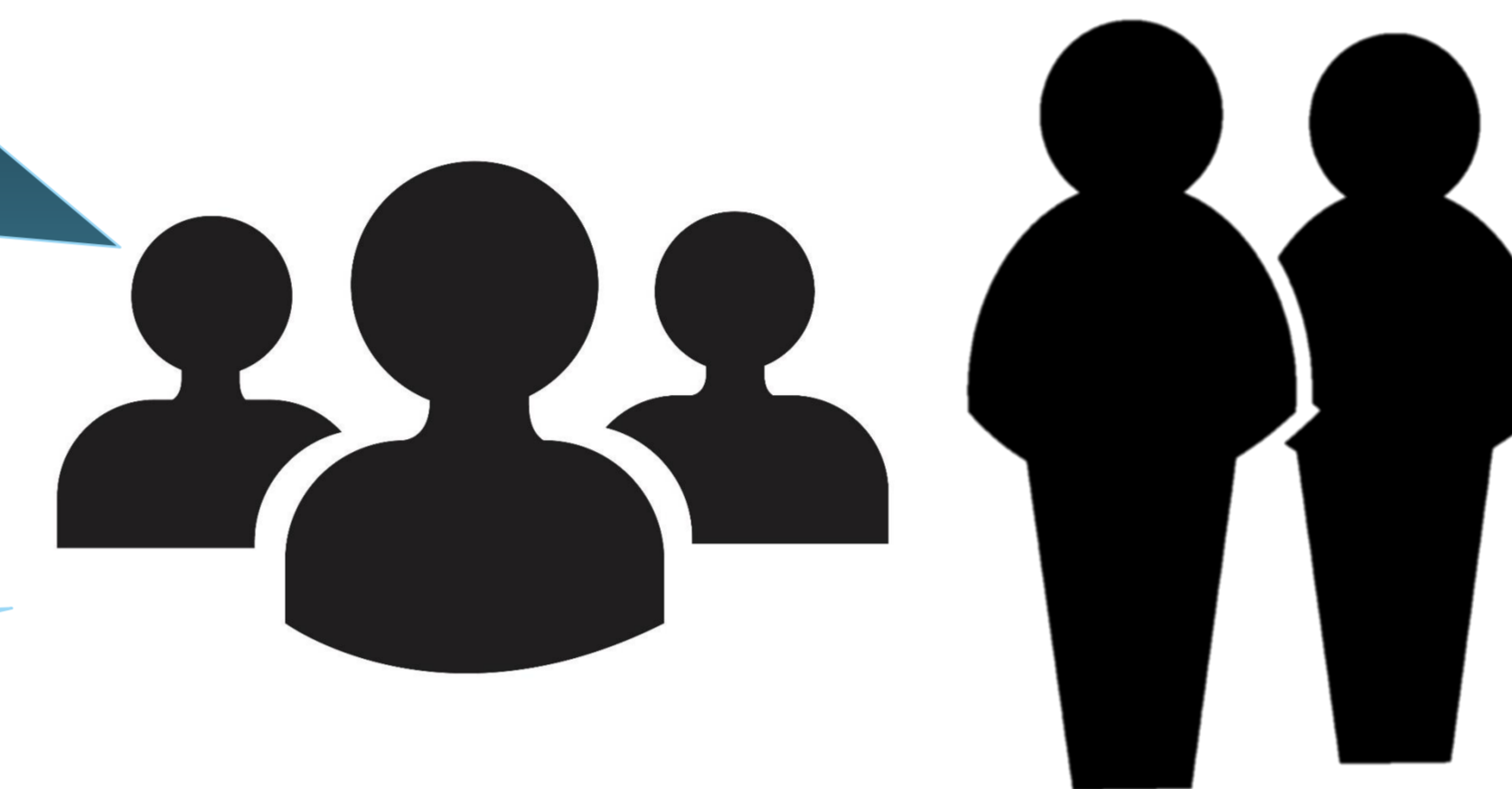


Figure 2. Statements by students and instructors categorized into themes.

The assignments were given to work on individually or collaboratively in small groups. The role of the instructor was firstly to present the students with the game frameworks. Furthermore, the instructor was to act as a general facilitator during the preparation and execution of the games: helping students to activate and engage prior knowledge and to self-reflect on their own knowledge base.

RESULTS

Focus group interviews were conducted in two sessions in winter 2017, each lasting 30-45 minutes: a session with three students and a session with two instructors. Focus questions were open ended. We analyzed statements from the interview data (figure 2) in relation to a set of general themes suggested by M. Prensky (2001): learning goals, motivation, feedback and social interaction. Based on this analysis we found that gamified learning provides:

- a goal driven environment where difficulty increases as students are making progress.
- a competitive and active learning environment that motivates students to participate and encourages them to learn.
- a reflective learning environment where students, through feedback, become aware of their own learning.
- a safe environment with a sense of social relatedness where failure is accepted.

Together these findings point towards gamified learning as a good didactic tool that ultimately supports higher order thinking

Learning Goals

"[The students] are very concerned with creating questions that are very precise and difficult"

Motivation

"[The students] asked for more assignments"

Feedback

"[The students] got more aware of their strengths and weaknesses"

Social Interaction

"[The students] are not afraid of being ridiculed [...] they are very honest, and if they are not able to answer, maybe a co-player can [...] the atmosphere is very relaxed and you just open up"

CONCLUSION

Based on our analysis we conclude that using games in teaching can have a highly motivating effect on students. It creates a safe space and fun environment. However, successfully implemented learning games depend on more than just creating a fun competitive environment; the teacher needs to consider the didactic goals and strategies in order to embed higher order thinking and make students self-reflect on their learning process.

REFERENCES

Prensky, M. (2001). *Digital Game-Based Learning*. New York, McGraw-Hill.

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