



Fostering Engagement with Learning Contents Using Gamification and Microlearning

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Einführung und Organisation
Aufbau und Konzept der Veranstaltung

Vorlesung / Übung	Involving Activities
Self Learning	Coaching

Woche 1: Einführung

Einführung und Organisation
Aufbau und Konzept der Veranstaltung

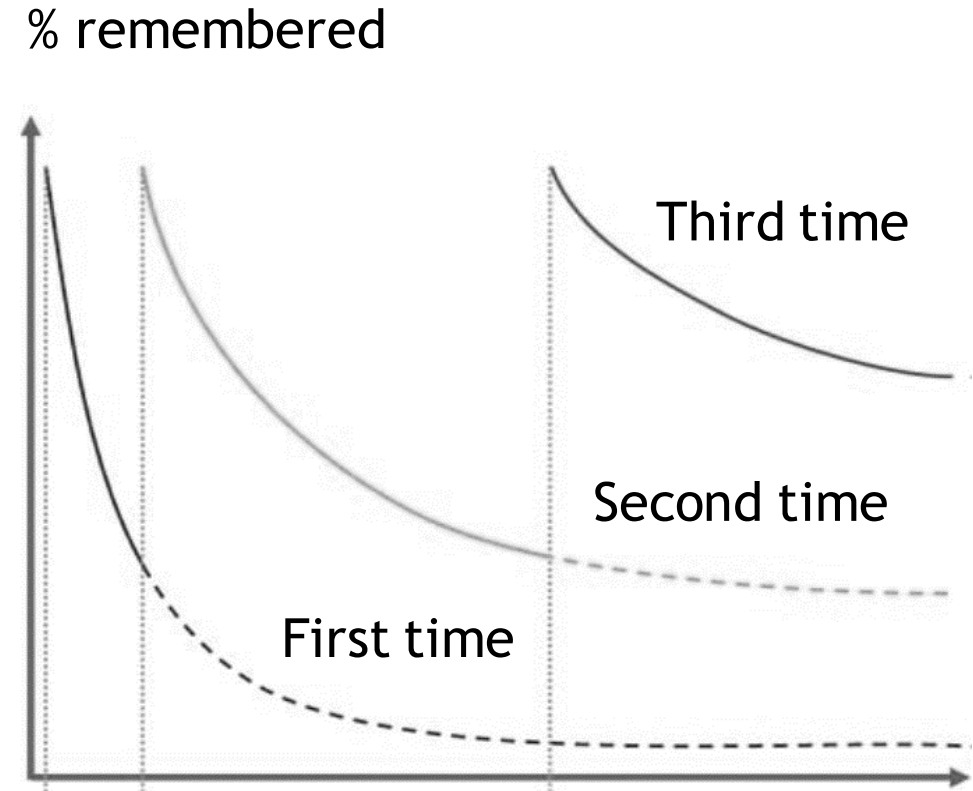
Vorlesung / Übung	Involving Activities
Self Learning	Coaching

Woche 1: Einführung

Microlearning

- Microlearning offers **small training sessions** to engage and motivate learners without overwhelming them.
- Users are free to decide **when and how often** they take part within a given time frame.
- **Ebbinghaus forgetting curve:** our ability to retain information rapidly declines after just 20 minutes.
 - Short learning periods counter this and encourage numerous repetitions over time, which can aid memory retention.

(Ebbinghaus, 1885, replicated in Murre / Dros, 2015)



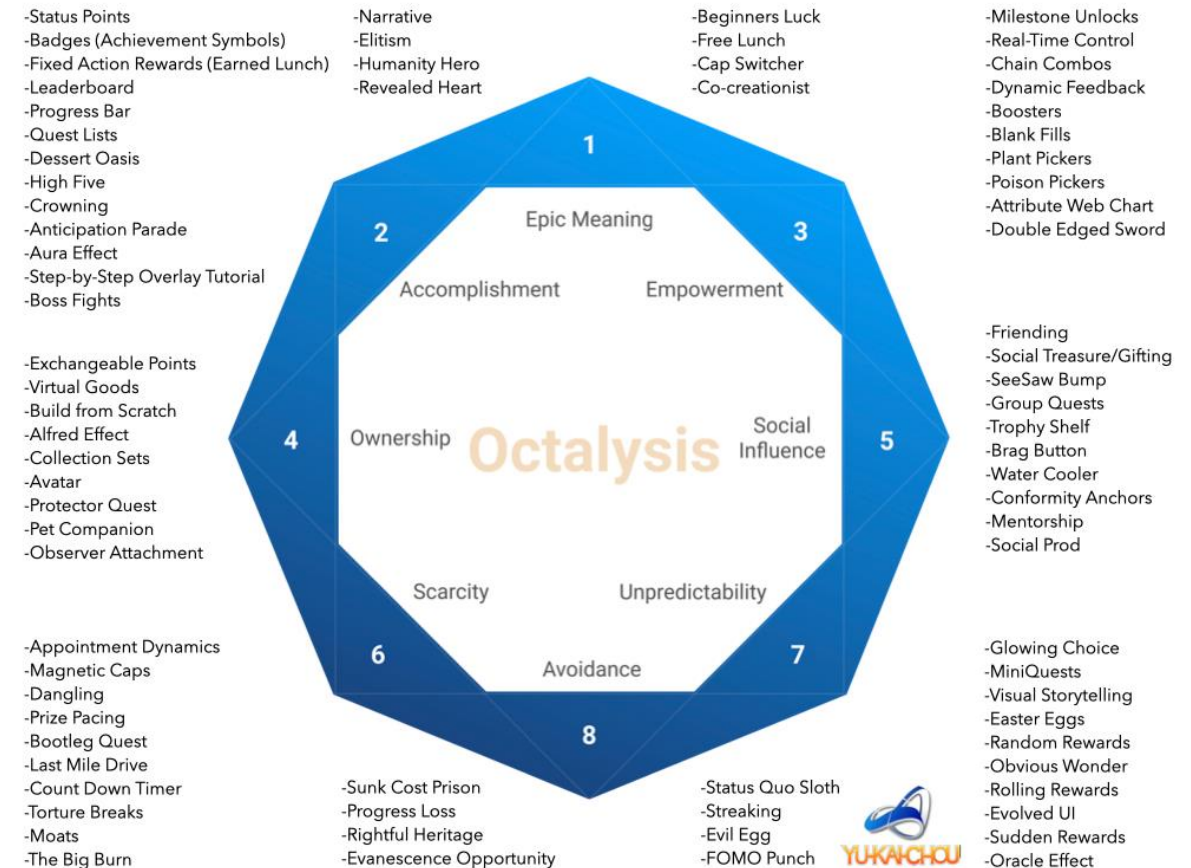
Gamification & Octalysis

- **Gamification** is a process in which game-design elements and game principals are used in non-game contexts.

(Deterding et al., 2011)

- Main benefits of gamification include **increased motivation and engagement.**
- Created by Yu-Kai Chou, **Octalysis** depicts gamification as a framework of 8 pillars which all play together to boost learning success.


(Actionable Gamification, Yu-Kai Chou, 2016)








Application in the KlickerUZH

- KlickerUZH: Open-Source Audience Interaction
 - KlickerUZH was initiated in 2011 and relaunched as an **open-source** project in 2018. Primary focus was the **interaction during lectures** in a **large-scale setting** (e.g., using polls).
 - The next iteration of KlickerUZH, as shown here, will be publicly available as of spring 2023 (public beta). The focus extends into **(gamified) interactions** in the **asynchronous setting** (e.g., repetition and learning in self-service).
 - The project is being developed by the Teaching Center of the Dept. of Banking and Finance, University of Zurich.



 **Project Homepage**
www.klicker.uzh.ch/development

 **Source Code**
github.com/uzh-bf/klicker-uzh

 **Concept**
t.uzh.ch/1pk

KlickerUZH - v3.0

Live Q&A

#feedback

Give open feedback on lecturing
and ask questions anonymously

Was sind Kprim-Fragen?
Gelöst am 14.11.2022 14:20

Kprim ist eine Multiple-Choice-Fragetyp mit vier Antwortoptionen,
von denen mehrere richtig bzw. falsch sein können.



Real-Time Feedback

#feedback

Provide feedback on speed and
comprehension of lecturing

Group Mission

#collaboration

Collaborate on a content-related
case with distributed information

Aktienkurs per 31.12.21 (in CHF) 245.5 CHF	Anzahl Mitarbeitende per 31.12.20 66'674
Anzahl Partizipationsscheine per 31.12.21 40'716'831	Geschätzte Free Cash- flows (in Mio. CHF)
Fremdkapitalkosten kFK (in %)	Reingewinn

1	Silas	2957
2	gianpx	2789
3	Daniel M.	2618

Live Quiz

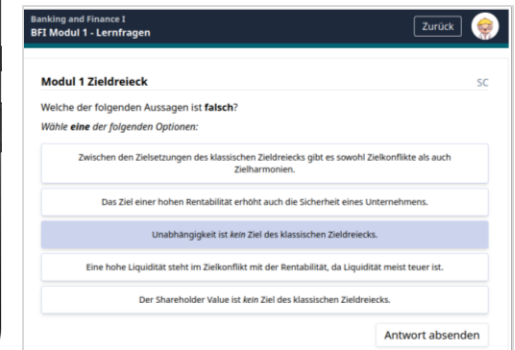
#competition

Participate in live polls/quizzes
and compete against others

Microlearning

#repetition

Practice key materials in time-
constrained micro sessions



Learning Elements

#repetition

Practice course contents in
the eLearning environment



Gamification



Interaction



Analysis

KlickerUZH - Microlearning

Delayed Repetition

Counter the "forgetting curve" by reintroducing content at specific points

Visualized Concepts

Visualize key concepts to make them easier to digest

Low Barrier of Entry

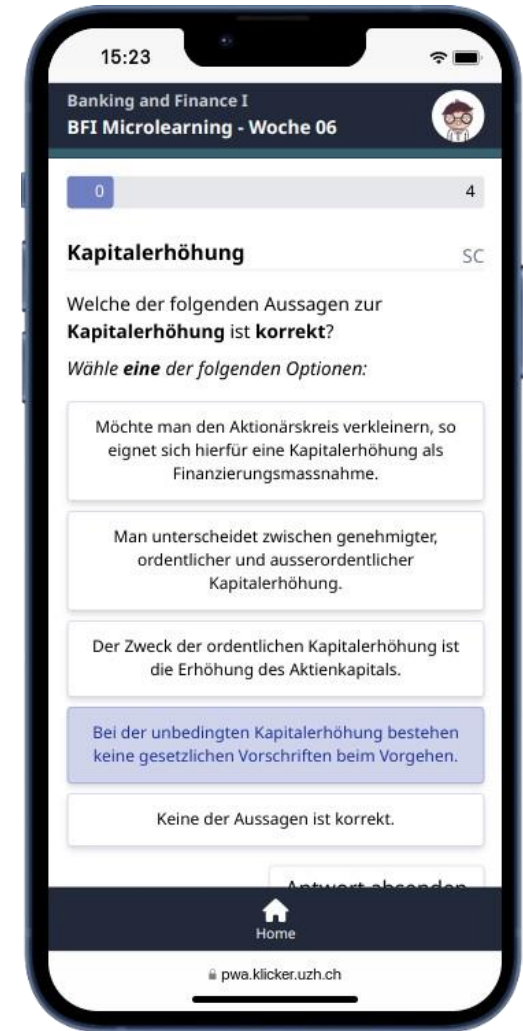
Reduce the effort required to participate by making everything accessible on-the-go

Instant Feedback

Provide instant feedback after the completion of learning elements

Gamified

Participate in the course-level challenge by solving microlearning elements



KlickerUZH - Gamification

Courses

Group KlickerUZH elements
of a specific lecture

Participants

Interact with the KlickerUZH
with an anonymous
pseudonym and avatar

Groups

Allow participants to
connect with others and
solve group missions

Leaderboards

Rank individual participants
and participant groups

Awards

Highlight individual and
group achievements

Banking and Finance I

Leaderboard

Zurück

Leaderboard

Gruppe WhaleWatchers

Gruppe erstellen/beitreten

Individuelles Leaderboard

gianpx

Silas

Daniel M.

1 Silas

2982

2 gianpx

2789

3 Daniel M.

2618

4 BeniDer2.

2577.5

5 Karen

2343.5

6 karte

2287.5

7 marcpj

2271.5

8 JonFavreau

2164

9 Josh02

2157.5

10 andjj

2057

60 JerryWonka

Austreten

590

Anzahl Teilnehmende: 296

Durchschnittl. Punkte: 439.33

Das individuelle Leaderboard wird stündlich aktualisiert.

Gruppenleaderboard

Ülf Fanclub

Bullenmarkt

ITEAM

Bullenmarkt

2163

Ülf Fanclub

1870.5

ITEAM

1515.25

Rasselbande

1214.75

ST & WF Private Banking

1187.5

SpVgg Hive

1147.5

UZH Gang

1146.63

The best

847.75

MaggusRühl

797.17

Anzahl Gruppen: 35

Durchschnittl. Punkte: 557.52

Das Gruppenleaderboard wird täglich aktualisiert.

Gruppen mit einem Mitglied erhalten keine Punkte.

BF-Champion Awards

Erster Zwischenpreis: Silas

50 CHF bQm-Tokens

Gruppenaktivität: offen

50 CHF bQm-Tokens

Zweiter Zwischenpreis: offen

50 CHF bQm-Tokens

Gewinner der Gruppenchallenge: offen

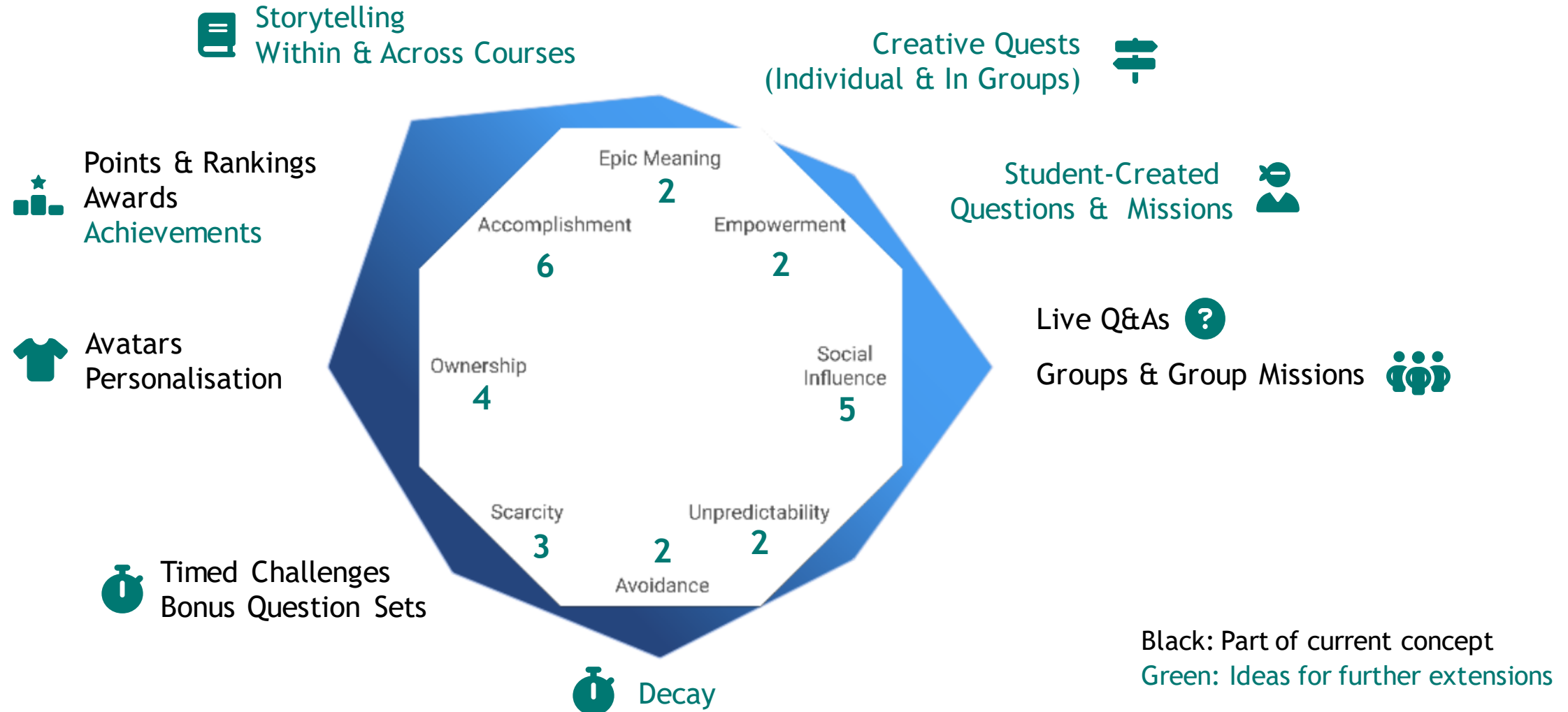
100 CHF bQm-Tokens

Gewinner der individuellen Challenge: offen

100 CHF bQm-Tokens

Application in the KlickerUZH

Octalysis in Practice

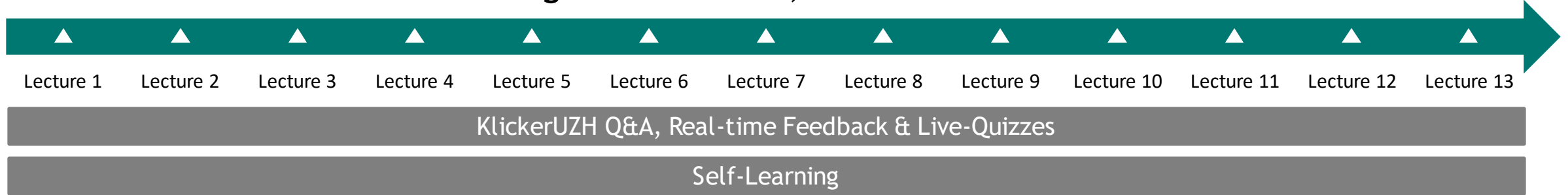




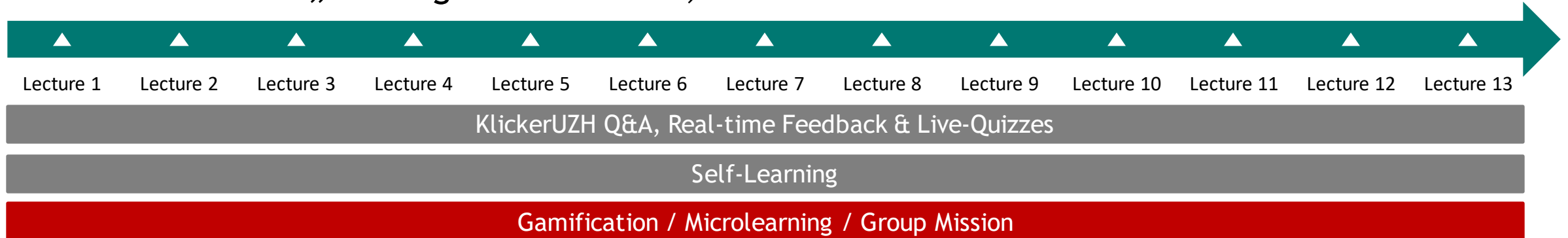
Evaluation of Pilot 2022

Pilot Setup

- **Fall 2020 / 2021:** Lecture "Banking and Finance I", 760 students

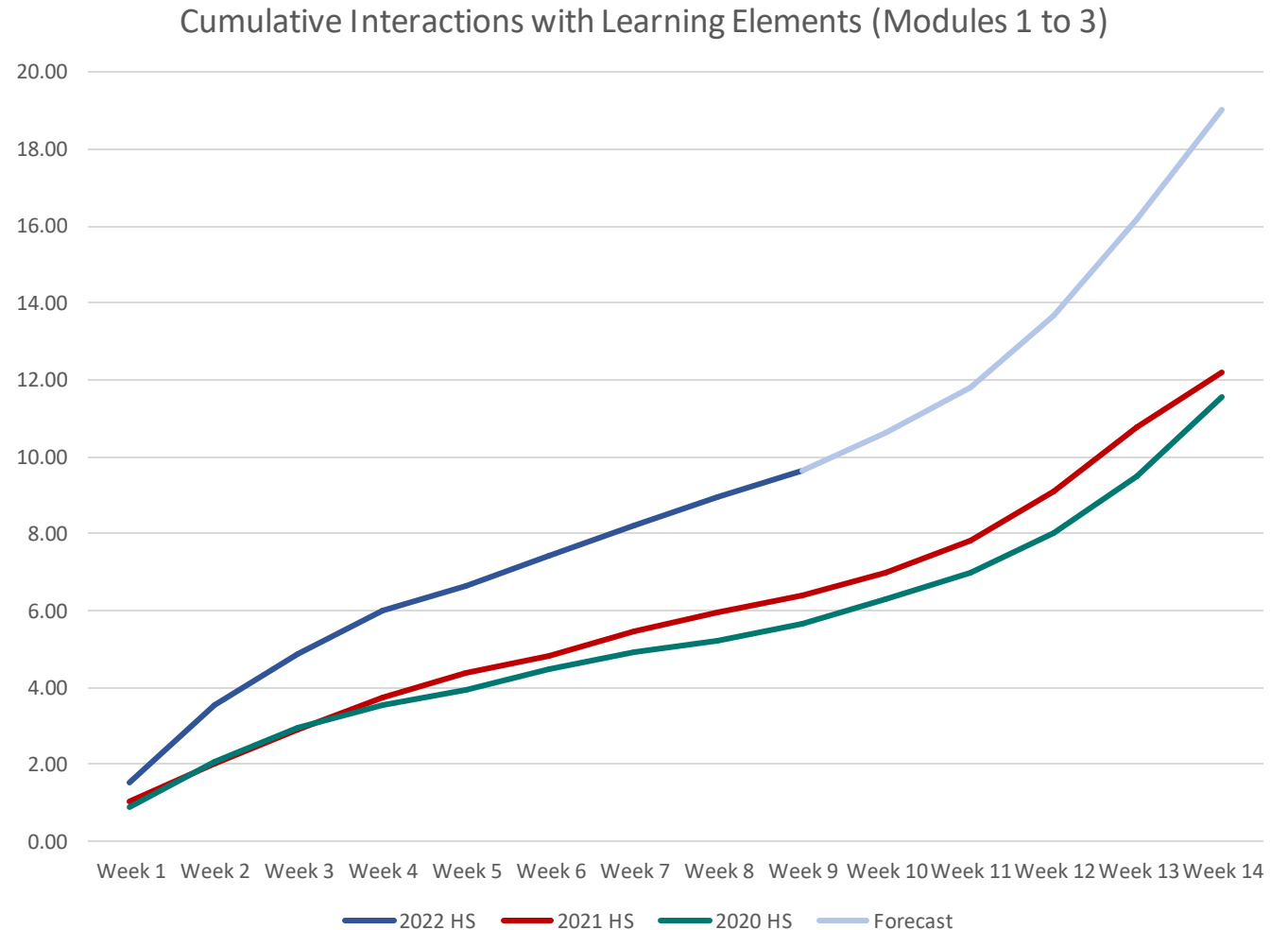


- **Fall 2022:** Lecture „Banking and Finance I“, 686 students



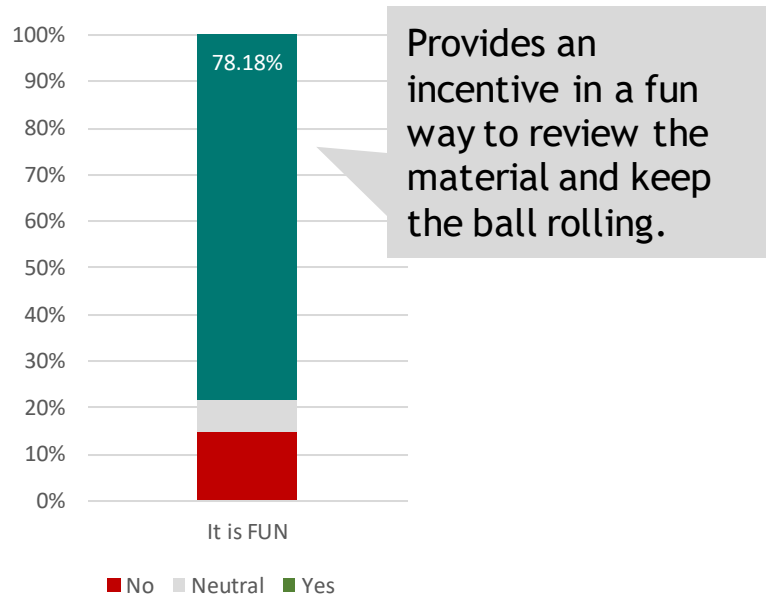
Quantitative Evaluation: Effect on Engagement

- First evaluation based on MC-questions in Self-Learning:
 - **Identical questions** (number and content) in autumn semester 2020, 2021 and 2022
 - New in 2022: Gamification / Microlearning on the course level
- Learnings:
 - **Higher access numbers**, more repetition across all students
 - **More repetition per student**
 - Fall 20/21: Average: 1.96x per student, Maximum: 21x
 - Fall 2022: Average: 2.45x per student, Maximum: 41x

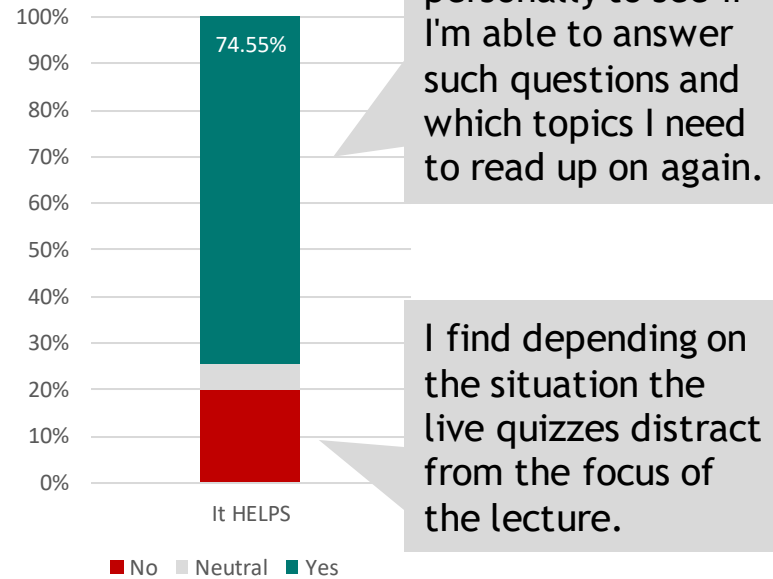


Qualitative Evaluation: Help, fun, and more, please!

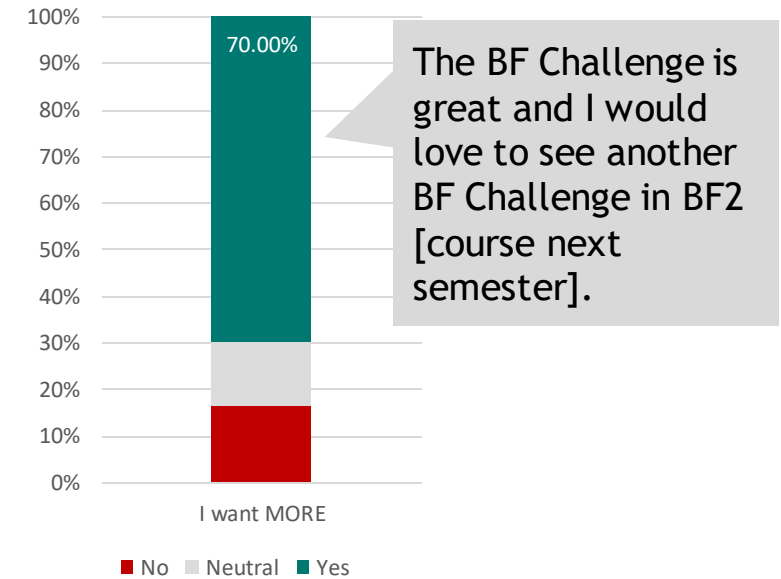
- First evaluation based on survey with N=38 students
- Learnings:



78% agree that the gamified elements are fun.



74% agree that the elements help to revise the lecture content.



70% agree that they want more such elements in their study.



Further Questions or Inputs?

Kontakt

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Concept
t.uzh.ch/1pk