Zürcher Hochschule
für Angewandte Wissenschaften

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**School of
Management and Law**

**Eduhubdays 2022**

# Skills Quest
# – A game-based learning concept that boosts engagement

**Building Competence. Crossing Borders.**

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## Agenda

– Context / Starting point

– Making-of «Skills Quest»

– Research design, population, sample

– Selected results

– Discussion

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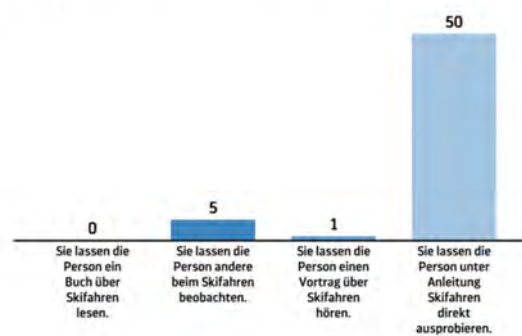Management and Law

## You need to teach someone how to ski. What do you do?

o  You have the person read a book about skiing.

o  You have the person watch others ski.

o  You let the person listen to a lecture about skiing.

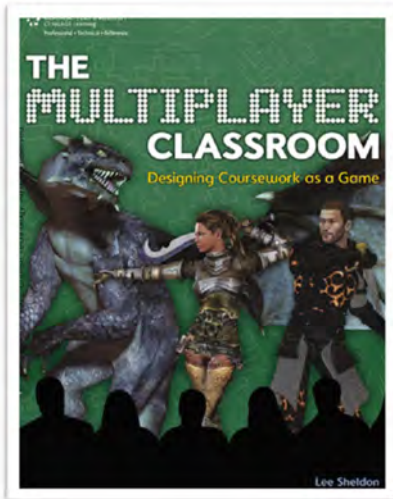o  You let the person try skiing directly under guidance.

→ **Mentimeter-result**

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## Results of the BWL Skills class cohort fall semester 2020



You need to teach someone how to ski. What do you do?

50

5

0                  1

Sie lassen die    Sie lassen die    Sie lassen die    Sie lassen die
Person ein        Person andere     Person einen      Person unter
Buch über         beim Skifahren    Vortrag über      Anleitung
Skifahren         beobachten.       Skifahren         Skifahren
lesen.                              hören.            direkt
                                                      ausprobieren.

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## Context: Module BWL Skills

- **Compulsory module at assessment level in the Business Administration degree program:**
  - 6 ECTS points, block course of 4 lessons
  - Large module /-classes

- **Module content:**
  - Academic writing
  - Project management
  - Teamwork

- **Intrinsic motivation: rather low**
- **Commitment of the students: unsatisfactory**

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## Reward-based gamification

❝ It can have immediate effects and is appropriate for teaching new skills or completing tasks for which users do not have internal motivation.
[Goshevski et al.]

Goshevski, D., Veljanoska, J., & Hatziapostolou, T. (2017, September). A review of gamification platforms for higher education. In *Proceedings of the 8th Balkan Conference in Informatics* (S. 1–6). https://doi.org/10.1145/3136273.3136299

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## Inspiration for development



> Good morning. Welcome to the first class of the semester. Everyone in this class is going to receive an F.
> [Lee Sheldon]

Sheldon, L. (2011). *Multiplayer Classroom: Designing Coursework as a Game.* Boston, MA: Course Technology. https://doi.org/10.1201/9780429285035

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## Reward based Gamification

- 4 categories of assignments (pass/fail):
  - Teamwork (max. 50 points)
  - Disposition/Exposé (max. 60 Punkte)
  - Project management (max. 60 points)
  - Self-study assignments (max. 100 points)

- Assignment configuration in Moodle
- Students can see their score and grade in Moodle at any time
- Since Fall-term 2020: performance record (weighting: 40%)



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## Making-of : What does the Skills Quest look like?



## What does the Skills Quest look like? (→ Quick Moodle Tour)

## Results (preliminary)



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## Research Design, Population & Sample

| Population | Fall 2018 | Spring 2019 | Fall 2020 | Spring 2021 | Total |
|---|---|---|---|---|---|
| Students | Fulltime | Parttime | Fulltime | Parttime | |
| **N Students** | **189** | **317** | **196** | **301** | **1003** |
| Voluntary Gamification (VOL) | 53 | 45 | – | – | 98 |
| Compulsory Gamification (LN) | – | – | 196 | 301 | 497 |
| without Gamification (NO) | 136 | 272 | – | – | 408 |

*Notes*: In the voluntary gamification approach, use occurred in only one of several classes. No selection-bias.

**Sample**

**VOL (63) | 64 % response**

**LN (269) | 54 % response**

**NO (243) | 60 % response**

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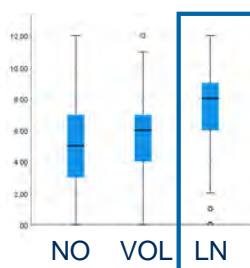
## Selected Instrument in this presentation

**Short scale of intrinsic motivation** (KIM, Wilde, Bätz, Kovaleva & Urhahne, 2009)
with **4 Subscales** (→ 5-Point-Likert-Scale, 0–4 → Sumscore):

- **Interest / enjoyment** (3 Items, Cronbach-alpha: 0.87), e.g.:
  **I find the exercises and tasks interesting**

- **Perceived competence** (3 Items, Cronbach-alpha: 0.76), e.g.:
  **I think I'm pretty good at the exercises and tasks.**

- **Perceived choice** (3 Items, Cronbach-alpha: 0.79), e.g.:
  **When doing the exercises and tasks I can choose how I do them.**

- **Pressure / tension** (3 Items, Cronbach-alpha: 0.75), e.g.:
  **I feel stressed during the exercises and tasks.**

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## Results for Scale KIM (intrinsic motivation)



| Interest / enjoyment | Perceived competence | Perceived choice | Pressure / tension |
|---|---|---|---|
| NO  VOL  LN | NO  VOL  LN | NO  VOL  LN | NO  VOL  LN |
| ANOVA | ANOVA | ANOVA | Welch-ANOVA |
| $P < 0.01$ \| $\eta_p^2 = .19$ | $P < 0.01$ \| $\eta_p^2 = .13$ | $P < 0.01$ \| $\eta_p^2 = .19$ | $P < 0.01$ \| $\eta_p^2 = .04$ |
| **Strong effect** | **Medium effect** | **Strong effect** | **Small effect** |
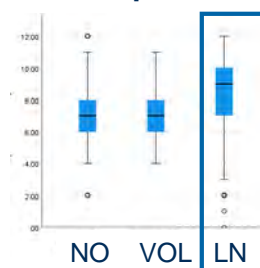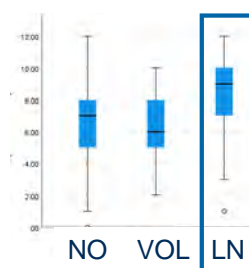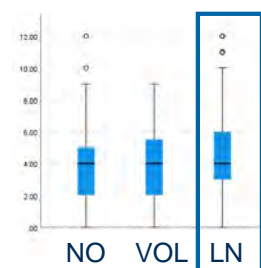
NO = no Gamification, VOL = voluntarily participation, LN = compulsory

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## Open Feedback: Exemplary Feedbacks from Students

What else would you like to tell us for the further development of the Business Skills module? - We look forward to your feedback.

«I think it's great that there is **no MEP** at the end, but that the performance is **constantly checked** throughout the semester. So you stay on the ball from the beginning and really learn things..»

«**Even after Corona**, I would find it interesting to continue with the current format of Skills Quest, as this format **leads to higher achievement** among students.»

«TOP lecture!!! It was a lot of fun.»

«**Keep up the good work.** It doesn't matter if it's online or on-site. These quests force you to go through the material. Even the books with VPN I have read through although it was several pages long. I always used 3 hours+ for the skills quest preparation because I did not know what questions would come. I always give 100% and aim for a 6.»

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## Conclusion

- Reward needs to be meaningful to students
- Students are highly engaged
- Content development *during* semester
- Content better understood

**However:**

- **Use gamification wisely**: Extrinsic incentives can destroy intrinsic motivation.
  (→ see Hanus & Fox, 2015).
- **One size does not fit all!**

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## Discussion



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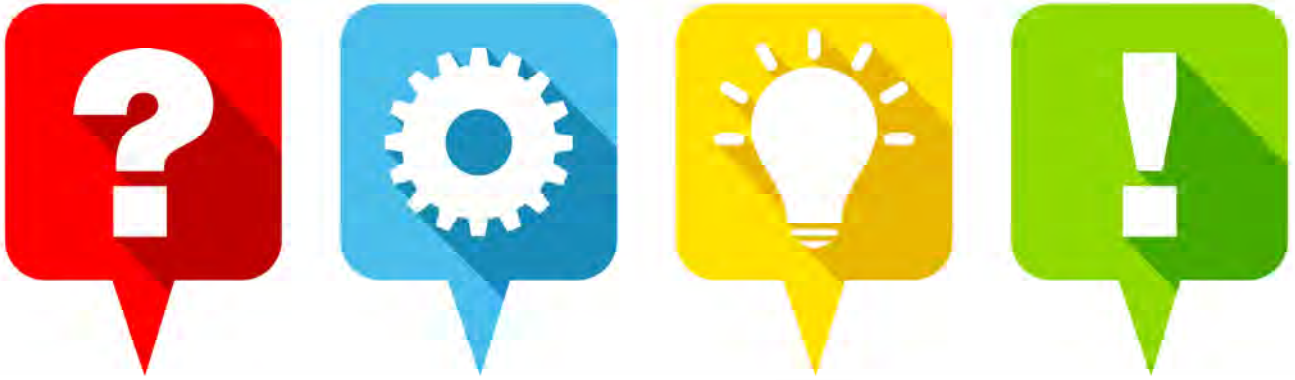
## Literature

### Inspiration for the development of the Skills-Quest:

Sheldon, L. (2011). *Multiplayer Classroom: Designing Coursework as a Game*. Boston, MA: Course Technology. https://doi.org/10.1201/9780429285035

❝ Good morning. Welcome to the first class of the semester. Everyone in this class is going to receive an F. (Sheldon, 2011, S. 3 )

### Study on effects of gamification in teaching:

Hanus, M. D., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & Education*, *80*, 152–161. http://dx.doi.org/10.1016/j.compedu.2014.08.019

❝ As education continues on a trend of incorporating digital technology into the classroom, it becomes easier to incorporate game elements in the hopes of making the material more engaging. Using certain elements of gamification could be very effective, but our findings indicate that educators should be wary of using rewards, badges, and leaderboards as they may backfire. (Hanus & Fox, 2015, S. 160)

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