ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/345867682

“Where did you learn to fight?” Gamification of an online fighting class for students at German Sport University Cologne

Preprint · November 2020

CITATIONS
0

READS
55

2 authors:

Swen Koerner
Deutsche Sporthochschule Köln
135 PUBLICATIONS **280** CITATIONS
SEE PROFILE

Mario S. Staller
Hochschule für Polizei und öffentliche Verwaltung Nordrhein-Westfalen
117 PUBLICATIONS **306** CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Gamification View project

Ego Depletion and the Capacity for Empathy of Crisis Negotiators: Exploring Self-Regulatory Resource Depletion, Awareness, and Enhancement View project

All content following this page was uploaded by Swen Koerner on 14 November 2020.

The user has requested enhancement of the downloaded file.

“Where did you learn to fight?” Gamification of an online fighting class for students at German Sport University Cologne

6th International Conference on Cyber Security and Privacy in Communication Networks (ICCS) 2020
28-29 December 2020
Indian Institute of Technology, Patna

Panel: Game! Crime?

Authors
Swen Koerner, Mario S. Staller

Swen Koerner (corresponding author)
German Sports University, Department of Training Pedagogy and Martial Research
koerner@dshs-koeln.de

ORCID ID: 0000-0002-1938-082X

Mario S. Staller University of Applied Sciences of Police and Public Administration North Rhine-Westphalia, Department of Police
mario.staller@hspv.nrw.de
ORCID ID: 0000-0002-8608-9098

Abstract

The spread of SARS-CoV-2 in Germany and the general restrictions on social contacts decided upon pose major challenges for institutional teaching and learning settings (Koerner & Staller, 2020a). For the German Sport University Cologne (GSU), one of the world's most renowned sport universities, due to the officially ordered shift from presence to online courses innovative and adapted solutions were in need, especially where the teaching and learning of motor and tactical skills had to be arranged. In this situation, especially for students of the GSU “self-defence” course of the summer semester 2020 the question aroused, “where do we learn to fight?”.

The paper presents the conceptual framework of a regular university Krav Maga based self-defence course – “train2fight the virus” – developed specifically for this challenge, in which elements of gamification (Schell, 2017) play a driving role. Particularly, the story envisaged that besides weekly team challenges in the areas of “fitness”, “growth”, “fighting”, “solidarity” and “knowledge” students had to prepare for a strenuous fight against an unknown and highly skilled end-boss via live online trainings.

1 Introduction

The spread of SARS-CoV-2 in Germany and the general restrictions on social contacts decided upon pose major challenges for institutional teaching and learning settings (Koerner & Staller, 2020a). In March 2020, a collective helplessness quickly spread among many lecturers at the German Sport University Cologne (GSU), one of the world's most renowned sport universities, as a result of the ban on face-to-face teaching. While online based solutions were already in place for theoretical courses primary dealing with cognitive content, for the online teaching of practice-oriented sports and movement skills using electronic devices neither experience nor orientation was available.

In order for the practical online teaching to take place under conditions of COVID-19 innovative and adapted solutions were in need, which at the same time at least principally meet the demands of the respective university curriculum. In the case of GSUs` regular self-defence module PE 2.35, this meant that students had to be enabled to "understand and practically apply basic principles of self-defence" (GSU, 2020) by means of online teaching. The paper presents the conceptual framework of GSUs` “self-defence” course developed specifically for this challenge, in which elements of gamification (Schell, 2017) play a driving role.

First, we start by addressing the special challenge of teaching practice content in self-defence (2), followed by the idea of taking the pandemic as a development opportunity for both, the teacher and the students (3). Framed and informed by key elements of modern gamification (4), the concept of “train2fight the virus” is presented,

representing an online self-defence class, which has been awarded with GSU´s e-learning prize in 2020 (5). With regards to the pending systematic analysis of student's views, we conclude by referring to related issues and questions of outcome according to recent literature on gamification. In sum, the article provides a conceptual proposal for a gamified design and delivery of online practice-based university courses adjusted to the contemporary requirements of physical distancing.

2 Level one – Challenge

The spread of SARS-CoV-2 in Germany and the resulting measures of physical distancing (BR, 16.3.2020) still impact many areas of society, not at least the teaching at schools and universities. For the German Sport University Cologne (GSU) with its wide range of practice-oriented courses the ongoing corona pandemic addresses major challenges.

On the part of the university management for the field of practical fighting any form of face-to-face teaching for the summer semester 2020 was prohibited, including the self-defence course taught by the first author SK, which is an integral part of his teaching load and is anchored as PE 2.35 in many of GSU´s students degree programmes. At the same time, with the availability of WebEx, the universities` digital infrastructure met the technical requirements for online teaching in principle. But how should *practice-oriented* online teaching be delivered? Actually, nobody could answer this question reliably, simply because nobody had experience.

As if the notion of online teaching at universities using electronic devices and/or the use of asynchronous media formats (YouTube, Vimeo etc.) is still not unusual enough (Martin et al., 2019), many practical areas lacked ideas about what online-based teaching specifically could look like. Even if the lecturer can acoustically and optically interact with the students through microphone and camera, the teaching and learning of practical self-defence skills does not seem to fit into the realm of virtual learning due to its bodily foundation. Fighting essentially relies on processes of interpersonal synergy (Krabben et al., 2019) established through the dense interaction of human bodies.

In addition to the university's digital infrastructure, the collective teaching culture as well as demands established by the practice content itself the corona pandemic finally poses a major challenge to the lecturer. Similar to sports coaching (Muir et al., 2011) and police training (Staller, 2020), university teaching can be identified as a context of professional work, in which the practice is not only about the question of *what* to teach *how* to *whom*. As the corona pandemic impressively demonstrates, professional university teaching heavily depends on *contextual* factors as it is true for the sports (Staller & Koerner, 2020a) and police domain (Koerner & Staller, 2020a).

The pandemic altered key constraints of social live in general and has led to the mandatory limiting of physical proximity between citizens and therefore between learners and teachers. It's more than likely, that these contextual changes have impacted accustomed routines of design and delivery of many university teachers. As experienced by SK, being the head of the university department responsible for the teaching of martial arts and combat sports at GSU, this was definitely the case among many colleagues.

Corona and the associated measures of physical distancing may have irritated quite a few existing beliefs, values and attitudes for teachers and students on how to teach and learn martial arts and related practice-based movement and sports skills (Andreucci, 2020). The unfamiliar situation caused by the global pandemic has indicated, that teaching involves not solely questions of what to teach to whom in which way under which conditions, but foremost depends on the individual teacher´s mindset. Corona scratches on the underlying assumptions that guide one's actions in relation to teaching self-defence, ranging from that "nothing can be done" to the straight opposite.

3 Level two – idea

In this situation the idea arose to take Corona as a challenge of an opportunity for the exploration of new ways of teaching self-defence to students at GSU through the means of e-learning. As time between the announcement of the national lockdown and the start of the summer semester was scarce, there was a strong need for ideas

especially in sports practice. At this time many students and teachers experienced in private amateur sports, competitive sports or at school what it feels like when training suddenly comes to a stop: no more instructed training, no more sports lessons.

The reference point for the planning and design of PE 2.35 on self-defence was not how the course would "normally" be run and how self-defence is or should “normally” been taught. The point of reference was the crisis itself, which excludes many of the usual pedagogical routines: "Imagine another lockdown in the future: As a learner, athlete or student - would you be happy about your club and trainers providing alternative ways of practice? As a trainer – who would you like to be then? The one who does something for your learners or the one who buries his or her head in the sand?" The students haven been asked these questions addressing their personal mindset at the beginning of the semester. The same questions were answered by the authors in advance (Staller & Körner, 2020; Koerner & Staller, 2020), resulting into a conceptual framework that was adapted to the Krav Maga course.

Questions of "normal" teaching make sense under “normal” conditions, whereas under corona conditions innovative solutions are needed (Demantowsky, 2020; Hanstein & Lanig, 2020), which at the same time at least principally meet the demands of professional teaching. These comprise of the balance of student´s expectations and needs (who-dimension, e.g. that the course takes place in a motivational manner) and the demands of the respective university curriculum (*what-dimension*). Concerning PE 2.35 the module description states, that during the semester students have to be enabled to "understand and practically apply basic principles of self-defence" (GSU, 2020). Against this background, the framework of gamification has been identified as a promising pedagogical approach for the conceptual design and delivery of GSU´s fighting class.

4 Level three – concept

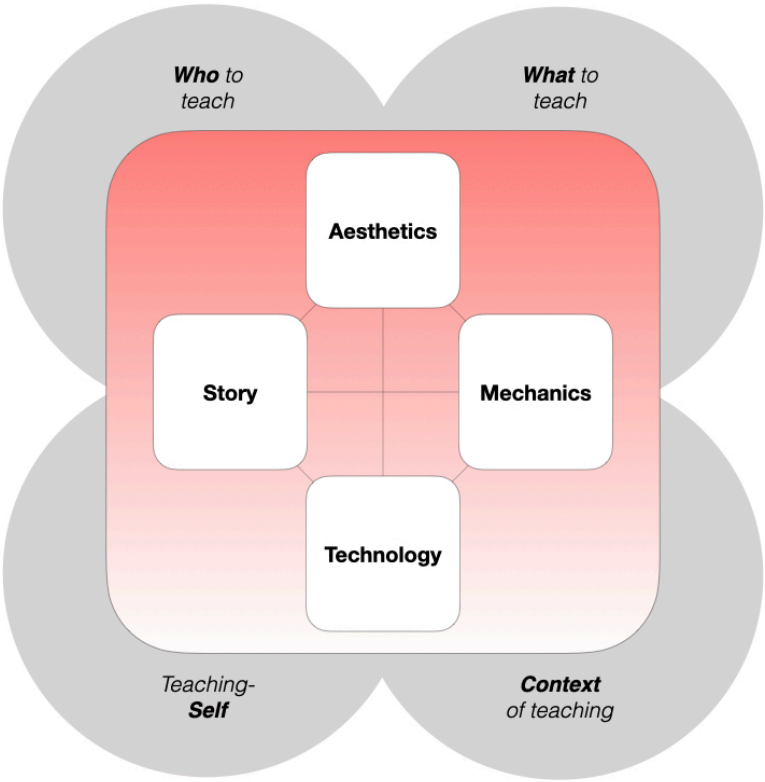
While interesting academic debates on the question of what gamification is or is not do exist (Boendermaker, 2017; Fatta et al., 2019; Huotari & Hamari, 2017; Seaborn & Fels, 2015; Yohannis et al., 2014), the conceptualization of PE 2.35 followed a straight

hands-on approach. According to widely used definitions, the gamification of GSU´s mandatory self-defence course required a) “the use of game design elements in non-game contexts” (Deterding et al., 2011) guided by b) a clear pedagogical intention, i.e. “to engage people, motivate action, promote learning and solve problems“ (Kapp, 2012). In short, gamification was used to support GSU´s students online learning of genuine movement-based self-defence skills in times of Corona.

More specifically, for the process of detailed planning and reflection of design and delivery of a gamified Krav Maga e-learning course, Schell’s (Schell, 2017) element tetrad of game design has been applied. The tetrad contains the following elements (see figure 1):

a) *Story*, defined as the narrative structure of the game / gamified context, including plots and characters involved, among others reinforced by
b) *Aesthetics*, including elements perceptible to the human senses, affording participants perception and action, resembling characters and narratives of the story.
c) *Mechanics* as the very core component of a game / gamified context, comprising demanding tasks and the set of rules, guiding and affording the players / learners task completion, linking them to the respective goal and providing immediate feedback on players / learner’s decisions and actions.
d) *Technology* as the hardware and infrastructure of the game, in a broadest sense comprising all technical prerequisites and means that enable the game / gamified context to be set in place and played smoothly.

Figure 1: Elements and dimensions of gamification (Staller & Koerner, 2021)



Within the planning and reflection of a gamified e-learning environment each element of the tetrad requires single attention by the designer / teacher. It is important to note that all of them are interconnected, effect each other and have to be designed in a strong interactional relationship. For instance, elements of aesthetics have to take up and thematically stage the story, immediate feedback (*mechanics*) for results has to be made perceivable (*aesthetics*), and technological infrastructure has to be set according to the goals of the game / gamified learning environment, and so on. As the tetrad provides a conceptual framework for the design and delivery and therefore provides valuable solutions for the how-dimension of teaching, it is in turn deeply connected to the what- (*what to teach*), who- (*who to teach*), self- (*the teaching self*) and the contextual dimension mentioned before (see 2; figure 1). Next, we present how it has been adapted to the specific context of GSU`s PE 2.35 self-defence course and the challenge of online teaching.

5 Level four – application

Due to the daily topicality of Corona, the overall social situation in Germany during lockdown as well as the serious impact of the pandemic on various teaching and

learning contexts in sport, the crisis itself provided the explicit point of departure for PE 2.35. At the beginning of the first online session using WebEx (WebEx training, Cisco) a fake headline from a fake daily newspaper ("The Gotham Times") has been presented to the students. The headline stated: "Krav Maga Classes cancelled - Clubs and Universities without concept". Triggered by the headline, which, although purely fictional, reflected the current status at GSU as well as individual experiences in many cases, an immediate discussion arose among the students. The discussion centred on what could be expected, what could be done from a learning and teaching perspective in times of Corona. At this point SK left it up to them to decide how to proceed.

As one and officially recommended option, a complete conversion of the course to the asynchronous provision of purely theoretical content has been offered. In this case the material would have been uploaded to the GSU e-learning platform. As part of this option, practical units would have been postponed until a possible end of the lockout. The alternative was to meet in WebEx on a weekly basis at course time. In this case, theoretical aspects as well as the joint training of practical self-defence skills would be the subject matter. The majority of the students voted for the latter. Thus, the way for the prepared gamified concept was paved, which was introduced next starting with the overarching narrative of the story: "Welcome, we are *train2fight the virus!* Corona is a challenging task for all of us. We are neither virologists nor politicians, but we will fight the pandemic with our strengths and means. Week after week you will receive challenges that you will work on as a team. Besides the team-work, a strenuous challenge is waiting for each of you: You will have to face a highly skilled end-boss, who already started his combat training. Your only option is to win this fight. You´d better prepare…"

The exposure of the *story* around the "fight against the virus" marks the beginning of something totally different to a normal self-defence course at GSU. PE 2.35 had just turned into a gamified learning environment and students became players. And, being typical for a gamified context, the *story* had been condensed in the *title* train2fight the virus! and had been visualized in a logo (*aesthetics*) of the same name (see figure 2). Title and logo clearly articulated the prospect of an ongoing series of missions the

students had to face on a course-, team- and individual level (*mechanics*). Through the announcement of an end-boss, whose level of ability has been demonstrated by showing a short training clip (*aesthetics*; *technology*), the student's motivation for practice had been awakened at an early stage and a (first) indirect impulse to confront one's own identity was given by facing a tangible opponent *character*.

Figure 2: Logo-Design for PE 2.35

In order to further stimulate the dynamic of the online-learning environment, its *mechanic* comprised weekly challenges within the areas of "fitness", "growth", "fight", "solidarity" and "knowledge", which had to be mastered on a team-level, with each team consisting of four randomly assigned students. The selection of areas and individual content was guided by GSU´s curriculum for PE 2.35, e.g., containing self-defence skills and related knowledge ("fight", "knowledge"), generally meaningful areas of learning for sport students ("growth", "knowledge", "fitness") as well as context-related aspects to the Corona pandemic feeding the cluster of "solidarity". For example, in week three the teams (and always each of its member) had to jump rope ("fitness"), to fight against invisible opponents ("fight"), to learn something they couldn´t do yet, e.g., juggling ("growth"), to support elder people with the completion of tasks in everyday life ("solidarity") and to carefully listen to a media interview, where SK explains the specialities of Batman's contemporary fighting style ("knowledge").

To allow for student's autonomy in decision-making, with regards to weekly task accomplishment teams could choose either to be "Virus Fighter", "Virus Hero" or

“Virus Dominator”, with each level differing in effort, difficulty and the expected reward. For example, a team that chose for each member to jump-rope on two days a week for 60 seconds twice reached the level of “Virus Fighter” and was awarded 15 points. Doing the exercise on two more days meant to be “Virus Hero” with 20 points on the score. Finally, to jump-rope on six days a week accomplished the Dominator-Level and resulted in 25 points. At the end of the semester the team that scores the most points won.

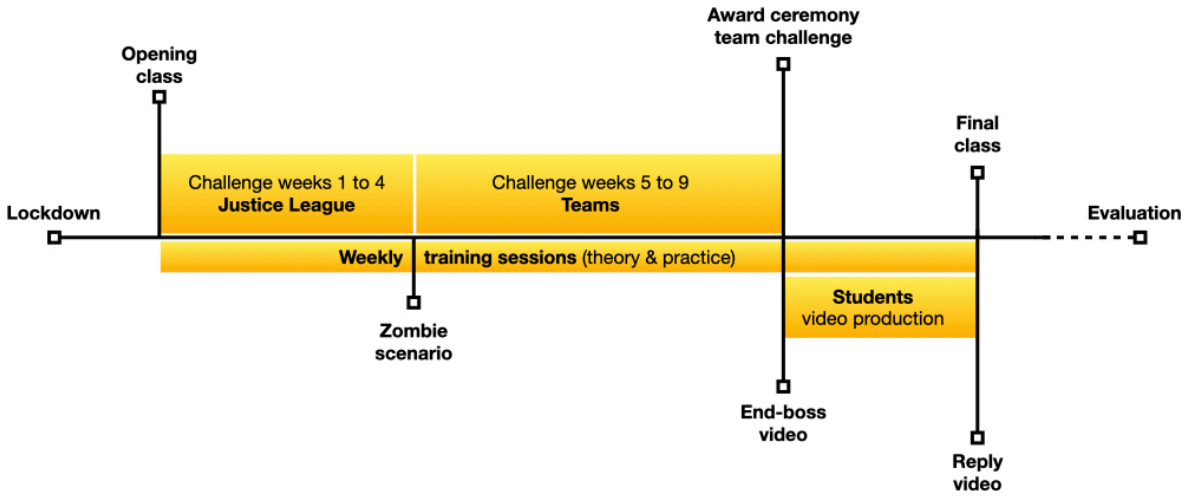
Teams were encouraged to consider their decisions carefully, since selecting a level had obliged them to complete all challenge areas in that level. For example, a team that decided to jump rope on six days, had also to help elderly people on six days, to practice juggling on six days and fought invisible intruders on six days. Finally, to become "Virus Dominator" they had to produce an audio Bat-Cast (“knowledge”) on Batman’s fighting style, while Virus Fighter, on the other hand, would only have to answer an online quiz (*technology*) on the related media interview. The *mechanic* of weekly challenges in relevant areas of student´s live together with the choice of different degrees of difficulty and effort resulting in different rewards, has been a key feature of gamifying PE 2.35.

During the first few weeks, the challenges were conceived by SK and presented at the end of each session in the form of a specially produced YouTube video. The use of video *technology* and internet-based ways of distribution goes along with several advantages. First, they allowed for multiple channels to explain the tasks to be done, e.g., by visualizing (*aesthetics*) how a fight against invisible intruders (a metaphor for corona and thereby part of the story) could look like. Second, using YouTube made the information accessible to all teams and members anytime and anywhere. Third, the challenge videos allowed for a further identification with the overarching *story*, since the videos addressed the “train2fight the virus” challenges and contained the game logo as well as the logo of the Justice League (*aesthetics*), as whose member SK had introduced himself in the opening session.

The respective weekly achievement was checked off by the teams in a specially designed (containing logo, *aesthetics*) challenge sheet (*technology*) and sent to SK.

Points and ranking were presented in a table (*aesthetics; technology*) so that the teams could observe their current status and reflect their own development (possibilities) in the mirror of the others (*mechanics*). Consistent to SK´s character as a member of the Justice League, for the second session all teams were requested to create a signature name and logo suitable to the strengths and characteristics of their group, for which each of them was rewarded additional 25 points. "KravMagicians", "Shadow Warriors" and "Buffers" were now part of the game, together with "Quarantinos Unstoppable" and "SpoHomefighters" which made reference to the virus theme. From the fifth week of the semester onwards the teams took over the challenge part (see figure 3). Week after week one of the teams developed the challenges for the other teams and made them available via challenge sheet and video. By doing so, the students switched their role within the “game” and *turned into learning designers* responsible for the creation of demanding and motivating tasks and feedback.

Figure 3: Timeline of PE 2.35



In addition to the weekly challenges, designed for asynchronous processing, a

synchronic training took place every session of the week (see figure 3). Within these units at regular course time the participants were trained in Krav Maga based self-defence by SK, using the WebEx video function. In preparation of the fight against the fearsome end-boss (*story*), participants were taught "important" techniques. Instead of the usual material used for self-defence training, for example towels and pillows were used as punching pads and chairs or door frames became "opponents", where the students have learned to fight safely, i.e., without or with light contact on the surface.

Due to WebEx` video function (*technology*), a high amount of interactive teaching and fighting was allowed. For instance, the students were regularly asked to punch or kick against a target (a pillow or towel) held by SK. The task was to immediate stop attacking as soon as they see SK falling on the ground (*mechanics*), representing the end of a violent encounter. Due to the gallery-view SK was able to observe who stopped and who didn't and to provide immediate feedback ("Hey Mike, that would not have been self-defence anymore…"). Similarly, student's reaction to a straight punch attack could be observed and, according to the perceived individual action be physically answered or commented ("Good defence, Lucy. But what about that…?"). All principles and techniques treated week after week were listed and illustrated in an Excel spreadsheet (*technology*).

In order to prepare the students for their decisive fight challenge, regular training sessions altered with live scenarios. For instance, the fourth session consist of a zombie scenario, introduced by the thematic keynote slide and soundtrack based on the series "The Walking Dead" (*story; aesthetic*). The story (as a story within the overarching story) envisaged that SK had disappeared, while the students woke up in front of their cameras on the 8th floor of a hospital and had to fight their way out. On each level of the building, they were attacked by changing opponents (all played by with masks and further requisites by SK).

In the subsequent theory unit of the 4th week, the students were given the key to understanding that and why fighting works online via camera interaction even without contact (and thus online practical teaching of self-defence can work): In the sense of

"ecological dynamics" (Koerner & Staller, 2020b; Seifert & Davids, 2016), motor performance is dependent on the continuous co-regulation of perception and movement. Students were asked to situations they had just experienced within the scenario, e.g.: "When the zombie at the camera just came towards you and wanted to choke you, what did you do? Then came answers such as "I dodged," "I ducked," "I punched," etc. These are exactly the same competences that also build the focus of a regular PE 2.35 course at GSU. The only difference: no direct physical contact.

After each training, different aspects of self-defence and human movement organisation (e.g., history of Krav Maga, prevalence of violence, legal aspects of self-defence, motor creativity, etc.) were discussed and reflected on the events just experienced. Week after week the Justice League had prepared a related keynote of about 20 minutes, which always contained a work assignment, which was first discussed in breakout sessions in the team and then together on course level. The keynote design included occasional references to DC`s superhero Batman (e.g., the weekly ranking slide with the Batcave in the background), reinforcing the story-based game character of the learning environment (*aesthetics*).

The meaning of the Batman references as part of *a story within the story*, was finally revealed to the students through the end-boss video presented in the last third of the semester and uploaded on YouTube (*technology*). The video was produced from the first-person perspective of the students and picked up different tasks, situations and characters from past online teachings (e.g., zombies) and culminates in a one-minute final fight against Batman (played by SK in a Batman suit; *aesthetics*). In a significant phase of the fight, when Batman becomes aware of what the students are capable of (depicted by Batman, who repeatedly suffers invisible attacks, stumbling and falling on the ground) he poses the striking question: *Where did you learn to fight?* The recognition resonating in the question refers to the initial issue of the course - how to teach and learn self-defence at GSU in times of Corona – and thus providing an answer.

Every single student had the task to choreograph an answer fight from what he or she had learned during the online-course and to shoot it within three weeks with not more

than 60 seconds length (*mechanics*). The actions and reactions had to match the actions and reactions shown in the reference video (e.g., situationally appropriate kicking at the right distance with functional dynamics). The evaluation criteria (balance, appropriateness, distance, dynamic, variability) were dealt with in each session as part of the practical unit and were except of few concessions the same as in presence course of PE 2.35. In the end, the “Shadow Warriors” won the team challenge, with all teams scoring high. To some extend the students videos showed excellent fighting performances. In quite a few cases the *story* has been taken up and students appeared in the character of known opponents (e.g., by using *aesthetics* of the "Joker" figure).

6 Conclusion

The Corona pandemic generally addresses a major challenge for university teaching and learning at the moment. This especially has been true for the past mandatory self-defence course PE 2.35 at GSU, centrally dealing with the delivery of practical skills. Acknowledging the context-specificity of gamification (Hamari et al., 2014) the application of design elements of games appeared as a worthwhile and suitable way for GSU´s Krav Maga based self-defence course. The design of “train2fight the virus” as an online class on self-defence emerged out of the very special constraints of current physical distancing and the sanction of teaching in presence.

From our subjective perspective the gamified online-teaching (*how-dimension*) consisting of weekly team challenges and the preparation for a strenuous fight against an end-boss on the individual level succeeded in connecting student’s needs (*who-dimension*) and curricular demands of PE 2.35 (*what-dimension*) within the conditions, the context of the SARS-CoV-2 pandemic prescribed (*context-dimension*).

Teaching self-defence online, shaped and guided by the element tetrad of game design (Schell, 2017) also offered a valuable opportunity for the re-development of teaching expertise (Staller & Koerner, 2020b). Importantly, the development of expertise in a so far unfamiliar teaching setting has not only been experienced by SK (*self-dimension*) but also by the students. During the course they took over the

responsibility for the creation of motivating and demanding challenges for the others. Last not least, by addressing the challenge of “Solidarity” in times of Corona, which is no explicit issue within the university curriculum, a further stimulus for the reflection on action on the individual level (*self-dimension*) has been set.

The students view on PE 2.35 have been collected using a SoSci-Survey but have not been systematically evaluated yet. However, “train2fight the virus” has been nominated from among the students for the universities’ teaching award. Finally, an independent jury rewarded “train2fight the virus” with GSU´s teaching prize in the autumn of 2020. In addition to this recognition, we hope that the analysis of the survey data will provide further insights on the effects of gamified online training from a participant’s perspective. Has gamification been motivating, and if so, to which elements of game design motivation is attached? Or were there exceptions? Did participants mentally drop out of the game and still give the course a good rating? Did the students learn what they should and wanted to learn despite of the online handicap, or did the format counteract (some of) the goals and wishes? Within the next level of our "train2fight the virus" experience, answers to these and other questions are to be discussed in relation to current research (Walther, 2003; Rigby & Ryan, 2011; Rogers, 2017; Whitton & Langan, 2018).

7 References

Andreucci, C. A. (2020). Gyms and Martial Arts School after COVID-19: When to Come Back to Train? *Advances in Physical Education*, *10*(2), 114–120. https://doi.org/10.4236/ape.2020.102011

Boendermaker, W. J. (2017). *Seroius Gamification*. Motivating adolescents to do cognitive training. Ridderprint.

BR (Bundesregierung) (26.03.202020). Vereinbarung zwischen der Bundesregierung und den Regierungschefinnen und Regierungschefs der Bundesländer angesichts der Corona-Epidemie in Deutschland [Agreement between the Federal Government and the Heads of Government of the Federal States in view of the corona epidemic in Germany]

Demantowsky, M. (2020). Teaching between Pre- and Post-Corona. An Essay (2). *Public History Weekly*, *2020*(4). https://doi.org/10.1515/phw-2020-16838

Fatta, H., Maksom, Z., & Zakaria, M. H. (2019). Game-based Learning and Gamification: Searching for Definitions. *International Journal of Simulation: Systems, Science & Technology*. https://doi.org/10.5013/ijssst.a.19.06.41

GSU (German Sport University) (2020). Module Handbook PE 2.35 „Martial Arts, Combat Sports and Self-Defence“. DSHS Köln.

Hamari, J., Koivisto, J., & Sarsa, H. (2014). *Does Gamification Work? - A Literature Review of Empirical Studies on Gamification*. 3025–3034. https://doi.org/10.1109/hicss.2014.377

Hanstein, T., & Lanig, A. K. (2020). *Digital lehren*. 25–34. https://doi.org/10.5771/9783828875647-25

Huotari, K., & Hamari, J. (2017). A definition for gamification: anchoring gamification in the service marketing literature. *Electronic Markets*, *27*(1), 21–31. https://doi.org/10.1007/s12525-015-0212-z

Koerner, S. & Staller, M. S. (accepted, 2020a). Coaching self-defense under COVID-19: Challenges and solutions in the police and civilian domain. *Security Journal*, xx-xx.

Koerner, S., & Staller, M. S. (2020b). Police training revisited – Meeting the demands of conflict training in police with an alternative pedagogical approach. *Policing: A Journal of Policy and Practice*.

Krabben, K., Orth, D., & Kamp, J. van der. (2019). Combat as an Interpersonal Synergy: An Ecological Dynamics Approach to Combat Sports. *Sports Medicine*, *49*(12), 1825–1836. https://doi.org/10.1007/s40279-019-01173-y

Martin, F., Wang, C., Jokiaho, A., May, B., & Grübmeyer, S. (2019). Examining Faculty Readiness to Teach Online: A Comparison of US and German Educators. *European Journal of Open, Distance and E-Learning*, *22*(1), 53–69. https://doi.org/10.2478/eurodl-2019-0004

Muir, M., Morgan, G., Abraham, A., & Morley, D. (2011). Developmentally Appropriate Approaches to Coaching Children. In I. Stafford (Ed.), *Coaching Children in Sport* (pp. 17–37). Routledge.

Rigby, S., & Ryan, R. M. (2011). *Glued to Games: How Video Games Draw Us In and Hold Us Spellbound*. Praeger.

Rogers, R. (2017). The motivational pull of video game feedback, rules, and social interaction: Another self-determination theory approach. *Computers in Human Behavior*, *73*. https://doi.org/10.1016/j.chb.2017.03.048

Schell, J. (2017). *The art of game design*. Morgan Kaufmann.

Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of Human-Computer Studies*, *74*, 14–31. https://doi.org/10.1016/j.ijhcs.2014.09.006

Seifert, L., & Davids, K. (2016). *Ecological Dynamics: a theoretical framework for understanding sport performance, physical education and physical activity*. 1–13. https://hal.archives-ouvertes.fr/hal-01291044/document

Staller, M. S. (2020). *Optimizing Coaching in Police Training*. Doctoral Thesis. Leeds Becket University.

Staller, M. S., & Körner, S. (2020a). Kampfsport Coaching in Corona Krisenzeiten - Herausforderungen, Möglichkeiten und Grenzen [Martial Arts Coaching during the corona crisis. Challenges, possibilities and limits]. *Leistungssport 50*(4), 13-16.

Staller, M. S., & Körner, S. (2020b). Regression, Progression and Renewal: The Continuous Redevelopment of Expertise in Police Use of Force Coaching. *European Journal of Security Research*. https://doi.org/10.1007/s41125-020-00069-7

Staller, M. S., & Körner, S. (accepted, 2021). Game on! - Spielen in der polizeilichen Lehre [Game on! – Gaming in police teaching]. *Lehre.Lernen. Digital*, accepted for puplication.

Walther, B. K. (2003). Playing and Gaming: Reflections and Classifications. *Game Studies*, *3*(1).

Whitton, N., & Langan, M. (2018). Fun and games in higher education: an analysis of UK student perspectives. *Teaching in Higher Education*, *24*(8), 1–14. https://doi.org/10.1080/13562517.2018.1541885

Yohannis, A. R., Prabowo, Y. D., & Waworuntu, A. (2014). Defining Gamification. *2014 International Conference on Information Technology Systems and Innovation (ICITSI)*, 284–289. https://doi.org/10.1109/icitsi.2014.7048279

View publication stats