Digital Transformation of Traditional Sport: Examining Gamification and Motivations of Participation in Indoor Virtual Cycling

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**Management - Other (Physical Activity)**  
**Poster**  
**Session: Poster Session 2**  
**Abstract 2021-128**  
**Mode: Synchronous**  
**Friday June 4, 2021, 2:05 PM - 3:05 PM**

Technological innovations have enhanced the experience of cycling. Motion Based Video Games (MBVG) use software to create a virtual environment in which physical body movements control an on-screen avatar (Jenny et. al., 2017). That is, technological innovations have brought about game-like qualities to a fairly mundane act of indoor cycling. Using various digital technologies, cyclists can collect information, compute virtual routes and workouts, and communicate with others over the internet via an MBVG. Technologies such as these have drawn some recreational cyclists into a new competitive realm and have also improved engagement in physical activity at increased levels of intensity, frequency, and duration (Barratt, 2016). Indeed, the sport of cycling appears to be amid a digital transformation through gamification.

Finding ways to gamify mundane activities is important in motivating people to engage in physical activity and alter their exercise experience. Gamification is the “intentional use of game elements for a gameful experience of non-game tasks and contexts” (Seaborn & Fels, 2014, p. 17). Game elements like points, badges, leaderboards, performance graphs, and avatars can become intrinsic motivators satisfying the need for competence, autonomy, and social relatedness (Sailer et. al., 2016). The gamified approach encourages behavior changes in areas such as participation, performance, and compliance (Seaborn & Fels, 2014). Furthermore, participants can maintain social connections through competition and game collaborations (Gonzalez-Gonzalez et. al., 2018), thereby increasing enjoyment for participants (Tu, Hsieh, Feng, 2018). Additionally, social support through gamified exercise experiences may increase participant motivation and support wellness (James et al., 2019). Thus, gamifying mundane activities may answer calls to foster pleasant exercise experiences to develop “positive automatic affective valuations of exercise” (Brand & Cheval, 2019, p. 3).

Therefore, the aim of this research was to understand how gamifying an exercise experience may impact motivations. Specifically, we examined how the gamification of indoor cycling altered engagement levels. Semi-structured interviews were conducted with fifteen purposefully sampled cyclists of various skill levels that engage with a variety of technologies like Zwift, Rouvy, TrainerRoad, Peloton, Garmin Connect, and Strava. Data were analyzed in accordance with Gioia et al.’s (2012) recommendations, wherein we identified first order constructs, second-order themes, and aggregate theoretical dimensions within the data. Our findings suggest that cyclists engaged with virtual reality cycling through digital platforms such as Zwift (MBVG) more now than in the past. Whereas cyclists were motivated to lose weight and remain fit (traditional motivations), gamifying cycling provided additional motivating factors such as structured training, entertainment, social dynamics, and accountability. Further, cyclists indicated that they also enjoyed that they could participate in virtual cycling while in a safe and convenient environment. Our finding support the gamification theory which “argues that game elements can meet these goals by catering to the intrinsic values of end users: a user-centered approach, characterized by a focus on the needs and desires of end-users in the design of systems” (Seaborn & Fels, 2014, p. 28).