Chapter 90
Management Game:
Gamifying Leadership Learning

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ABSTRACT

Digital disruption and continuous productivity improvement require more from people management, thus raising the bar for leadership competencies. International studies indicate that leadership competence gaps are large and traditional leadership training methods does not seem to solve this problem. This article's findings supports this situation. The authors will open the complexity behind organizational productivity development and present game theoretical architecture that simulates management behavior effects to human performance. New methods enable practice-based learning that enables formatting leaders' behavior so that it will create long-term success with continuous change. The authors will present gamified leadership training procedure and discuss the practical learning experiences from a management simulation game. The authors' study reveals challenges at interactive leadership skills, thus, it is argued, that there seems to be problems at the leadership mind-set. Therefore, more sophisticated learning methods and tools should be used.

INTRODUCTION

Critical scientists say that science in connecting Human Resource Management to business performance is broken (e.g. Fleetwood & Hesketh, 2010; Ehrhart et al., 2014). It is argued that mechanisms how HR practices influence an organization's performance is theoretically vague, and there is little research on the relationship between HRM and performance (e.g. Guest, 2001; Becker & Huselid, 2006). In short,

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over-simplification and using statistical methods in analyzing complex human issues and human capital performance are causing problems (e.g. Kesti, Leinonen & Syväjärvi, 2016). With over-simplification, there are risks to narrowing variability, damage reliability and lessen HR-development effect to business performance. A fundamental mistake is to calculate staff inquiry results by using only statistical methods; instead, motivation and learning theories are more applicable (e.g. Cameron, 2012; Ruohotie, 1998). Motivation can be divided into external and internal (e.g. Deci & Ryan, 2000), and internal motivation is the force that makes human actively seek interesting and valued tasks and posts (Martela & Ryan, 2015).

Human resource management and especially change management is fundamentally behavioral science. Therefore, the game theory seems to be suitable in simulating management behavioral meaning to business performance and quality of working life (QWL). (Kesti et al., 2017.) Simulation is actual game where player implements leadership practices in solving workplace problems and improving team QWL. Management game theory is based on following main theories: 1) Human Capital Production Function (HCPF), 2) Quality of Working Life index, 3) Bayesian game theorem, and 4) Markov's sequential game algorithm. Furthermore, human performance is combination of all self-esteem factors which are Physical and emotional safety (PE), Collaboration and identity (CI) and Objectives and creativity (OC); therefore, single factor correlations are not reliable. New scientific method solves this problem – it is called the quality of working life index (QWL) (Kesti, 2018).

At HCPF the QWL is production parameter defining the effective working time share from the time for work. Effective working time is multiplied with human capital revenue factor, which defines the revenue for each effective working hour. Improving QWL-index makes it possible to increase effective working time, thus making more revenue and profit. QWL-index improvement needs effective utilization of leadership practices or human resource management practices (HR-practices). Management practices consume the working time and therefore reduce revenue and profit, therefore the practices have to be effective. Working teams are under continuous changes, which have tendency to cause workplace problems. Each problem reduces the QWL-index and therefore reduce revenue and profit. QWL-index is determined by the interaction of working team self-esteem factors, which are defined (measured) monthly at the simulation. Problems reduce some self-esteem factor and effective management practices improve some self-esteem factor. Management practice effect on QWL depends on the leader's expertise (skill test). Some management practices effect to QWL-index weakens when they are implemented too often or at wrong situations. In addition, when self-esteem factor increase they are harder to improve further. Therefore, the QWL has border-productivity phenomenon, which is characteristics of production parameters. Organization human capital development is rather complex because all the rules affect simultaneously.

Management simulation game is new method for fostering leadership competence. It has game architecture where the theories of Human Capital Production Function and QWL -index form simulation environment. At this simulation, the management behavior and workplace problems are included using Bayesian game theory. Simulation proceeds according Markov game sequences, which makes it possible to utilize artificial intelligence equations in finding best management actions. This way player can practice people management and learn the best practices to achieve long-term optimum where Nash-equilibrium where QWL and profit flourish.

This paper proceeds as follows. First, we describe how to analyze the quality of working life, and how it combines with human resource management. Then, the management simulation game architecture is presented, with practical leadership best practices. We will present gamified leadership training procedure and discuss some practical learning experiences from management simulation game. Our study reveals major challenges at interactive leadership skills, which we studied using best-practices