Decision-making and leadership skills of international master students -- experiences from a serious game

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Abstract: *In connection with his universal Flow theory, Mihály Csíkszentmihályi also identified 29 management skills which are needed to realize his "Good Business"-principles and values of leadership. In this paper, we focus on the four key skills that support decision-making and leadership supporting workplace Flow (strategic thinking, feedback, recognizing personal strengths, and the balance skill between challenges and abilities) based on the results of FLIGBY® ("Flow is Good Business For You"), a serious game developed to measure and develop Flow-promoting leadership skills. We examine the outcomes of hundreds of students in the CEMS, a global Master in Management program, highlighting the leadership skills on which they relied most on. Furthermore, we present those skills which can be best improved in replaying. This study also provides an example of how serious games can effectively analyze skill portfolios and develop leadership skills.*

Keywords: Flow, leadership skills, decision-making skills, CEMS students, serious game FLIGBY

1 Introduction

Which contemporary skills drive leadership success? Which skills enable motivation of staff so that they mobilize their inner, personal resources in such a

way that it contributes to the competitiveness of the company? The role of leadership in helping individuals to find meaning in their work is increasingly valued in organisations. Creativity and the ability to innovate, a supportive working environment, right leadership style are key to a competitive business. This is borne out by the practices of many successful companies known for their creativity (see for example Csíkszentmihályi, 2018). Competitiveness research has shown as well that there is a positive relationship between managerial skills and firms' competitiveness (Zoltayné Paprika, Wimmer&Szántó, 2007). So a good working atmosphere can be a pillar of corporate competitiveness. Managers have a significant influence on the workplace climate and on the motivation and well-being of their staff. In our investigation, we build on the experiences of a serious game for measuring and developing leadership skills, FLIGBY® ("Flow is Good Business For You"), which has been developed by Mihály Csíkszentmihályi and his colleagues in connection with the value-based "Good Business" approach - outlined in his third global bestselling book with the same title - , and analyze the leaderships skills of international master students.

2 Background

In this section, we briefly discuss the essentials of leadership skills that support Flow and the role of serious games in leadership development.

2.1 Flow-promoted leadership skills

Understanding the drivers of good business performance is a key element of business success. In the late 1990s, Mihály Csíkszentmihályi, one of the founders of positive psychology and the father of the Flow approach, explored the foundations of "good business" in a research project based on interviews with executives of successful companies, in collaboration with researchers from Harvard and Stanford Universities. According to his results, the three pillars of good business are (1) business excellence, measured by profit, (2) a workplace climate that supports the creativity of employees and (3) sustainability linked to the environmental and social embeddedness of the company (based on Csíkszentmihályi, 2003, Buzády et al., 2022).

A supportive, inspiring, and motivating workplace atmosphere can facilitate the experience of Flow for both employees and managers. The Flow experience (Csíkszentmihályi, 1990) refers to the subjective state that a person experiences when fully immersed in a challenging activity. It is characterized by a sense of concentration and control, which gives the individual a good feeling. It is a state of pleasure in which the individual can achieve fulfillment. Flow is the optimal mental state (Csíkszentmihályi, 1990), it increases psychological capital and is, therefore, a pillar of competitiveness. It requires clear goals, a balance between perceived

challenges and perceived skills, and immediate, direct feedback that signals to the individual when a change is needed (Csíkszentmihályi, Abuhamdeh & Nakamura, 2014). When skills are slightly above the complexity of the task, a sense of control can be enhanced, creating a state of relaxation, which can also be motivating and important for conserving energy. While challenges that exceed skills can move beyond a general state of arousal and excitement towards anxiety and worry, in a state of equilibrium, Flow allows for continuous improvement and is therefore motivating. (These mental states can also be depicted on a Flow map, which can be used to trace the path that the individual has taken, depending on the match between skills and perceived challenges – see for example Csíkszentmihályi, 1990; Buzády&Almeida, 2019, or our Figure 2 illustrated output of FlIGBY, a Flow-based serious game.)

Flow

Among the 29 leadership skills identified in the "good business" research, four play a key role in promoting Flow at the workplace: (1) strategic thinking, (2) ability to provide feedback, (3) balancing skill and (4) recognizing personal strengths. It is important to emphasize that different leadership skill portfolios can be effective, however, leaders cannot facilitate the Flow state of employees if they do not systematically build on these four skills (Buzády et al., 2022). Strategic thinking enables the formulation of clear goals and expectations for employees, thus giving meaning to action, which is a fundamental prerequisite for the Flow state. Through feedback and managerial feedback, employees can receive confirmation or even suggestions about their efforts, but in the absence of feedback, they may become discouraged, or move towards worry or boredom. Recognizing individual strengths ensures that managers consciously build on their own and their subordinates' individual skills and strengths. This can be a source of competitive advantage for the organization, as well as a motivator for staff if their abilities are recognized in their immediate environment. The ability to strike a balance means that the manager is able to allocate resources to specific situations in a way that matches the skills of staff with the challenges they face. This is a dynamic balancing act, as the situation changes from time to time, and the employee develops and learns. The manager helps to create a meaningful and dynamic balance between challenges, tasks and abilities that is meaningful for the employee (Buzády et al., 2022). In addition to the four key skills that form the basis of workplace Flow, others are needed to ensure a suitable environment, communication, a motivating atmosphere, decision-making and the proper implementation of tasks.

2.1 Serious games in leadership skills development

Serious games are characterized by the fact that they are devices with playful elements that can be used for serious, educational purposes. In the approach of Statler et al. (2011), serious game involves individuals deliberately and purposefully engaging in a playful, self-directed activity while striving to achieve a serious task with consequences. Decisions made during the game can be recorded and analysed separately later, and the possibility of replaying allows skill development and learning (Buzády, 2017). Gamification and the use of serious games is particularly effective in business and management education, where community and relationships, communication skills, project work, competition and problem-solving are important learning factors (Buzády&Almeida, 2019). Typically, it can be practiced gradually, even repeatedly, in a computer environment by solving novel tasks that are slightly more difficult than the user's level of preparation or expertise (Mettler & Pinot, 2000). In serious games, complex business situations can be learned by modeling real-life situations without significant financial input and risk, and the learning material is not captured in the process of reading and memorizing, but through the search for and interpretation of information and the engagement of the participants (Astleitner&Leutner, 2000).

Figure 1 illustrates the role of serious games in the world of education and games. In serious games, three main elements are present together: the transfer of theory, the playful elements, and the technical support (Buzády et al. 2019).

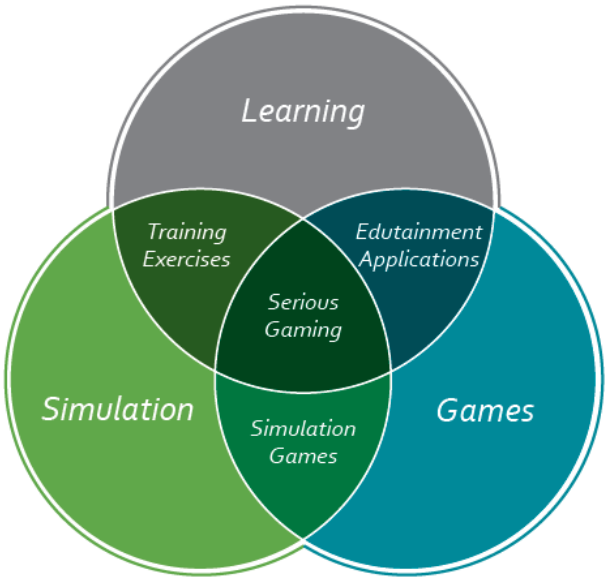

Figure 1
Serious games at the intersection of learning, games, and simulation
Source: Buzady et al. 2019.

Simulations present the real world in a significantly simplified but still meaningful way, allowing practice in safe conditions and based on clear rules (Buzády et al, 2019, p. 90). In simulation games, the use of simulation technology is explicitly aimed at the game experience. In learning, playfulness can support experiential learning. In serious games, all these elements are present together. The learning process is based on the direct experience of the participants, and the technical support also ensures replayability. Pérez-Pérez et al (2021) point out that the use of serious games is part of the toolbox of modern experiential pedagogy. Participants can acquire professional, communication, leadership and entrepreneurial skills through the processing of real-life situations in a simulated world. The serious game can be used to identify which skills participants rely on and which skills they underuse in their decision-making. This method provides a comparable, objective result within the given framework.

3 Research method's end results

FLIGBY® ("Flow is Good Business For You") is a video-based serious game which has been developed by Mihály Csíkszentmihályi and his colleagues between 2007 and 2012. It is based on a series of leadership decisions to measure, assess and develop leadership skills that underpin Flow.

As the acting manager of a fictional family winery in California, the player's task is to make decisions that will lead to the best winery award at the end of the financial year, based on a balanced assessment of several criteria. Players' decisions will be followed by a measurement of 29 skills identified by experts, which will be reported in detail to participants at the end of the game.

In FLIGBY, the player get detailed feedback on which skills he uses more and less intensively compared to other players. Since the story is replayable, it is also possible to improve the latter, even by consciously changing previous choices by paying attention to a particular skill.

The player makes individual decisions, experiences and progressively experiences leadership situations, receiving immediate feedback on positive or negative consequences of her decisions.

The Flow map in the game provides continuous feedback on the mental state of the characters in the simulation (see Figure 2.)

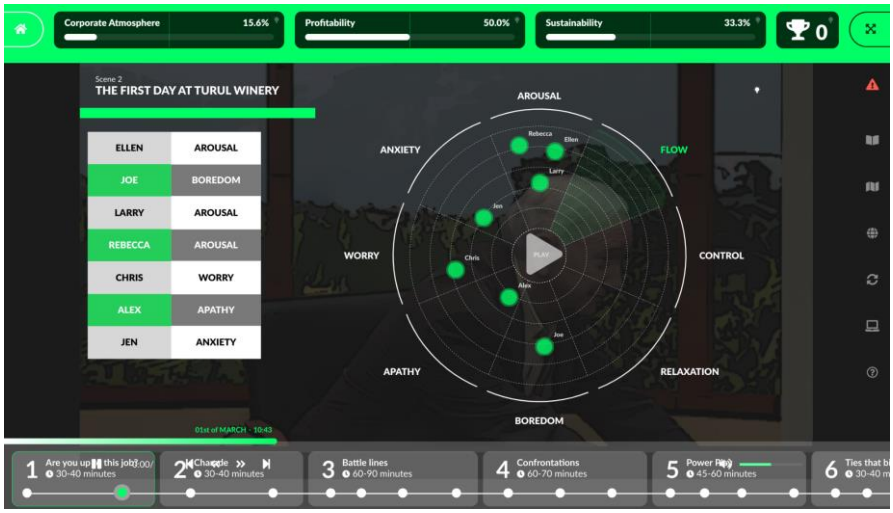

Figure 2
Workplace Flow map in FLIGBY
Source: FLIGBY serious game screenshot

Our examination is based on the results of FLIGBY games collected over several years. While providing an opportunity to measure and assess leadership skills, serious play also provides an opportunity to experience leadership Flow. The results of anonymous players also provide researchers with an excellent analytical platform and help to gain further insights into leadership skills and skill portfolios or their development.

In this paper, we examine the leadership skills of students on the global Masters in Management programenrolled on the Global Leadership and Decision-Making Skills course. CEMS (Community of European Management Schools (www.cems.org)) is a cooperation between the world's leading business schools and universities, multinational companies and social organisations, founded in 1988. The CEMS has 33 member schools, with 1300 students from 78 nationalities per academic year, and delivers the leading international Master's in International Management (MIM) that prepares responsible leaders to contribute to a more open, sustainable, and inclusive world.

We have examined the results of the FLIGBY game of 571 CEMS's students from around 30 countries (Hungarian, German, Chinese, Portuguese, Dutch, French, Belgian, Italian, Norwegian, Austrian, Czech and others) measured between 2017 and 2024.

The results of their first play are summarized in Figure 3.

The use of each skill is rated on a scale of 0-100% in FLIGBY. The skills that were most used by the players are emotional intelligence, the ability to gather information and to motivate, while time management, timely decision making, assertiveness and prioritizing are among the least used skills. We can also see that among the so-called Flow-promoting leadership skills, identified by Prof. Csikszentmihalyi, recognizing personal strengths and giving feedback are among the more used skills, while balancing and strategic thinking are in the middle, less relied upon by students.

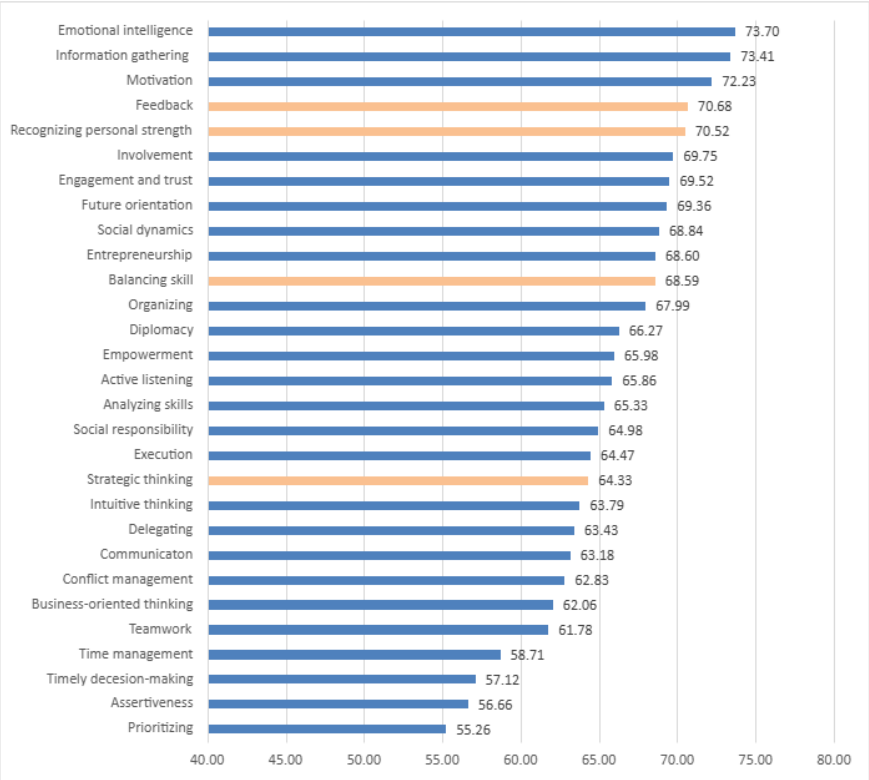

Figure 3

Using leadership skills from FLIGBY® games with CEMS students (2017-2024, N=571)

Compared to the results of the second game, it is worth highlighting those skills which show the largest increase in use up to +9. Social responsibility (+13,5), timely decision-making (+12,1), future orientation (+11,4), entrepreneurship (+10,7), strategic thinking (+10,0), recognizing personal strengths (+9,5), and feedback (+9,2).

Skills	1. game	2. game	Change
Decision-making skills			
Timely decision making	57,12	69,22	+ 12,10
Recognizing personal strengths	70,52	80,06	+ 9,55
Prioritizing	55,26	62,30	+ 7,03
Intuitive thinking	63,79	70,23	+ 6,44
Analytical skills	65,33	69,94	+ 4,61
Information gathering	73,41	73,16	- 0,25
Flow-promoting leadership skills			
Strategic thinking	64,33	74,31	+ 9,98
Recognizing personal strengths	70,52	80,06	+ 9,55
Feedback	70,68	79,92	+ 9,24
Balancing skill	68,59	76,13	+ 7,53

Table 1
Changes in the use of leadership skills in CEMS students during 2nd FLIGBY® games
(2017-2024, N=571)

Players showed the smallest increase in the second game in information gathering (-0.3), followed by diplomacy (+0.4), organizing (+1.4), teamwork (+3.0), motivation (+3.5), and time management (+3.5). This suggests that there are some types of skills that would require more time and exercise to be developed.

The Flow promoted leadership skills are among the skills that show the greatest growth in use (Table 1). During the second game, students more actively built on strategic thinking (64.33 vs 74.31), recognizing personal strength (70.52 vs 80.06), feedback (70.68 vs 79.92), and balancing skill (68.59 vs 76.13).

Concerning decision-making skills, the biggest increases were in timely decision-making (57.12 vs.69.22), and recognizing personal strength (70.52 vs. 80.06). In the middle were prioritizing (55.26 vs.62.3), intuitive thinking (63.79 vs.70.23), and analytical skills (65.33 vs. 69.94).

Conclusion

In our paper, we examined the leadership skills of master's students on the global CEMS program using FLIGBY, a serious game designed by Prof. Csíkszentmihályi

and his colleagues to measure and develop Flow-promoting leadership skills. The game supports the goals of leadership training and development by presenting the decisions in the story as real leadership dilemmas, in which it is not clear what is the right (or less wrong) decision. The player is challenged to promote a state of Flow for the game's co-workers as one of the game's goals, and in doing so, he or she can gain a leadership Flow experience. Since the game measures all players in the same decision situations, the results can be compared, the measured skills of the players. After an individual evaluation of the results, you can also support the development of skills less used in the player's leadership toolbox by replaying the game.

Reviewing our results, we conclude that this tool (FLIGBY®) is suitable for developing leadership skills and provides further opportunities for analyzing skill portfolios. Further research is needed to investigate which skills tend to develop more with increasing leadership experience, and which skills are easier or harder to be developed.

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