Enhancing students' engagement with a simulation game on change management

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Abstract

The famous quote from Friedrich Schiller states that an individual is only fully human when playing [1], Play encompasses a person holistically and if game-based learning is understood as a simulation of real life that must be mastered, the use of games in teaching is particularly effective which allow students to simulate real experiences. Hence, the University of Applied Sciences Burgenland introduced a business game on change management in the Master study degree program Human Resource Management. The game SysTeamsChange [2] is based on the three phases of change by Kurt Lewin [3] with the goal to lead 22 virtual employees of a table soccer company into the phase of integration. The game can be played either digitally or with a physical game set, but in both forms individual computerized feedback is provided on the single actions. Students play in small teams, acting as change agents. The game stimulates learning effects on two different levels. One level refers to the strategy of the actions, the other level triggers group dynamics and emotional reactions among the playing teams. In a debriefing phase, these processes on the two levels are reflected. Students discuss the transfer of the game to reality, the learning insights for change management and the group dynamics within the teams. Their feedback is regularly very positive and shows the successful implementation of the game.

Keywords: *student engagement, game-based learning, change management game*

1. Playing the game for enhancing students´ engagement

For enhancing curriculum development in the MA degree program Human Resource Management and meeting the needs of student motivation, immediate application of competencies and appropriate use of technology, the business game SysTeamsChange has been introduced since 2019. The decision for this game was made as "complex games (…) are, in fact, the `engaging educational system´", whereas "the traditional educational system is less and less engaging for our students" [4].

The game is designed in such a way that 22 employees of a table soccer company go through a change process on a playing field, whereby 42 actions can be carried out, for which a computer generates individual feedback, based on the previous action. This feedback must be considered by the teams for the next action. The teacher may give additional feedback and can also "undo" actions if the game of the respective team gets stuck. It is essential to give feedback on the strategies applied by the teams and not on the abilities that must be developed yet as "establishing classrooms and programs that emphasize strategy over ability is so important" [5].

Each team has 40 bits available per round as virtual play money to support an economical use of actions. The goal of the game is to move as many employees as possible into the seventh phase of integration by taking the appropriate actions in a cost-effective way. The playing teams are confronted with the strategic considerations of a change process as well as the emotional aspects of change. Hence, learning is highly authentic and takes place on both the cognitive-strategic and the emotional group-dynamics level. The teams are highly motivated to lead as many employees as possible into the final phase of integration. The "winner" is not the team that has led most of the employees into the integration phase but the one that has managed to do so in relation to the budget/bits spent. The following figure illustrates a score of 10 teams in terms of the average achieved position of all employees (position 22: integration), the issued bits and the successful actions:

Figure 2: Final results of 10 teams

Team	1	2	3	4	5	6	7	8	9	10
Position	8	7	10	6	10	16	14	12	16	13
Bits issued	111	112	97	127	147	118	109	99	140	91
Actions	37	41	37	49	50	42	36	30	55	36

It is very evident that team no. 9 has spent much more bits, needing more actions, than team no. 6 to reach position 16. The less successful teams were no. 5, reaching position 10 by spending 147 bits and needing 50 actions, and team no. 4 with position 6, 127 bits and 49 actions. Team no. 6, 7, and 8 represent an adequate score: 2 positions difference 16 – 14 – 12, ten bits difference 118 – 109 – 99 and 6 actions difference: 42 - 36 – 30. Team no. 10 also reached a good result with position 13, 91 bits and 36 actions, playing very cost-effective. In this way, the teams discuss their results in the debriefing phase for improvement of actions and organizational learning.

2. Organizational learning through the single actions

The teams learn how to strategically plan a change process through the sequence of the actions. Although there is no “perfect” solution because computerized feedback is individualized, actions must be played in a certain order for the process to move forward. Often, teams set actions too early, rarely too late, which then prevents the employees from moving forward. The first learning of the teams thus refers to the fact that the change process must be planned strategically. Especially when this falters, students tend to move forward through "trial and error" and spend too many bits - in reality, this would equate to a disproportional increase in budget. Those teams that proceed thoughtfully take longer, but usually achieve better results.

This leads to the second learning: A change process is time-consuming and communication intensive. Often teams want to move on too quickly into the operational phase and must learn that the communication work cannot be skipped. Many actions in the game relate to intensive one-on-one and group conversations that need to be held, and with all stakeholders. Teams often focus too much on the management here and neglect the entire staff. Actions that are usually set too early are the organization of an information event to announce the change process, a written survey with the staff affected, the setting of a vision, or a problem analysis. These actions can only be set once the shock phase has been overcome.

Another important learning is to recognize the social relations with mutual influences and informal opinion leaders. A separate action is aimed at this. In most cases, the importance of staff positions such as the executive secretariat is underestimated, while too much importance is attached to departmental heads. In a change process, however, it is necessary to involve as many employees as possible. This is decisive for the formation of a representative steering group, an important action to play as well: The teams discuss intensively who should participate in it. Another action aims to involve customers and suppliers in the process as early as possible, which usually comes as a surprise to the teams at play. However, the outside view is quite crucial for progress and is often integrated too late in the game.

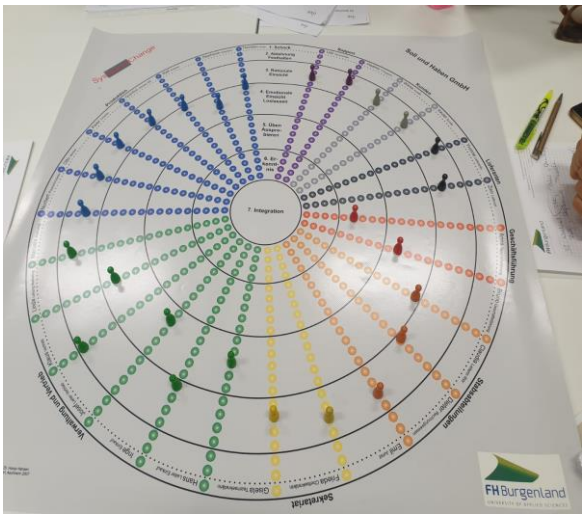
The fourth learning relates to dealing with resistance and integrating blockers. Although this primarily impacts emotional learning, teams learn cognitively that resisters should be considered but not overly engaged with. It is important to exploit the influence of the “early adopters” [6] on the skeptic by recognizing the social relationships. The positive or negative attitude of the employees towards the change process is uncovered by the action “stakeholder analysis”. Teams must find a solution to move the resisters. Usually this is done through actions related to intensive one-on-one meetings or third-party influence.

3. Emotional learning through group dynamics

In terms of emotion and group dynamics, the game characters of the employees are designed in such a way that they can lead to very emotional reactions by the playing teams. They experience similar emotions within their group dynamics like the game characters involved in the change process The teams thus really feel by themselves the resistance when an employee does not want to "move", the moments of success when the change process is progressing, the doubt and skepticism that must be resolved through communication, angry outbursts about the strong resisters. The need for coordination that is necessary for a change process and longer or shorter phases of frustration, when the game gets stuck, become very evident.

The game characters of the employees are created in such a way that a similarly strong group of supporters faces the resisters. The supporters include the managing director who initiates the change process, the executive secretary, the marketing manager and the foreman in the company. This group is opposed by the negative supporters, such as the managing director's brother, the production manager, the works council and a sales representative.

Figure 3: Playing field of the game with the virtual employees [7]



Some teams start with a high level of motivation until they are slowed down by the course of the game. Success is then determined by how well the teams can overcome this demotivation, adjust to each other and coordinate further actions. Other teams are reserved and risk-averse, especially at the beginning, and first clarify their roles during the game to then finish it highly motivated - here, the teams experience the Forming/Storming/Norming/Performing phases [8] in short. Essentially, decisions about individual actions are made collectively within the teams, and there is an evolution from a group setting to a team playing. Almost all teams in this process are confronted with impatience, helplessness, frustration and confusion on the negative side - in contrast, understanding, patience, insight, courage, self-motivation and role clarification within the group dynamics represent the positive side.

4. Debriefing and reflection of the game

In a final online debriefing phase, each team reflects on the play in a presentation of about 30 minutes. Questions are asked about the group dynamics, personal emotions and the strategic approach. It is analyzed which of the actions were taken too early or too late. Although competition among the teams is not intended, it cannot be excluded as gaming always refers to earning points, badges, levels and scores. The teams present their most important learnings and discuss which aspects of the game can be transferred to reality. This creates a dense, often emotionally challenging learning experience that is new to most of the students. In this sense, games “impact directly motivation. learner engagement, and satisfaction.” [9]. With comments in the evaluations like "exciting, insightful, very informative, effective, I would have liked to play longer" the aim of enhancing their engagement is achieved to a very high extent.

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