

CHAPTER 4

Attractiveness of Games and Business Simulations in Teaching Process

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Summary. This study aims to assess the attractiveness of games and business simulations in the teaching process. The presented overview concerns their application in primary and secondary schools, at universities and in business. Among the most important benefits were the development of participants' creativity and the use of games as effective tools for imparting practical knowledge. The chapter presents the results of a survey completed by 97 participants. The study showed that the use of games and business simulations is positively perceived by trainees and students, but this form of knowledge transfer must be used with awareness of its limitations relative to other forms. The last section focuses on conclusions and suggested possibilities for further development of games and simulations in the teaching process. Colloquially: does the use of business games make learning a more enjoyable and less boring process? Is the preferred option for acquiring practical knowledge the choice of a book or attending a lecture, or would participants prefer game- and simulation-based learning?

Keywords: business games, simulation games, educational games, gamification, artificial intelligence

1. Attempt at defining business game and business simulation game

Game is a term that incorporates various activities and forms of playing, characterized by the application of specific rules. Business games or business-oriented games focus on management, social relations, law and finances (Ceschi et al., 2014). Participation in games allows players to gain the necessary abilities for conducting business or leading a team, including communication skills and enhanced creativity (Cavalcanti Rosa et al., 2019). Most often, these games require the presence of a coach or other person who would moderate the gameplay while being attentive to all the players. Such person serves the role of an arbiter as well as a teacher. They demonstrate the rules and ensure the appropriate

flow of the gameplay. The presence of a third party allows players to focus solely on the play instead of monitoring whether the rules are being followed. An alternative approach includes games with clear rules, in which the players must read a manual beforehand. These usually come in the form of board games or games utilizing simple items, such as cards, game boards or dice.

A simulation is an attempt at recreating a real-life phenomenon. It allows for a certain simplification of the situation to better understand the pattern of behavior. We may consider simulations as experimenting on an arranged model (White, Ingalls, 2009), in which the model constitutes a specific representation of reality. A well-designed model should constitute the middle ground between simplicity and realism (Maria, 1997) while preserving the rules we observe in reality. Business simulation games constitute a combination of simulations and business games. A business game, therefore, is a broader term than a business simulation game (Birknerová, 2010). We can define the latter as a game played in a prearranged system designed to reflect reality to a certain degree. Players must adapt to the conditions in the simulation to achieve the best possible results. Such games may be much more convoluted than business games because the sole utilization of a system can render the rules more elaborate and the relations more complex. Usually, computer programs responsible for the simulation aspect are used for playing. Some simple business simulation games are released in the form of board games, but the rules have to be straightforward enough for the players to follow them without the help of electronics.

2. Business and simulation games in education

Business games and business simulation games are tools utilized at every step of education: in primary and secondary schools, at universities and even during business training which points to their universality. Needless to say, games designed for younger people are relatively less complex than those for professionally active people. Nonetheless, by choosing appropriate themes and techniques, it is possible to make a game suitable for people of any age and stage of education. The overview prepared for this chapter is based primarily on Polish education. Games are used as means for introducing students to economics, business, and communication as early as elementary school (Leśniewska, 2017). Learning through games and playing is beneficial for acquiring new skills, although mostly soft ones, in a friendly atmosphere (Hernik, Jaworska, 2018). The immense popularity of video games (Mendes et al., 2022), as well as board games (Sousa, Bernardo, 2019), can make them a more often considered tool for teaching various skills, including communication and business (Noemí, Máximo, 2014). Research on the application of games in developing cooperation and social skills shows positive results (Öztürk, Korkmaz, 2020). In educational establishments, extracurricular workshops are organized. Owing to the *Ferie z Ekonomią* programme aimed at 7th- and 8th-grade students, young people from over 50 schools participated in courses on the introduction to economics and rules governing business activities. Business games and other practical exercises were applied as means of teaching there. In establishments such as the Center for Good Education, young people create their own educational games with a focus on entrepreneurship and

communication¹. It proves that they consider games an appropriate method for sharing knowledge and spending leisure time.

The secondary school curriculum includes a subject called Introduction to Entrepreneurship, during which students acquire knowledge from the fields of basic economics, the market, running a business and communication. Teachers often use business and simulation games to convey practical knowledge and make students actively participate in classes (Tracz, Rachwał, 2008). As part of the subject, students compete in various business simulation games, such as *Ja Titan* or *Szkolna Internetowa Gra Gieldowa*. A game called *This War of Mine* was established as official educational material by the Polish Government. In addition to the undisputable ethic values, the game is also a simulator in which players must carefully manage available resources and take risks on multiple occasions.

At higher education institutions, business games and business simulation games are also utilized in courses as means of conveying practical knowledge. A valid and notable aspect of games and simulations is that they allow students to independently acquire knowledge and draw conclusions from their own mistakes (Gaweł, 2016) without incurring a risk. They engage students notably more than other teaching methods (Smiderle et al., 2020). In SGH Warsaw School of Economics, there is a separate course called Business Simulation Game² dedicated to teaching students in one extensive simulation about running a company. At Kozminski University in Warsaw, the Division of Simulation Games and Gamification was established, which organizes classes on the implementation of simulation and games in training and education³. Some subjects at Kozminski University have their material based primarily on the utilization of simulation games during classes, such as strategic decision games. Frameworks are also created and developed, which make it possible to conduct classes based on business simulation in tertiary education (Öztürk, Korkmaz, 2020).

Preparing games or simulations with suitable complexity makes it possible for the participants to gain practical skills (Cohen, Rhenman, 1961), including those connected with management and communication (Rzońca, 2011). Participation in games, in turn, allows players to interact with each other in a natural manner (Routledge, 2016). For that reason, business and simulation games are used in courses dedicated to professionally active businesspeople. There are companies on the market that provide paid courses and materials based on games and simulations, such as *Pracownia Gier*, *Businessgames* or *Cesim: Business Simulation Games*. A wide variety of options makes it possible to choose the most beneficial tool for acquiring skills such as:

- management and leadership (Zulfiqar et al., 2019),
- teamwork (Ceschi et al., 2014),
- managing resources,
- product development (Pacheco-Velazquez, 2015),
- strategic management (Wolfe, 1997).

¹ <https://cdw.edu.pl/biznesowa-animacyjna-gra-planszowa/> [22.11.2022].

² https://usosweb.sgh.waw.pl/kontroler.php?_action=katalog2/przedmioty/pokazPrzedmiot&kod=130830-P [20.11.2022].

³ <https://www.kozminski.edu.pl/pl/jednostki/centrum-gier-symulacyjnych-i-grywalizacji> [20.11.2022].

Simulation games also assist in developing creative, lateral thinking (Moffat et al., 2017). Available products include contact games, board games, as well as online games which use communication platforms (usually verbal team games) and full-fledged computer games. Thanks to the advancements in technology, games and simulations are effectively used in multinational teams, as it occurs in corporations such as The Coca-Cola Company or AstraZeneca⁴.

A vital element of simulation games is the faithful reconstruction of the environment they are supposed to simulate. For that reason, business and simulation games available on popular gaming platforms *Origin* and *Steam* often utilize artificial intelligence. Its principal function is managing the simulation to which the players must adapt. Although such games serve primarily as sources of entertainment, they can also teach players various abilities. Artificial intelligence can sometimes be quite simple and responsible only for particular events, as in old games like *Tropico* or *RollerCoaster Tycoon*. In contemporary simulation games such as *Rogue AI Simulator*, artificial intelligence may be used to manage the whole gameplay. It points to the possibility of using AI-based and machine-learning-based solutions for developing advanced simulations from different fields that would also serve as learning tools (Opel et al., 2019), including management and business.

3. Assessing attractiveness of business games and business simulation games

This chapter aims at assessing the appeal of business games and business simulations (G) in comparison with other available methods of acquiring knowledge in the fields of business and social communication. Other methods include:

- oral means of conveying knowledge (O), which include lectures and talks,
- written means of conveying knowledge (W), which include books and research papers.

The study was conducted in the form of an online survey in which 97 people participated. The survey was submitted to students attending the Faculty of Management at AGH University of Krakow and people professionally active in the fields of business and communication.

The demographics section of the survey consisted of three questions, while the questionnaire about preferred methods of acquiring knowledge had four questions. In the second section, participants answered the following questions:

- Which method do you find the most beneficial for acquiring theoretical knowledge? (Q1),
- Which method do you find the most beneficial for acquiring practical knowledge and experience? (Q2),
- Which one of the following methods do you consider the most entertaining? (Q3),
- Would you be more willing to attend a course or training if practical exercises based on games or simulations were part of the schedule? (Q4).

For clarity, the data was presented both in percentage and numerical values.

⁴ <https://www.businessgames.com/> [21.11.2022].

The answers to question one are presented in Table 1. The study shows that a significant number of respondents (48.5%) considered written forms the best method of acquiring theoretical knowledge. It points to the conclusion that books and publications have the most credibility as far as facts are concerned. Percentage of people who consider games and simulations a valuable source in that regard amounts to only 18.6%. Such reception of this form may denote that games and simulations are not focused enough on presenting the theoretical background reliably. On the other hand, they are perceived as the most entertaining option by the participants of the survey (75.3%) as well as the best method for conveying practical knowledge (85.6%). A small fraction of surveyed people considered oral (11.1%) and written (13.4%) methods the most enjoyable.

Table 1. Assessing the appeal of business games and business simulation games, questions Q1–Q3

Question number	Oral (O)		Written (W)		Games (G)	
	respondents	[%]	respondents	[%]	respondents	[%]
Q1	32	33	47	48.5	18	18.6
Q2	8	8.2	6	6.2	83	85.6
Q3	11	11.1	13	13.4	73	75.3

The vast majority of surveyed people (92.8%) declared they would at least be more willing to attend a course or training if games and simulations were part of them. Only a small percentage of the participants (7.2%) either consider it neutral or evaluate it negatively. Therefore, the study demonstrated that incorporating games and simulations into training or a course increases its attractiveness. Table 2 presents the answers to the second question of the survey.

Table 2. Assessing the appeal of business games and business simulation games, question Q4

Rating									
1		2		3		4		5	
respondents	[%]	respondents	[%]	respondents	[%]	respondents	[%]	respondents	[%]
1	1	1	1	5	5.2	25	25.8	65	67

Additionally, there are significant differences between groups when we consider the occupation. Professionally active people declared comparable interest in oral form (43.2%), written form (43.2%) and games (40.5%) in terms of theoretical knowledge. Among school and university students, as well as employed students, the preferred form of acquiring theoretical knowledge was written sources (50.9% on average), while games and simulations were the least favoured method (22% on average). Table 3 presents the answers to the third question.

Table 3. The most beneficial method for acquiring theoretical knowledge – with regard to the occupation

Occupation	Oral (O)		Written (W)		Games (G)		Total
	respondents	[%]	respondents	[%]	respondents	[%]	
Employed	16	43.2	16	43.2	5	40.5	37
Employed and studying	7	25.9	14	51.9	6	22.2	27
Studying	9	28.1	16	50.0	7	21.9	32

By categorizing participants based on their educational background, we could also observe a difference in answers to Q1. 53.6% of those with higher education declared that written forms constitute the best method of acquiring knowledge. Games and simulations were indicated only by six people (10.7%). Participants with secondary education also chose the written form most often, but in this group, oral forms and games were equally popular (30%). As far as Q2 and Q4 are concerned, no significant differences were observed in the above categories. The answers to the fourth question are presented in Table 4.

Table 4. The most beneficial method for acquiring theoretical knowledge – with regard to the educational background

Education	Oral (O)		Written (W)		Games (G)		Total
	respondents	[%]	respondents	[%]	respondents	[%]	
Secondary	12	30.0	16	40.0	12	30.0	40
Tertiary	20	35.7	30	53.6	6	10.7	56

4. Conclusions

The study demonstrated that business games and simulations are considered more congenial in comparison with written and oral forms of conveying knowledge. Regardless of their educational background, the majority of the survey participants declared business games and simulations not only to be the most appealing but also the most beneficial for gaining practical abilities. They are lacking, however, in terms of conveying theoretical knowledge. The participants stated that they would be more willing to attend courses which incorporate business games and simulations. Since trainings and courses should provide trainees with both knowledge and the ability to utilize it, it would be reasonable to combine as many different teaching methods as possible. Games and simulations could eventually become versatile tools if, in addition to their already appreciated appeal and practical knowledge application, the presentation of the theoretical background was improved. To achieve that, the developers of computer games and simulations could, for instance, implement particular fragments of

books and other publications in the form of a lexicon or a concise wiki. As far as stationary or contact games are concerned, the necessary knowledge could be attached in the form of a manual or a folder, so that every participant has access to it. Business games and simulations are promising for teaching business and communication skills, but they must be carefully prepared and polished in terms of factual accuracy so that players can acquire a complete set of competencies in addition to the entertainment from playing.

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