

## USE OF MANAGERIAL GAMES IN THE PROCESS OF EDUCATION OF FUTURE MANAGERS AT UNIVERSITIES

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**Abstract:** *The paper provides an overview of the use of managerial games at universities in Slovakia and the Czech Republic, through a comparison of results and conclusions resulting from the survey conducted in selected universities. Finally, the results of the analysis are summarized and evaluated. This paper was prepared on the basis of a search of Slovak and foreign literature, databases and questionnaires.*

**Keywords:** *managerial games, simulation, competitiveness, management, education*

**JEL Classification:** *G0, G30, M0*

### 1. INTRODUCTION

Today, achieving and maintaining a company's competitiveness is a very challenging task for management. The reason for this is the high dynamics of the development of the business environment, which is due to constant and rapid changes. As a result of these changes, the demands on personnel management and organizational changes are increasing, new assumptions of strategic importance are appearing, there is an information revolution, the importance of knowledge management is growing, etc. In connection with this, the requirements of business practice for future managers and thus the demands on the educational process and its effectiveness are constantly growing.

The educational process has undergone a number of changes in recent years. The greatest emphasis is placed on increasing the efficiency and streamlining of the educational process. This is the reason why new methods and ways of education are constantly being sought. Managerial games are considered to be one of the most effective forms of education. The issue of managerial games is addressed in the world by many authors, who provide a number of definitions and definitions, as well as point out the benefits of using managerial games in the educational process and the impact on increasing its effectiveness. Unfortunately, in Slovakia and the Czech Republic, too much attention is still not paid to the use of managerial games to increase the efficiency of the educational process, as is the case in the world.

### 2. ISSUE OF MANAGERIAL GAMES

In defining the issue of managerial games, attention was paid especially to authors who perceive management and simulation games as a means to increase the effectiveness of the educational process of future managers.

For example, Baer [2] considers managerial games to be a remarkable tool that can currently be used for training, testing, monitoring knowledge, but also the overall behavior of learners. Wozniaková, Peterková [12] say that these games represent the right way to verify but also gain additional knowledge.

Managerial games thus represent a modern, effective, efficient way of education. This method of education allows

individual members to learn to move in difficult situations, disciplines such as the operation of the company in the market, management, decision-making, the functioning of individual members in the team. It is a combination of education, tension, fun. [3]

This is a non-traditional concept of training, which is based on the principle of practical simulation of a real environment similar to a pilot trainer. So these are real experiences and emotions. It is a highly interactive and highly effective managerial development tool that fully follows the "Learning by doing" principle. "[1]

Based on these definitions, it can be assessed that managerial simulation games do not replace practical activities in the field of decision-making, but allow to acquire knowledge from various areas and also to acquire new skills. They therefore represent a test of decision-making in a real environment. These games can therefore be aimed at developing the personal skills of future managers, their communication skills, but also to lead people, all based on the experience of playing this game, which is practical and therefore real.

The objectives of why companies and universities involve their people in games are as follows [2]:

- increasing participants' interest in the problem area,
- involvement of participants in the learning process,
- acquisition of new abilities, knowledge, skills,
- change their attitudes, opinions, values,
- deepen acquired abilities, skills from the past,
- gained experience to use in real life,
- better understanding of man, his behavior and actions,
- measure acquired knowledge, skills.

Managerial games can have several characteristics, which Huizing [9] has defined as follows:

- a way in which no one can be forced,
- limited in time as well as in space,
- certain rules which must be strictly observed,
- exiting from ordinary life into the sphere of activities with one's own tendency.

Based on common characteristics, games can be classified according to [9]:

- the subject on which the game is aimed,
- the nature of the competition,
- generality of focus,
- interactivity rates,
- how members are involved in the game,
- the method of technical implementation of the game,
- the randomness of the event in the game,
- overall complexity,
- the way the game works with game time.

Currently, there are a large number of games that are designed to compete either between teams or individuals, or a single player competes with a computer. Others use computers as referees to see if they have referees as real people.

Kairos [10] states that there are currently at least 100 gaming games. Depending on the relationship of the players of the simulated model, these games can be divided according to Birkner [4] as follows:

- competitive - in these games, players or teams compete against each other, but the results of a given stage can be determined only after the end of individual activities, where the required decisions are then made for all players,
- non-competitive - the opponent is the simulation model itself. In this game, the results are determined immediately, but only after all activities have taken place or when all players have decided on a certain strategy.

Furthermore, these games can be divided into several categories, such as [4]:

- board games - refer to simulated decision-making in various situations, which is largely influenced by chance (eg Monopolies),
- computer games - these games are intended directly for entertainment, but can also represent a certain form of education or correct decision-making (eg various turn-based strategies, building games),
- team educational games - players have predefined characters and tasks in which they then perform (eg in the form of team building),
- simulation of real processes with the help of technology and computers.

Each managerial game has its own characteristics, with the help of which it differs from other games. Forssén-Nyberg and Hakamäki [5] characterize the basic features of managerial games as follows:

- it must be a reflection of reality - if the experience of this game is to be effective, it must be gained in a real environment,
- active social communication of live participants - this is an element where the simulation game differs from the computer simulation,
- the aim is to assess reality, self-assessment and reflection.

The game consists of several stages, cycles and cycles are further divided into steps, activities. The cycle itself has its phases:

- During the initiation, players get acquainted with the game, the script, and obtain new necessary information.
- Planning is characterized by analysis of available information.
- The action will take place on the basis of the decisions made according to the results obtained by the players in the previous point.
- Evaluation is the last step of the cycle and there is a discussion, communication about the achieved results from the cycle.

After evaluating the achieved results, another cycle occurs again, which begins with initiation. As part of the initiation comes a certain problem, a situation that players have to solve. [8]

There are a number of advantages associated with the use of managerial games, which, among other things, lead in particular to an increase in the efficiency of the educational process. For example, according to Vojtek [14], the main advantages of managerial games and simulations can be considered:

- exposure to similar situations as in a real company,
- a range of experiences,
- strong motivation to compete,
- teamwork,
- connection with a strong real story.

In addition to these mentioned advantages, the author Horčíčka [7] stated the following:

- training of managers,
- experience of playing roles in a dynamic system,
- desktop and computer version.

Sponge [13] identified further benefits:

- the simulation allows employees to learn by experiencing the consequences of their activities and thus repeating different strategies to find different results,
- I do it and I understand: assessing the usefulness of web-based management simulations to develop critical thinking skills,
- provides employees with an understanding of the broader strategic picture.

Also, in addition to the advantages, these managerial games have various shortcomings, which can be defined as follows [7]:

- insufficient ability to capture reality in detail,
- limited game conditions.

The author [3] defined that there are other disadvantages, such as:

- preparation is often costly and time consuming, so there is pressure to develop complex managerial simulation games,
- in the case of computer simulation, a sufficient number of computers must be provided,
- performers do not have to perceive the managerial game as a reality, resp. they do not have to take it seriously and thus may lose the motivation for it. [3]

### 3. GOAL AND METHODOLOGY

The main goal of the survey was to find out whether the monitored universities use managerial games in the educational process or what are the main reasons for not using them. The partial goals of this survey were to identify the overall attitude of universities to these managerial games.

This study was carried out in selected universities in April 2019 in the form of a questionnaire survey. The questionnaire was compiled electronically so as to contain the simplest and most easily understandable questions for the respondent. It included a total of 10 questions. The questionnaire prepared in this way was sent electronically to e-mails of professors of all universities in Slovakia and the Czech Republic, focusing on the given area.

The basic set included all universities located in Slovakia and the Czech Republic, in the number of 15 universities for the Czech Republic and 5 universities for the Slovak Republic. Intentional non-random selection was selected to obtain a sample of respondents. [6] Universities in Slovakia and the Czech Republic were selected and searched using the Internet and the official websites of universities operating in Slovakia and the Czech Republic. Subsequently, study programs with a focus on management were viewed on the website. After searching for study programs that would correspond to the selected issue, the study plans and syllabi of individual subjects were reviewed, and if the subject included the topic of managerial games, then this university was included in the list of schools that were addressed.

The final sample for the survey included a total of 17 universities, namely 3 universities from the Slovak Republic and 14 universities from the Czech Republic. At all these universities there is a presumption of a relationship to the researched issue. The relationship of these universities to the given topic of the survey was determined by an earlier analysis.

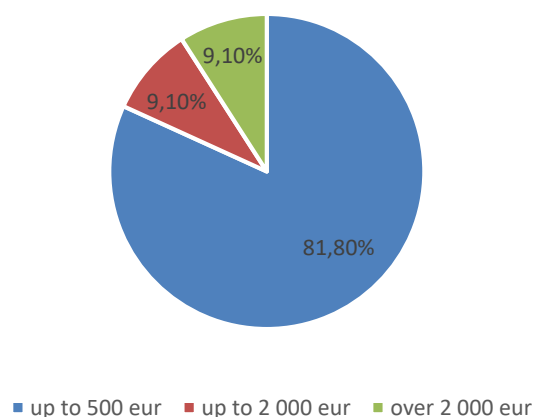
The return on completing the individual questionnaires was relatively high and represented a total of 14 completed questionnaires, but 3 universities did not complete the questionnaire due to travel and also due to the introduction of a bad e-mail on the website, which represented returning the report.

The questionnaire survey was focused on finding out the use of managerial games to increase the effectiveness of the educational process at universities in Slovakia and the Czech Republic. From the very return of the questionnaire, it can be concluded that the interest in this issue and the use of managerial games in the educational process at universities is higher in the Czech Republic than in Slovakia. While a total of 14 universities were contacted in the Czech Republic and 11 of them showed interest in the issue and actually completed the questionnaire, in Slovakia 5 universities were contacted, but unfortunately only three universities completed the questionnaire. The results of the questionnaire therefore rather represent Czech higher education and a relatively small part of universities in Slovakia, where, however, they are developed universities with a high level of educational process. The questionnaire was mostly filled in by universities with a focus on economics and management.

### 4. DISCUSSIONS

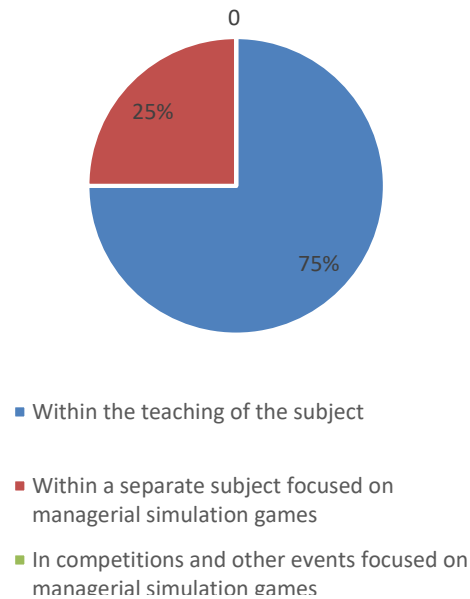
A positive finding is that more than 85% of universities use managerial games as part of the educational process. Almost 60% of these universities stated that they have been using managerial games in teaching for more than 10 years, while 25% of schools have been using them for less than 1 year. A really surprising finding is the fact that more than 60% of these universities use their own developed managerial games. More than 30% of universities use existing managerial games, namely: Manahra, Promis, FactOrEasy, Act as A, Greatail International, supermarkets, Cestovka, Insolvency Simulation, SimBiz, Marketplace, LUDUS, GMC.

Significant investments are also associated with the use of managerial games, whether in the development, purchase or sustainability of the game. More than 80% of the surveyed universities state that they invest a maximum of EUR 500 a year in managerial games. Less than 10% of schools state that they invest up to EUR 2,000 per year and the remaining 10% more than EUR 2,000 per year. The following chart shows that investment in managerial games in most universities is not enormously high.



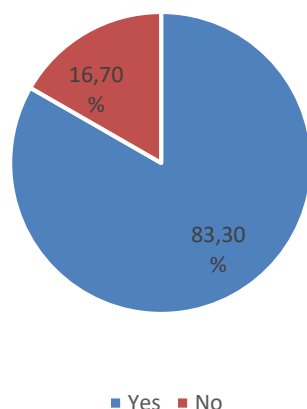
**Graph 1** Management game costs

Managerial games are used in these schools as part of the educational process (to increase its effectiveness) to support teaching in various subjects. As can be seen in the chart below, 75% of the addressed schools use the game mainly in the following subjects: Management 1, Business Management System, Project Management, Basic Management Course, Business Management, Business Skills, Strategic Management in Business and Tourism, Law in business 2, Simulation of economic processes, Strategic marketing, Decision theory, Strategic management, Fundamentals of managerial decision making. A separate subject, where managerial games are directly taught, has 25% of universities in their portfolio of subjects. At the same time, the graph does not show the possibility of using managerial games through competitions that are focused on managerial simulation games, which may also be an opportunity for schools in the future.



**Graph 2** Ways to use managerial games

The addressed universities are aware of the importance of managerial games in the educational process and the benefits resulting from it, which is probably the reason why more than 80% of schools plan to deepen the issue of managerial games at their school in the future, as can be seen in the chart below. . In the future, almost 45% of schools want to establish cooperation with specialized institutions dealing with managerial games. More than 10% of the surveyed schools plan to deepen the issue of managerial games at their school either by introducing managerial games, introducing a subject that would address this issue, participating in a competition based on managerial games, using in several subjects, developing their own managerial games for specific purposes. education, connecting theoretical knowledge with practice in the form of simulation, creating a teaching aid, automatic evaluation of the results of the existing managerial game.



**Graph 3** Planning the introduction of managerial games at universities

A positive finding is the fact that all schools can imagine the use of managerial games in the educational process. However, only less than 50% of the schools surveyed said that they really actively use managerial games in their teaching. More than 8% of the surveyed universities are not convinced of the effectiveness of the introduction and use of

managerial games. However, no explanation was given here. The reason for not using managerial games in the educational process was also in more than 8% of schools the fact that students of these schools find teaching through managerial games highly demanding, as well as for teachers who are afraid of time and effort. Not very surprising is the fact that 25% of schools surveyed do not use managerial games due to lack of funds for their development, procurement or administration.

When procuring a managerial game, the addresses are most often decided on the basis of price, quality, complexity, focus and time-consuming game. The chart below shows a detailed look at the factors that respondents consider to be key in the acquisition and development of a managerial game.

All respondents agreed that managerial games bring a number of benefits, such as Increasing students' creativity, connecting theory and practice, increasing the efficiency of the decision-making process, etc. Although Slovak and Czech universities offer quality education for future graduates, they certainly have something to learn from foreign universities. In the world, as well as at foreign universities, managerial simulation games are a common concept that they use to their advantage. All you have to do is enter the concept of managerial simulation games into the search engine and organizations that offer such simulations will start up immediately, whether for companies or schools themselves. However, foreign schools also use their own games. Thus, selected schools in the United States of America and also in Europe were also examined for interest.

#### University of LEEDS - England [18]

The English university was named the best business university in England in 2018 and ranked 10th worldwide according to CEO magazine. The school uses managerial simulation, specifically in project management, where students encounter tasks that the project manager must solve on a daily basis.

#### London Business School - England [18]

In addition to the study programs themselves, the University of London offers additional courses, including a management simulation focused on management and finance. Students can thus choose a course for their study programs where they will practice real situations from the management and finance of the company.

#### IESEG School of Management - France [18]

French University IESEG School of Management is one of the top business universities in France. It collaborates with more than 150 universities in more than 43 countries. Since 2010, it has also used managerial simulation, specifically at the engineering level in the Management program.

Provides practical experience in strategic management and governance.

#### Lappeenranta University of Technology - Finland [18]

This young Finnish university has included in its portfolio a course called "International Business Strategy" where it combines theoretical knowledge with practical experience. Within the course, students gain experience in common business processes and management, at the same time the university tries to motivate its students to achieve the best

possible results in training practical skills using managerial simulation.

#### Harvard - US [17]

One of the best business schools, and one of the best schools in the world, Harvard, combines a number of teachers who create simulation games themselves, while supporting learning through managerial simulation games. As they claim, managerial games produce more energy for students than classic lessons and studies. Students are passionate about work and test the effects of their decisions on their own skin. So far, Harvard University has produced more than 30 managerial simulation games. Students have a choice of economics, finance, management, marketing, operations management, information technology, etc. At the same time, they can play games that the school has taken over from external developers or from another university.

#### University of Pennsylvania - Wharton School of Business - US [15]

At the University of Pennsylvania, one of the professors, Professor Alfred West, has focused on developing more than 30 managerial simulation games that provide support and gain practical experience in the fields of economics, finance, management and marketing. Games combine challenging tasks, but they are also fun and support students' creative thinking.

#### Queen's University [16]

This Canadian university focuses on medicine, but also uses simulation games and environments. Thus, students can try out real situations that may occur during the treatment of the patient, and then students enter the hospitals, who are not without practice and can solve the situations without stress.

#### University of Central Florida [15]

At the University of Central Florida, students attending pedagogy can try to teach 5 students without actually attending school. This is possible thanks to simulations where 5 virtual students are led by students from the outside environment who are instructed in advance to try different behavior towards the teacher.

#### University of Washington [16]

Managerial simulation has been used at the University of Washington since 1957. As technology has advanced since then, it has gradually moved into managerial games. The university actually develops games with the help of Novel, which develops simulations and games. At the same time, the university incorporated business lessons, strategies that are used by surrounding companies such as Starbucks, Alaska Airlines, etc.

## 5. CONCLUSION

In conclusion, it is possible to say that based on a questionnaire survey, it is really varied in Slovak and Czech schools. Some invest more than 500 euros a year in managerial games, use managerial games in teaching for more than 10 years, have also incorporated managerial games into subjects, but also deal with managerial games with the help of separate subjects, other schools play less than 1 year, they invest less than 500 euros a year in games, use only foreign managerial games, or do not use games as it is difficult for students or the teachers themselves, etc. However, one thing in common is the desire to deepen the issue of managerial simulation games in our and neighboring territories and thus get closer to top educational institutions abroad. Schools see meaning in managerial simulation games and therefore want to establish cooperation with specialized institutions that deal with managerial games. They also present an easier way to involve managerial games in their teaching in the form of active participation in various competitions. The issue of managerial simulation games needs to be really firmly grasped and we can really look at how I can involve my school in this process, as we also met with the opinion that managerial games have schools in their curriculum, but do not use them. So the question was, why is that? More than 25% of schools stated that the reason why they do not use managerial games is the lack of funds for the development, procurement or administration of the game. Therefore, there is an opportunity for the future, where education could help schools with funding to introduce managerial games into the educational process. This issue concerns everything. All processes that would be simulated and taught within the school, graduates will sooner or later try first-hand in companies and the state clearly wants prosperous companies, which could help to invest in managerial games, where students would master the processes, activities of the company, and have also become sought - after graduates with experience. At the end of our survey, we also looked at foreign universities, and as you can see, there is much to learn from foreign schools. It's not just universities that use external companies to deliver managerial games, but universities are largely producing their own managerial games, which they introduce into their curricula in the form of subjects or courses, and educators can't praise it. It is therefore necessary for our schools to stop being conservative and not only focus on teaching through lectures, presentations, literature and study materials, but to take education to a higher level and allow students to complete school not only with theoretical knowledge but also with practical knowledge.

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