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## Gaming Methods in the Management Teaching at Secondary Schools

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#### Abstract:

*Introduction:* The paper deals with the design of gaming methods for teaching Management at secondary schools and the importance of using effective games in the process secondary education.

*Methods:* The authors analysed and summarised the relevant findings collected during the fifty-year history. For the purposes of the investigation, a questionnaire survey was carried out between April 11, 2016 and April 22, 2016. Finally, interviews with teachers were conducted.

*Results:* Specific gaming methods for teaching Management were implemented in classrooms which helped to identify the strengths and the weaknesses of the gaming methods.

*Limitations:* The limits of the survey were given by the small number of respondents (100) and by the fact that only 6 questions were asked.

*Conclusions:* The gaming methods are attractive not only for pupils and students but also for adults and represent one of the most attractive teaching methods. There is a connection between gaming methods, didactics and andragogy.

Key words: gaming methods, economical subjects, management.

## **1** Introduction

Nowadays, the ability to adapt, to be dynamic and to be able to learn new things are important factors. In times, when information technology is developing, everything is changing constantly. Usually, we are lack of trends in neighbourhood or we do not understand them. Organizations change, increase or disappear, arise branches, mergers or amalgamation of organizations, new

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information systems are implemented. Especially for school management, it is not easy because of the innovative and proactive behaviour and the use of modern techniques and new tools for colleagues and employees. Everybody has a unique mix of features and capabilities.

It turned out that the most effective way of learning is in the form of gaming (Horčička & Jelínková, 2013; Svetlíková, Zelina et al., 2014). But this game is not an ordinary game. Normal games possibly amuse some interesting facts. The principle of the application of the gaming method is quite similar to that of traditional games but contains some distinguishing features.

Gaming methods are not exhaustively defined in the system of didactic methods. Elements of games can be exposed into many didactic methods which are classified by various factors. "Games" occur, for example, in the didactic methods of a simulation, role play or problem solving, etc.

The output of this paper is the answer to the question whether we can use gaming methods for improvement in Management teaching with specific economic subjects in secondary education. Our intention was to suggest specific gaming methods that can be used for the purposes of teaching Management. We applied them during lessons at secondary schools and evaluated them based on interviews and questionnaires administered to students. Then we identified the strengths and weaknesses of gaming methods and validate their application in secondary education.

## 2 Methodology

The concept of the specific gaming methods was preceded by an analysis of information sources which describes gaming methods and their principles with an emphasis on learning and education with regard to the specifics of economic subjects. We used an analysis and summary of relevant findings which were collected during about the fifty-year history of gaming methods by the scientific community. In this area, we mainly focused on the validity of using gaming techniques as alternatives to traditional teaching methods (lectures and case studies). After the elaboration of this part, we were able to estimate using games and gaming methods for specific purposes. We specifically meant the suitability of gaming methods as a tool for teaching specific knowledge and skills.

We found only a little information on the issues of gaming methods in Czech secondary education. We have to use mainly professional articles written in English which are concerned with this topic.

Through the use of a questionnaire survey, we could identify whether games and gaming methods are attractive not only for students but also for adults. By this step, we wanted to make sure whether it is appropriate and relevant to propose the inclusion of gaming methods into contemporary secondary education. The questionnaire survey was carried out between April 11, 2016 and April 22, 2016 on the sample of 100 respondents. The goal was to determine if respondents like games which develop their skills and thinking. For administration of the questionnaire, we used www.vyplnto.cz. This questionnaire contained six questions.

In the form of interviews with teachers of economic subjects, we investigated the possibility of using gaming methods in these subjects in light of the terms of time, demands on the preparation, applicability and legislation. In this context, we formulated the following key questions:

KQ1: What is the significance of games in secondary education? What is the role of games in secondary education?

KQ2: How effective are the games used in the process of secondary education?

Respondents were pre-selected and approached with the request to participate in the qualitative survey. There were 5 qualitative interviews with 3 male and 2 female respondents.

The result of this paper is the design of gaming methods for teaching Management which were implemented in the classes. In our questionnaire survey for students, we identified the strengths and weaknesses of those methods in education. The survey was realized personally in April, 2016.

## **3** Gaming methods as important tools in education

A strong stimulus to use games in schools comes from psychology and research about the principles and importance of games in education (Čáp, 1997; Fontana, 1995). The positive effect of games as spontaneous activities resulting from the satisfaction of natural needs and interest of adult humans (spontaneous learning "out of curiosity"), is also beyond question.

The game theory contributes to the knowledge about games as multipurpose activities which serve to satisfy many different needs of children and promote their development in every aspect. The recognised Greek philosopher Plato was one of the first who realized the practical value of games. Plato, in his "Laws", provides practical advice on how to encourage small children to play games.

Theoretical considerations about games and their essence appeared, with some exceptions, as late as in the 19th century. Maňák (1997) indicates that also the Czech teacher, theologian, philosopher, social and religious thinker, priest and writer J. A. Comenius was a promoter of the idea of using games in school education through his work "Schola ludus". His approach emphasized that children are naturally active in the framework of learning. The English philosopher Herbert Spencer (1820-1903) believed that children play to the moment they are completely out of energy. He assumed that unusual verbal games during the day help children discharge energy. Instead, the German psychologist Karl Gross saw that a game is a kind of a functional exercise where a small child (like an animal cub) is preparing for future development. The Viennese physician and psychiatrist Sigmund Freud (1856–1939) discussed the importance of games in the early 20th century. He saw the opportunity to tap deep into personality by means of games, to learn about one's wishes and interests. He used games as a method for treating mental illness as well. Based on the assumption that human expressions and behaviour are determined by the amount of pain or pleasures bring, individuals repeatedly seek for pleasant experiences and try to avoid the unpleasant ones. During games, human behaviour and conduct do not have to conform to any external rules, they are motivated by the desires of the individual" (Freud, 2016). Freud also assumed that the game activities of children reflect their wishes and conflict directly or indirectly in symbolic action (Geoffrey, 1996).

A significant contemporary theory of game is represented by the theory of the Genevan psychologist Jean Piaget. He connects child's play with his/her intellectual development (Piaget & Inhelder, 2014).

The Dutch historian Johan Huizinga (1971) wrote that the purpose of games is, for example, to discharge energy, to practice those activities which will be operated seriously or provide vicarious satisfaction of desire which cannot be fulfilled in fact. According to Huizinga, a game is a kind of similarity or other facility to Freudian displacement (in this role, it would rivall with dreams). Huizinga, in his book Homo loudens (The Origin of Culture in the Game), set several characteristics which are topical even today:

- the game is a free negotiation, nobody can force me to play,
- it is the reflection of ordinary life in a temporary sphere of activity with own tendency,
- the game is closed spatially and temporally bounded,
- it is possible to repeat the game the whole game or a part of it,
- the game has specific rules and regulations,
- in the game, rhythm, harmony and tension can be found.

According to Huizinga (1971), games, as for their form, can be characterised by freedom of action as the activities stand outside the ordinary life, they do not bring any material interest nor any benefit. Games take place in time and space, are based on certain rules. They enrich the life of a social group which likes to surround itself by secrets. Games are played for each other and the group escapes from the real world.

We cannot agree with this definition and with the fact that nothing can be achieved by the application of games. By means of games, it is possible to practice a variety of skills (motor skills, memory, and creativity), and to simulate a variety of real life situations. One of the aims of games is to relax. Games increase the intensity of life and enrich human beings as personalities. By means of games, we can gain new experience and enrich our own lives.

It is necessary to appreciate the importance of games in teaching of children and give them a thoughtfully official space in school work as being an important educational resource. A game is an activity which entertains and is based on the intrinsic motivation of students that we need to promote. In contrast, learning and work are only forms of secondary motivation (Kalous & Obst, 2002; Kukal 2005; Sárkozi, 2005).

The authors of Pedagogical Dictionary – Průcha, Walterová and Mareš (1998) define a didactic game as an analogy to children's spontaneous activities with educational goals (for students it is not always obvious). It can take place in a classroom, in the gym, on the playground, in the village or in the countryside. The game has rules and requires management and final evaluation. It is designed for individuals as well as for groups of students. Educational leadership includes a wide range of roles from the role of the organizer to the role of the observer. The advantage is in awaking the interest in increasing the involvement of students in activities undertaken, stimulating their creativity, spontaneity, promoting collaboration and competition, forcing them to use different knowledge and skills, and to engage life experiences. Some educational games are similar to real life model situations.

According to Ďurič (1979), a didactic game is "a game with an educational goal". The goal of a didactic game is to develop the cognitive processes and intellectual abilities of a child and to expand his/her knowledge in an amusing way. The structure consists of the roles, activities and the rules of the game. The role of a game reflects the didactic summary and particular objectives, the form of activity which a didactic riddle should solve. Being entertaining and the attraction of activities are essential requirements. Games motivate children to solve didactic tasks; a game is not a didactic game without them. The rules of a game contain specific requirement for the activities which make them more

attractive and enjoyable. Compliance with the rules increases the efficacy of didactic games. Didactic games are designed especially for the purposes of preschool education but in their modified form, they can be massively applied in schools with older students and adults.

### **4** Didactic games as teaching methods

Lately, many innovative trends have emphasized the importance of the game as a teaching method. Using games for educational purposes has a long history (Montessori, 2014). Consistently, teachers use them at primary schools; they include them into the educational process with the goal to promote pupils' interest in learning and new knowledge (Skalková, 2007). Based on the efforts to introduce alternative approaches to teaching, this method has been applied more frequently in recent years. By the implementation of games, it is possible to solve common and complex learning tasks with students as games represent a strong motivation and stimulus for them` thanks to which they are able to mobilize their cognitive potential (Patersonová, 1996).

For teachers, preparation of classwork, in which the method of games is implemented, requires careful planning and considering the functional aspect, organization, content, material security, preparation and formation of students' groups. The game has its own place in all subjects. This is, of course, the didactic game but disturbing didacticism can be easily wiped in such games. (Rosecký, 2003).

It is undoubtably beneficial if a teacher uses a catalogue of games for his teaching subjects. In this card catalogue, he/she could sort the games according to certain criteria. He can sort them, for example, based on the impact of games on the development of creativity. In light of the impact of games, we distinguish between games that affect mobility, fluidity, originality and creation, design, production, organization, transformation, ability of novel expression, implementation, translation and transposition, combination, decision making, customization, and organization. There can also be exclusively methodical aspects (Kalous & Obst, 2002).

In professional literature, we can find a variety of educational games, for example various quizzes, competitions, or problem solving tasks – treasure hunt, searing for the tomb of the Pharaoh, Jumanji, and Scrabble (to make as many words from letters as possible). It provides a kind of cognitive training in general (this can also include free games – constructive and thematic) or is specifically focused on the acquisition, repetition and practice of the relevant curriculum (educational games and simulation).

Didactic games have a firm place in school education and represent a useful tool for teachers who do not perceive them as a waste of time. They recognize that appropriate classification reduces energy consumption to a great extent – mainly in the process of repetition and practice of the educational content. Didactic games contain the important element of self-realization in cognitive activities. Students learn to follow rules in the process of both didactic games and other games with rules. They support their socialization and lead to self-control. Teaching and cognition go through peacefully and with spontaneous interest which is important. In games, the culture of adult life is applied. Students have the opportunity to learn to deal with people throughout the game (Evangelu & Fridrich, 2009; Gentry & Burns, 2003; Hagoort, 2009).

The results of a game used as a didactic method always depend on the classroom climate but also on the creativity and the organizational skills of the teacher (Tamášová & Geršicová, 2014).

## **5** Outcomes and findings of analysis

The results of the questionnaire survey can be concluded that the participants would recommend to use the gaming method in secondary schools. This fact means that gaming methods are unlikely to be rejected. Whether the players' improvement is realized or not, the players would surely enjoy the games developing their skills.

Further interviews were conducted with the teachers of economic subjects. In its basic form, the scenario of the talks dealt with the question on the nature and benefits of secondary education from the perspective of the respondents. Further, we were interested in which kind of games is the most popular among students. Examples of games bring a concrete contribution to the development and education of students in secondary schools. The last question (according to the predetermined outline) was asked about another area of secondary education which should be used mostly in relation to gaming methods.

We noticed that the inclusion of gaming methods in secondary education was generally perceived as very important by all the five respondents. Specifically, games were referred to as offering the opportunity to solve problems from a different perspective, then as enriching the learning process. For example, the fact that games lead to an effective acquisition of new competencies or the detection of hidden personal qualities and skills, were considered the benefits of the method. Using games also showed other roles and behaviours and lead to the promotion of cooperation and defining the roles within the team.

Based on the findings above, we decided to design specific gaming methods which we recommend to include in teaching Management in secondary schools.

## 6 Concept of gaming methods for management teaching

Below, there are some examples of gaming methods which we implemented in the course Management in secondary schools (an advanced subject field). Those gaming methods are described in detail in Max.

- 1. *Mind maps:* A mind map is suitable for repeating and deepening knowledge on planning, setting goals and priorities in the work of managers. Process: the teacher writes in the middle of the board DETERMINATION OF PRIORITIES. Students say everything what they know about the notion. The teacher writes everything on the blackboard and, together with the students, makes connections in the mind map. Students actively improve their knowledge, visualise it, classify their knowledge systematically and discover new contexts. The teacher can change the key word, for example, for TIME MANAGEMENT or PLANNING THE TIME OF A MANAGER.
- 2. Brainstorming: Brainstorming within the frame of the theme "Communication and presentation skills of a manager". Process: For students, the objective is to detect a variety of communication competences of a manager. Another objective is to get to know how to communicate with each other. They use their current knowledge. The teacher encourages and motivates students to be creative, open and active. First, students work individually (each student writes his/her proposal within 5 minutes), then they discuss their ideas with other members of the group and then present them in groups to each other. The role of the teacher is to organize the ideas of students, and to define other key communication skills of managers together with students.
- 3. *Venn diagram:* Venn diagram in the frame of the topic "Monitoring and controlling".

Process: The task is to compare two terms: monitoring and controlling. Students draw two intersecting circles. In the first circle, they briefly write the characteristics of monitoring, in the second one those of controlling. In the intersection, there is a space for the common features. Students work individually or in pairs and then present their results to the class and the teacher. They define the common features and the differences between both terms together.

Cube method: The Cube method in the frame of the topic "Corporate culture - structure, level, formation and change".
Process: The teacher introduces students the topic of "Corporate Culture" (determined roll of the cube). The task of students is to write about the topic

within 2-4 minutes as it gives an instruction that "fell" on the block "1" describe, "2" compare, "3" associate, "4" analyse, "5" apply, and "6" argue. An example of the topic:

DESCRIBE: corporate strategy – what it is and what the function of the company is;

COMPARE: corporate culture and corporate image

ASSOCIATE: sanctions and bullying at the workplace;

ANALYSE: assumption making and changes in the corporate culture, corporate values, norms, symbols, patterns of behaviour, manners of company employees, company reputation;

APPLY: principles of a healthy corporate culture in schools;

ARGUE: why to create a healthy corporate culture.

5. Roundabout: Roundabout in the context of practicing and repeating the topic "Stress of a manager at work, how to face it and how to cope with it". Process: The teacher divides the class into two groups. One half of the students is sitting on chairs arranged in a circle. The second half of students forms a circle around them – they face out of the circle. Students sit in pairs and keep an eye-contact. Subsequently, the students in the inner circle are "visitors" and those in the outer one are "guests". Visitors are invited by the teacher to move to the next group in clockwise direction. After a certain period of time, the outer circle moves one step, so everyone gets a new partner. The role of hosts is to share information with new visitors. The discussions in the original composition give new information for the teacher. The visitors ask the hosts and inform them about new knowledge which they gained in the previous composition. After some time, visitors are asked to move to another group again. The hosts remain in their places. This process continues until the original group is formed again. The original members of the group discuss together again in the context of new knowledge which they acquired during the entire of carousel.

It is essential that teachers instruct students on how to implement this activating method. Students are divided into halves, then groups and circles. Each group enters a set of starter questions and comments on the papers. The teacher asks groups to process the questions quickly. The teacher continuously monitors time and makes sure that each group worked well. The teacher instructs the visitors to move to the hosts in a clockwise direction. After connecting with the original group, the teacher asks the students to re-discuss the issues starting with the newly acquired knowledge. In conclusion, there is a discussion across the group.

Examples of questions: - What is stress?

- What kind of stress it is? Provide some examples of stressors.
- How does a person react to stress?
- How to handle stress? Indicate the process.

- How can a manager help to avoid stress?
- 6. *6-3-5 Brain writing:* Using 6-3-5 Brain writing within the frame of the topic "Motivation and stimulation of employees".

Process: It is a special method which students enjoy. The role of the teacher is very important, being both the moderator and the evaluator. We use the 6-3-5 brain writing method, for example, with the theme of motivation and stimulation of workers. It is a kind of introduction used before presentation. The task for groups of students is to write "what are their motives at present and what is their positive motivation". Each student of the group produces three answers to the question, the ideas are written on a sheet of paper which is passed to their neighbour on the left side and take suggestions from the neighbour on their right hands. Each student writes other 3 ideas and then proceeds them until the moment when the sheet of paper gets back to the original owner and the discussion round ends (takes 5 min). The stage of evaluation enables teachers to differentiate between the concepts of motive and stimulus which, in our experience, students often use interchangeably or do not see any difference.

7. Additionally, we used marking and production of roles. Among the lengthier gaming methods, which develop basic management skills (soft skills) as team management, coordination, taking responsibility, ability to make decisions in stressful conditions rather than individual topics of education (hard skills), we used Abigail and Colour tower.

# 7 Results of the questionnaire survey on the use of the gaming method in teaching Management

By means of a questionnaire survey, we found out that 49% of girls responded to the questionnaire positively, 27% responded negatively and 24% responded that they do not know.

Almost half of the girls liked gaming methods and were interested in them. The girls positively evaluated the gaming models reflecting actual practice and found teaching through gaming methods interesting. The girls also perceived the gaming methods as a modern form of education positively. Girls negatively assessed the fact that the gaming methods did not motivate them run their own business after their graduation.

The questionnaire survey among a group of boys brought the following results: 48% of them responded to the questionnaire positively, 27% responded negatively and 25% did not know how to respond to the questions.

More than one half of the boys liked gaming methods and were interested in them. Boys positively evaluated teaching by using gaming methods. Boys

negatively evaluated the gaming method which did not reflect to the actual practice. Boys, as well as girls, rated the fact that the game did not motivate them to run their own business after school negatively.

#### 8 Conclusions

Gaming methods are one of the most attractive teaching methods of the 21st century. They are unique in the area of quantitatively-based capabilities in the field of business economics with a connection to decision-making skills in the field of management, teamwork and personal management as well as in the field of managerial psychology. In addition, it would be difficult to find practical experience of managing a real company in other types of educational activities, which in this regard, are a result of good conditions.

When using gaming methods, players are divided into teams which then act in certain roles. This mediates the players a lot of experience, offer the opportunity to develop talents and acquire the desired skills and knowledge. The team character of gaming methods implies an emphasis on interaction. On the other hand, it is an active form of collaboration for team members. Also, it is a process of communication, cooperation and competition between teams. Each game is divided into several stages representing a specific time period. It gives players the opportunity to get feedback and practise strategic decision making. The team which is the best in maximizing their profit is the winner.

One of the objectives of the presented paper was to define and describe gaming methods as used in secondary education. It was accomplished by the study of theoretical knowledge of this phenomenon in many professional publications and resources that combine andragogy knowledge with the practical use of gaming method in secondary education. These sources also revealed the fact that games are reflected in many areas of human life from childhood to adulthood and old age and that the concept is extremely subjective and based on various factors. There is no uniform definition of games as such or games within secondary education. As it emerged from several sources, the use of games can be primarily seen as children's activity, among other things, can serve as a form of leisure activities, after completion of their tasks and responsibilities, but in many cases, it may be just the game which helps us overcome problems with difficult situations in their personal and professional lives.

Huizinga (1971), Zapletal (1985) and Zapletal (1996) reflect on education and development. From their point of view, more broadly, games are understood as a source of entertainment and a form of relax, but also as a path of self-realization, education itself, fulfilling educational functions. A game can be helpful in

fulfilling various professional, personal and educational needs (Vaněk & Vaníčková, 2015).

In the context of a qualitative survey, the respondents confirmed that games form an integral part of the learning process. As well as secondary economic education has its specific elements, also gaming in secondary schools may have a specific shape and perform different functions. Among secondary school students who already know themselves, a very important psychological aspect of games is that they offer feedback which is an important mean of self-realization. This was also confirmed by the respondents of the survey because their experience showed that many students' motivation is very low in the beginning mainly because of various barriers, low self-esteem, shyness or the belief that games are only for kids. It is important to explain the benefits of games with respect to their practical use in one's personal and professional life. One is successfully drawn into an imaginary plane by the game's story and there are new roles and ways to find solutions to real problems.

As for the classification of gaming methods in secondary education, based on literature research, there is no uniform taxonomy and many authors or publications offer various divisions on the basis of different internal and external factors of the educational process. "Games" are, for example, applied in the teaching methods of simulation, role play, in the methods aimed at learning, problem solving etc. Hermochová (2004), Rachow (2005), or Wallenwein (2003) give a detailed description of the role of games and the possibilities of using gaming methods in teaching Management.

The importance of the topic of gaming in secondary education, its benefits and relationship to didactics and andragogy, etc. were confirmed in this work.

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