

Business Simulation Games in Forming of Students' Entrepreneurship

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BUSINESS SIMULATION GAMES are an effective method of learning how to manage the business processes in a modern enterprise. These kinds of games may also help to form and develop the enterprising attitudes and to learn the methods of modern management. For students, there is the possibility to be, e. g., a business manager who has to make decisions in the conditions of market competition. Starting to work as a manager, the graduate finds himself/herself in a situation, in which it is necessary to take the financial risk of own decisions. This is why it seems so important to use different forms of training for future managers. Business simulation games are evaluated differently by teachers and students. This paper includes a presentation of students' opinions about the simulation games as a teaching method and an analysis of their opinions.

ENTREPRENEURSHIP AND ENTERPRISING ATTITUDES

Many authors describe entrepreneurship in various contexts, e. g. in four dimensions consisting of: new business venturing, innovativeness, self-renewal, and proactiveness (Bhardwaj et al. 2007). It can also be understood as running a small company and a way of managing an organization. In this case, the term 'entrepreneurship' is usually used to describe small business, style of managing, establishing modern companies and implementing innovations in organizations (Serviere 2010). Hence, the aforementioned concept relates to the economic sphere. However, it is possible to specify other forms of entrepreneurship,

[50] such as social and political entrepreneurship as well as manifesting entrepreneurship in personal life. Another key way of understanding the concept of entrepreneurship refers to features possessed by an individual. In this case, it is a synonym for efficiency, courage, energy, enthusiasm and resourcefulness. Entrepreneurship is also understood as an individual's attitude towards life characterized by dynamism, inventiveness and a tendency to take risk.

Entrepreneurship is sometimes treated as a special ability, talent or even a kind of genius. However, in this context it is treated as an elite phenomenon that is available only for a small group of people. The unique character of such a type of entrepreneurship results in the fact that its shaping in the process of education has often limited scope and is characterized by specific conditions (Watson 2010).

Entrepreneurship is also a social and economic phenomenon related to certain types of active behaviors taken up by individuals within the frames of a given community. An innovative approach, searching, creating, identifying and using the opportunities that emerge in the environment are the substance of these behaviors. Therefore, such an active attitude does not necessarily have to be connected with the creation of a new organization (Mitchell et al. 2000).

The assumption that entrepreneurship is the realization of an activity on large scale, and of showing initiative in an organization, is one of the most commonly accepted interpretations of the analyzed concept. In this context, entrepreneurship is an activity that can be realized by means of acquired skills, such as: formulating aims, planning, creative thinking, making decisions, analytical skills, permanent studying or implementing changes among others (House et al. 2004).

Entrepreneurship is also identified with innovation. According to Drucker, innovation is a special tool of entrepreneurs by means of which they are able to convert a change into an opportunity for taking up new business activities or providing new services. Drucker claims that entrepreneurs should purposefully search for sources of innovations, changes and their symptoms that indicate an opportunity for effective innovation (Drucker 2006).

In the theory of economics, entrepreneurship is defined as a special form of labor or a fourth (together with labor, land and capital)



production factor. Entrepreneurship, understood as a form of labor (labor has an enterprising character), assumes achieving material goals (such as money, profit and prosperity) as well as non-material goals (the need for power, success and independence).

It is necessary to mention the simplest, yet equally important, way of understanding the concept of entrepreneurship. It is a discipline of didactics and realization of the educational process in order to teach course participants and students ways of coping with existence in a complex economic reality (Aldrich and Martinez 2001). [51]

The number of the aforementioned definitions of entrepreneurship shows a great number of aspects of this phenomenon. Entrepreneurship is a concept that is most commonly understood either as an organized process of activities that, in given conditions, is oriented to the use of an innovative idea in order to generate profits on the market or as a group of features describing specific ways of human behavior.

Some authors attempt to mutually combine the aforementioned definitional aspects. For example, Tarkowski (2003) defines the substance of individual entrepreneurship using the following formula:

$$E = f(M, F, K, A), \quad (1)$$

where: E – entrepreneurship, M – motivation, F – features of personality that are conducive to entrepreneurship, K – interdisciplinary knowledge, and A – action.

If entrepreneurship is understood as a feature, then the enterprising individual is characterized by (Strojny 2007; Baker, Gedajlovic, and Lubatkin 2005):

- need of success,
- inner controllability,
- high intellectual capabilities.

Moreover, an enterprising individual is immune to the influence of others and, thanks to creativity and an ability for fast learning is able to cope with difficult situations. The aforementioned attributes of entrepreneurship manifest themselves in the professional and non-professional activity of an enterprising individual and together they are the core of the enterprising attitude.

Glinka (2008) and Handzel (2007) attempted to characterize an enterprising individual by attributing the following features to him/her:

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- need for achievements,
- readiness for taking over the initiative,
- ability to tolerate uncertainty in making decisions and the tendency to take a risk,
- ability to conduct a reliable market analysis and forecast,
- spreading enthusiasm and commitment among others,
- perception and use of opportunities,
- dynamism, activeness and innovative approach.

Entrepreneurship is also characterized by expansiveness, understood as a willingness to match the best and the strongest, and setting ambitious goals in order to gain higher profits.

The aspect of origin of enterprising features is very interesting from the point of view of the entrepreneurship theory. Theoreticians and pragmatists of the entrepreneurship phenomenon attempt to make assumptions about whether entrepreneurship is an inborn feature or whether it is acquired in the process of human life (Schick et al. 2002).

Nowadays, a belief prevails that a person does not have inborn entrepreneurship and acquires it only thanks to education, own experiences and interpersonal relationships. According to P. Wachowiak (2007), the shaping of enterprising attitudes is a very complex and difficult task. It requires many efforts from the person who wants to be enterprising and from other people who have an influence on him/her. Nevertheless, the enterprising attitude can be shaped. It is only a matter of willingness and knowledge of how to do it.

J. Strojny (2007) described the process of shaping the enterprising attitude and emphasized the role of micro and macro environment. Society educates and socializes an individual by values, norms and models and this eventually leads to shaping an individual hierarchy of values and needs. In turn, these manifest themselves in actions that are taken by an individual.

In his deliberations, Tarkowski (2003) indicates a certain type of social entrepreneurship. Its essence is defined by the following formula:



$$SE = f(A, M, C, P, R), \quad (2)$$

where: SE – social entrepreneurship, f – function, A – social attitude towards entrepreneurship and entrepreneurs, M – personal models, C – economic conditions, P – social policy, R – legal regulations.

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The author defines the main sense of social entrepreneurship as a function of attitude, economy, social policy and law. Social attitudes enable the creation of a good or bad atmosphere for entrepreneurs (Shavit and Yuchtman-Yaar 2001). It is determined by many factors, such as: educational system, social and economic system, religion, culture and social aspirations (Spencer and Gomez 2004).

The system of student education seems to be the key factor. It is usually a group of very creative, active, dynamic and open-minded individuals. It is often characterized by ambition and courage. The students have the greatest potential in the development of modern economy. It is they who have the chance and need for realizing their dreams of being entrepreneurs.

The aforementioned groups of features and behaviors are usually similar among many enterprising individuals. However, they can vary in terms of field of activity, motivation, financial risk that is taken, the need for security and attitude towards ownership. These criteria were used to create a typology of enterprising individuals (Tarkowski 2003).

There are six main types of such individuals, i. e.: enterprising manager, entrepreneur, social activist employee, activist and criminal.

- The Enterprising manager acts in the field of organizations management. His/her main acting motive is the need of power and promotion without taking any financial risk and he/she feels safe because of the fact that he/she manages someone else's money.
- The Enterprising entrepreneur runs his/her business activity that is oriented to gaining profit and risks his/her own wealth. The Entrepreneur possesses enterprising features and takes enterprising actions.
- The Enterprising employee is present in every sector of the economy. He/she desires to achieve success in an organization, values approbation of others and accepts moderate risk. The

Enterprising employee values the need of safety more than financial profits.

[54]

- The Entrepreneur activist acts, among others, in politics, sport, education, public health service. He/she is driven by career and tries not to take any risk in his/her enterprises.
- The Enterprising criminal acts in almost every possible field of activity. He/she is oriented towards a rapid and often unfair profit. The Enterprising criminal has a strong sense of real ownership and is often distinguished by the lack of ethical values.

From the point of view of the issues considered in the presented article it can be assumed that two types of the aforementioned enterprising individuals play the key role in business – enterprising manager and enterprising entrepreneur (McDougall and Oviatt 2002).

Therefore, it is important to mention that external factors have a significant influence on shaping enterprising features and attitudes mainly in the two fields indicated above. The social, institutional, cultural and, in particular, the research environment in which an individual is functioning plays extremely important role in the development of his/her enterprising attributes. They also affect innovative enterprises oriented to success that are undertaken by him/her (Teal and Hofer 2003).

However, the external environment has both positive and negative influences. Theory and practice are full of opinions that block enterprising attitudes (Acs et al. 2004). Such myths functioning in the environment contribute to slowing down and impeding the development of entrepreneurship in the micro and macro environment. However, these myths are easy to explain and challenge.

These are the most commonly recalled myths (Bratnicki, Dyduch Gabryś 2007):

- one has to be born an entrepreneur, therefore enterprising behavior cannot be learnt (Watson 2010),
- an enterprising individual can be distinguished by some specific features creating a standard profile,
- enterprising individuals are vigorous, lonely wolves who cannot cooperate with others and try to do everything on their own,



- enterprising individuals are people who pursue power and the ability to control others,
- entrepreneurs are driven only by money, only rapid bonuses count.

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To conclude, the aim of educational activities taken by academic centers should be focused on elimination of myths functioning in local environments concerning entrepreneurship as well as showing beliefs stimulating enterprising attitudes. Realization of such a direction of activities by higher education institutions can be carried out by preparing students to adopt enterprising attitudes as a result of the implementation of modern didactic tools, namely business simulation games, into their educational system (Mueller et al. 2008).

BUSINESS SIMULATION GAMES AS A STUDENTS' EDUCATION METHOD

Research on modern students' education methods and techniques proves that education based on practical usage of knowledge and training in a target activity environment is the most effective. Depending on the discipline, an environment can have real character, i. e. it exists in reality, or a virtual character, i. e. it comes into being through simulation of real phenomena. In many fields of activity, such as business, the usage of simulation games is one of the most popular ways of education.

The idea of using business simulation games (BSG) is not new. These kinds of games have been used in business education since 1950. In conjunction with the rise of case-based approaches (Bransford et al. 1990) and experience-based learning theories (Wolfe 1993), they have created a new concept of business teaching using experimental methods.

Simulation games reflect a selected fragment of reality with a specified precision. The better the reality imitation in a game is, the more the phenomena and higher level of relations complexity between them are encompassed by its scenario. It enables faster and later transfer of the experiences of game participants directly to their target work environment.

[56] Simulation games are considered to be the most interesting and the most engaging forms of education. According to Nemerow (1996, 365), 'Although playing games in the classroom does not solve all of the problems with education, it can be a useful tool, one of many different methods and techniques used to involve students with their learning.' A well-designed game results in the fact that its participants are so strongly engaged that they feel as if they were in a real world. The game becomes a real and profound experience on the basis of which they learn new behaviors, skills and competences in specific cases that may occur in the real world.

According to Faria (1998) in 1998 in the United States there were more than 200 business games in use at more than 1,700 universities. Today the number of games is probably much higher. Such great popularity of simulation games in business education in the USA results from the practical implementation of their results in reality.

The following list presents the advantages of BSG used as a didactic tool:

- interesting way of learning, because the students may gather or examine the knowledge while playing the game,
- acceleration of the learning process through the active individual engagement of players,
- possibility to observe progress in the development of skills and improvement of qualifications,
- connecting the knowledge from different areas of business,
- strong motivation of the game participants towards active learning instead of passive receipt of lectures' content,
- shaping the skills of knowledge usage in practice,
- interactive character that enables players to quickly obtain information about the results of their decisions.

Research on the usage of simulation games in students' education proves that a well-designed game should actually reduce the class time needed to teach a particular concept (Heineke and Meile 2000).

The aforementioned didactic tool also has certain disadvantages, a list of which is presented below:



- the game scenario is a model of reality, that means it is created with some simplifications,
- decisions in the simulation game are made without any responsibility, the game's outcomes don't influence the situation (i. e. financial) of the player or other people in the real world,
- the game describes only some chosen aspects and phenomena from reality, so education is limited only to this area of knowledge or kind of skills which has been taken into consideration in the game scenario,
- the players in most cases are mature people who treat the game rather as an entertainment than as education,
- because of the lack of responsibility for decisions and perceiving the game as a fun, behaviors of game participants may differ significantly from their behaviors in real life.

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According to Feinstein (2002), the disadvantage of simulation games is caused by the fact that 'the participants cannot observe the impact of those decisions on competitors and of the external constituencies until a round in the business game is completed, neither can the participants representing different companies interact with each other during the decision round in the game.'

There are two types of games: open and closed. The main purpose of the closed games is to transfer knowledge. Their result is known from the beginning. The participant of such a game knows the way of achieving a planned result, and the game itself is supposed to prove that such a solution allows that goal to be reached. On the other hand, the final result of the open games is not known and their course is not strictly defined. The result of the game depends on its participants and their actions and decisions. Such a game has a dynamic character because it sometimes allows one to obtain unpredictable results. The open games play a particularly important role in shaping those attitudes that are the subject of the participants' education, e. g. the basics of entrepreneurship.

These are the potential results of game participation:

- evaluation of the correctness of business solutions (business decisions) or verification of the theoretical knowledge in practice,

[58]

- sensitivity evaluation of game outcomes on changes of business decisions taken,
- knowledge gathering during playing,
- the usage of knowledge from different areas of business (e.g. finance, marketing, human resources, other resources).

The place of simulation games in the area of education depends on the purpose of their usage. Should the game be used to arouse students' interest in a given subject and indicate the most important issues from a selected area of knowledge, then it is necessary to start implementing it from the very beginning of the education process. In cases when the game is used as a tool for shaping desired features and behaviours, the right time of its usage is the moment when participants already have some knowledge but cannot use it properly. However, if the game is supposed to verify possessed knowledge, possibility of its implementation or other skills such as analytical thinking or working against the clock, it should be used at the very end of the education process.

B S G S enable their participants to acquire the following skills:

- the usage in practice of the business rules known from the theory,
- strategic and analytical thinking,
- ability to work in a team,
- interpersonal communication,
- working in the conditions of hard competition and under time pressure,
- effective activity in the situation without full information.

The success of usage of the simulation game as an education tool depends on actions taken throughout the entire cycle of its life. The cycle consists of three stages: game project, scenario realization and evaluation of game results. The game project stage plays a key role in the success of the whole education process based on a simulation game. Actions significantly affecting the possibility of achieving a target goal of such a type of education during that stage include:

- identifying the proper area in which it is possible to implement the simulation game;



- indicating potential game participants;
- indicating the proper moment of game implementation in the whole cycle of education;
- defining game character, i. e. whether it is the key element in the process of education or its supplementation;
- indicating technical possibilities of game realization by selection of proper technologies, usually information technologies, as well as the way of visualizing of the game course and results;
- creating a game scenario that includes established education goals (such as defining business models used and working algorithms, time and the precision of imitation of reality).

[59]

The following factors decide the success of usage of the game as a didactic tool during the stage of game scenario realization:

- acquainting the game participants with the goal of the game,
- clear presentation of game rules,
- presentation of the instruction manual of application for realizing the game (description of user interface),
- the proper division of game participants into groups (type of groups and number of participants in every group) which, depending on the game character, will cooperate or compete with each other,
- type and level of involvement of a game arbiter in the course of the game.

During the last stage of the life-cycle of the game, i. e. the stage of result evaluation, it is necessary to take into consideration the following activities that allow one to achieve success:

- general assessment of the game course, its results and evaluation of level of goal or goals achievement by the arbiter,
- a profound analysis of the acting strategy of individual game participants and the effect they have on the game result conducted in a direct contact between the arbiter and the participant,
- actions self-assessment carried out by every player leading to developing better and better decisions in the future (the next game stage).

The participation in the game also allows one to identify certain enterprising attitudes of the players. These attitudes encompass:

[60]

- tendency to take a risk for potential future benefits,
- leadership,
- determination to reach business goals,
- creativity and innovative approach,
- attitude to development of own skills and gaining vocational experiences,
- willingness to cooperate with others in business activity.

It is widely acknowledged that the usage of simulation games in business education has a huge potential. Faria and Wellington (2004) surveyed the usage of simulations among the business faculty members across all disciplines among member schools of the American Association of Collegiate Schools of Business. He reports that among 1,085 respondents, 30.6% were current business game users, 17.1% were former game users, and 52.3% were never-users of business games. Simultaneously, their high effectiveness in the education process is emphasized. According to research carried out by Trapp et al. (1995) among students of the Agricultural Economics Department of Oklahoma State University, simulation games were given an average mark of $M = 6.72$ with a standard deviation $SD = 0.67$. The next ones were the case analysis ($M = 5.55$ and $SD = 0.7$), experimental education ($M = 5.39$ and $SD = 0.54$) and traditional lecture ($M = 5.32$ and $SD = 0.47$).

The aforementioned data prove that simulation games can be used as an effective tool in students' education, particularly in the field of entrepreneurship.

ANALYSIS OF BSG USEFULNESS IN SHAPING
ENTERPRISING ATTITUDES ON THE BASIS OF
EMPIRICAL RESEARCH

The Purpose of the Research

The main goal of the conducted research was assessment of the usefulness of simulation games in education. The authors of the present article have focused particularly on assessment of the usefulness of simulation games in shaping enterprising attitudes. Another goal was



the examination and presentation of opinions concerning the usefulness of simulation games in shaping enterprising attitudes.

The research was conducted in order to gain knowledge about opinions of students participating in the simulation game within the scope of possibilities of usage of BSG in shaping enterprising attitudes. The authors of the research assumed that the questionnaire would be conducted among a group of individuals who actively participate in the simulation game. The questionnaire would be filled out directly after the ending of the game.

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The research conducted in the International School for Social and Business Studies in Celje, Slovenia, was realized within the framework of the Leonardo da Vinci 2010-I-PLI-LE 003-10279 project. The main idea of the project assumes that the research should be carried out in four centers: Slovenia – Celje, France – Pierre Mendès France University, Spain – University of Alicante, and Poland – College of Enterprise and Administration in Lublin. The article contains results from the first stage of research from Slovenia which will be compared with the results from other centers in the future.

Research Method and Tools

The research method that was used was a questionnaire. It was created on the basis of the conducted literature survey and it contained a group of enterprising features. Such a type of tool was selected because of the possibility of reaching a larger research group, specifically 45 persons in Celje (Slovenia), in a fast and anonymous way. The authors have prepared the questionnaire in the form of a printout to be filled out individually by the respondents.

The questionnaire consisted of 11 questions, 8 of which concerned the issues of simulation games and their role in shaping enterprising attitudes. Three additional questions were attached to a certificate characterizing the respondents. The main part of the questionnaire was divided into two research fields. One of them included the assessment of simulation games as an education tool (4 questions). Another concerned the assessment of possibilities of BSG usage in education, oriented to shaping enterprising attitudes (4 questions).

The questions were closed and of a single or multiple choice charac-

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ter. The scale of answers encompassed four levels: very important (very significant), important (significant), not very important (not very significant) and unimportant (insignificant). The article does not contain detailed statistical analysis; this will be conducted after all of the scheduled survey sessions have been performed. However, the article does contain information on the percentage of participation illustrated in columnar diagrams and based on integrated data (cumulated results from the very important/very significant column and the data from the important/significant column). The purpose of such a combination during this stage of the analysis was to visualize tendencies in opinions concerning the usage of simulation games in shaping enterprising attitudes in a better way.

Research Sample

The research was carried out on 5th July 2010 at the International School for Social and Business Studies in Celje on a group of 45 persons participating in classes within the framework of the Summer School. Every respondent took part in a simulation game and had an opportunity to express their opinion in the research questionnaire directly after the end of the game. Therefore, the answers provided by the respondents encompassed experience gained from real participation in the simulation game.

41% of the respondents were women while 59% were men. The majority of the respondents (59%) recognized themselves as enterprising individuals. More than a half of the respondents had not run their own business, but they confirmed that members of their families were entrepreneurs. Almost $1/4$ of the surveyed were willing to establish their own company in future. The large number of respondents (71%) stated that the usage of simulation games in education may contribute to increasing their chances on the labor market.

Results

According to the participants surveyed, the particularly significant features of enterprising attitude (table 1) are: innovative approach and creativity (94%), determination in achieving business goals (93%), abilities concerning managing soft and hard resources (92%) and nego-



TABLE 1 Features which an entrepreneur should possess (%)

Feature	(1)	(2)	(3)	(4)
Finance profit orientation	29	59	12	0
Career need	18	41	41	0
Power need	24	41	29	6
Fame and acknowledgement need	18	53	24	6
Will to take a risk	59	41	0	0
Enlargement of once fortune	24	59	18	0
Skills of management of human, financial resources	35	57	8	0
Negotiation skills	50	41	9	0
Innovativity and creativity	59	35	6	0
Inner motivation	65	29	6	0
Determination to achieve the business goals	53	40	7	0

[63]

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

tiation skills (91%). The following features were also found significant: financial orientation (88%), increasing incomes (83%), willingness to take risk (100%) and needs connected with the professional career (59%).

The respondents were also supposed to assess the impact of simulation games on shaping enterprising attitudes. As many as 83% of the respondents stated that the following enterprising features shaped during simulation games are important: an opportunity to develop competences in new fields of business (which can have an impact on creativity and innovative approach in business) and creation of the need to achieve market success (table 2). A large number of respondents (88%) mentioned the importance of shaping attitude of players to take risk.

The aforementioned answers correspond with the question concerning attitudes that can be identified through participation in the BSG (table 3). The players' tendency to take risk was the most commonly indicated (95%), because it seems obvious that many people find it easier to make risky decisions on the level of the simulation game. Determination in achieving business goals (91%) and the possibility to display leadership features, which were found crucial for

TABLE 2 The significance of features of the business simulation game that allowed for shaping the entrepreneurial pose (%)

Feature	(1)	(2)	(3)	(4)
Inspires to establish and run own business	18	47	35	0
Makes aware of the gap in the knowledge and skills in business area	24	53	24	0
Forces the need to complete lacking business knowledge	18	65	18	0
Shapes competences in different business areas	12	71	12	6
Generates the need of success reaching	24	71	0	6
Verifies the tendency to take a risk	35	53	12	0

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

TABLE 3 The importance of poses that may be identified by participation in the business simulation game (%)

Pose	(1)	(2)	(3)	(4)
Tendency to take a risk	33	62	5	0
Disclosure of leadership features	19	76	5	0
Determination to reach the business goals	48	43	5	5
Creativity and innovativity	24	38	33	5
Attitude to personal development	19	57	19	5
Cooperation orientation	19	71	10	0

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

an entrepreneur, during the game (95%) were assessed equally high. However, it seems to confirm an assumption that enterprising features might be displayed, shaped or improved during education with the use of simulation games.

The Selection of two answers concerning the skills that might be shaped when participating in simulation games (table 4) was found obvious for an respondents: strategic thinking (100%) and information analysis (100%). Slightly less frequently indicated were the following abilities: teamwork (95%), possibility of confronting theoretical knowledge with business practice (90%), interpersonal communication (86%) and working in conditions of strong competition (86%). The following abilities were also found important: possibility of fast



TABLE 4 The importance of skills that may be shaped by participation in the business simulation game (%)

Skill	(1)	(2)	(3)	(4)
Implementation the theoretical knowledge in business practice	33	57	10	0
Strategic thinking	52	48	0	0
Information analysing	48	52	0	0
Team working	52	43	5	0
Interpersonal communication	29	57	14	0
Fast adaptation to the market requirements	19	62	19	0
Working under time pressure	14	62	14	10
Solving crisis situations	19	52	29	0
Working in the conditions of hard competition	24	62	14	0

[65]

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

adaptation to market needs (81%), working against the clock (76%) and necessity of coping with crisis situations (71%). The indicated skills are also reflected in the assessed structure of enterprising attitude: the most frequently indicated were management skills (94%) and negotiation skills (91%), determination in acting (93%) as well as innovative approach and creativity (94%).

When assessing the results of simulation games (table 5), the respondents' evaluation of conscious broadening of knowledge, confronting it with practice, implementing it in various fields of business and transferring it among the game participants (indications between 76% and 86%) reached very high, almost identical, scores.

However, the respondents also indicated some disadvantages connected with usage of simulation games in education (table 6). The most significant disadvantages indicated by the most numerous group of the respondents were: simplification of reality in simulation games (76%) and hardware requirements (67%). However, these limitations can be overcome on the level of scenario construction by gradual modernization of the hardware platform. More than a half of the respondents are anxious about the limited possibilities of using simulation games in education (58%), different behaviors of the participants towards the real world (58%) and treating the game just as an entertain-

TABLE 5 The importance of results that may be achieved by participation in the business simulation game (%)

Result	(1)	(2)	(3)	(4)
Making one aware of lack of knowledge in particular business areas taken into account in the game	24	62	10	5
Verification of the theoretical knowledge in practice	19	67	14	0
Current knowledge complementation during playing	19	57	24	0
Using of knowledge from different areas of business (finance, marketing, human resources, other resources)	33	52	14	0

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

TABLE 6 The significance of disadvantages of the business simulation game as a didactic tool (%)

Disadvantage	(1)	(2)	(3)	(4)
Considerable simplification of reality	19	57	19	5
Lack of player's responsibility for his/her decisions	19	38	29	14
Necessity of engagement of area and hardware resources	10	57	24	10
Limitation of education to the scope of the game	10	48	38	5
Game is treated rather as an entertainment than as education	0	48	19	33
Behaviours and poses of game participants differ significantly from their behaviours and poses in real life	10	48	38	5

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

ment (48%). These concerns probably result from incomplete awareness about the possibilities offered by participation in the game. Most of the adults are rather familiar with more traditional forms of education, such as lectures. It is a static form for a participant that gives him/her a certain kind of safety. On the other hand, passive behaviors in the game are either impossible or are immediately reflected in its results. It is possible that anxiety about treating the simulation game as an entertainment results from a certain simplification that an adult should be treated seriously. Therefore, a different form of education that stimulates activeness and creativity (namely simulation game) is often treated with anxiety and sometimes can even be rejected.

The participants also indicated advantages of simulation games (table 7). The maximum score (100%) was gained by the statement that



TABLE 7 The significance of advantages of the business simulation game as a didactic tool (%)

Advantage	(1)	(2)	(3)	(4)
Interesting way of learning	57	43	0	0
Recognition of market rules	33	48	14	5
Interdisciplinarity	24	67	5	5
Motivates the game participants to active learning	67	29	5	0
Shapes the skills of knowledge usage in practice	38	43	19	0
Enables players to quickly get a feedback on the results of their decisions	57	33	10	0

[67]

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

simulation games are an interesting form of education. The remaining indicated advantages were also: interdisciplinarity (91%), possibility of gaining fast feedback about results of decisions made (90%) as well as recognition of market rules (81%) and possibility of shaping the skills in practice (81%). Motivation of the participants for active learning during simulation games reached the score of 96%.

In the context of the aforementioned enterprising features, interdisciplinarity seems very important, as it may create an opportunity for shaping abilities of soft and hard management. Motivation of the participants to active learning which can result in shaping of teamwork skills, displaying leadership abilities or motivation for self-realization is also considered important. An advantage, in the form of fast feedback concerning the results of decisions taken, has great significance in shaping the ability for correct interpretation of market signals.

To recap, the conducted research indicated the following features of simulation games which have great impact on their usefulness in forming enterprising attitudes: shaping innovativeness and creativity, assessing the ability to take risk, shaping determination in achieving set goals, making decisions based on financial motivation criteria, improving hard and soft managerial skills.

CONCLUSIONS

To conclude, it is necessary to emphasize that results of the research conducted among students indicate high interest in BSG as a form of

[68] education. The majority of respondents perceive the advantages of education based on participation in simulation games and justifying the use of such a tool in education oriented to shaping enterprising attitudes. It can be assumed that BSG are perceived as an interesting and desired form of gaining experience that can be used in later professional practice.

However, according to the authors, the results of the conducted research allow for some suggestions to be made, the purpose of which is to increase an effectiveness of the use of BSG in education. These suggestions will be addressed to two subjects, i. e. individuals teaching with the use of BSG and to designers of such games.

The research results prove that almost half of the respondents perceives the game only as a form of entertainment, not a form of education. It is also surprising that $1/4$ of the respondents do not treat participation in the game as an opportunity for gaining knowledge and treat the game only as a way of its testing. In both cases, the desire for changing such a way of perception of simulation games is a very important task for a teacher who has direct influence on shaping attitudes of students towards education with the use of such games. His/her actions should be focused on preparing students for the classes in a proper way and on evaluation of BSG participants that would encompass results obtained throughout the game. The teacher should indicate the possibility of personal development through participation in the game and make participants aware of the profits resulting from that form of education. His/her task should also be a purposeful and conscious use of BSG at the proper level of education (during the early stage – education, during the final stage – verification of skills and knowledge) as well as adapting the complexity of the game to competences of its participants.

Another important suggestion addressed to teachers concerns the need for current monitoring of adequacy of the games to market reality and proposing their updating for models imitating the current or predicted market situation. The use of an obsolete (outdated) model can lead to permanent and negative opinion of the game participant about this form of education.

In order for the simulation games to meet the requirements im-



posed for the didactic tools, they have to be extremely precise in imitating market realities. However, $\frac{3}{4}$ of the respondents claim that simulation games simplify the reality too much. This fact is a source of suggestions for a subsequent subject, i. e. game designers, so that business models may be built to more realistically reflect the market situations. Moreover, a properly designed game should allow one to generate results that would show its participants the increase in the knowledge gained during the game in the normal course (during the game).

[69]

Almost $\frac{1}{5}$ of the respondents do not acknowledge the possibility of transferring benefits resulting from participation in the game to actions taken in business practice. The observation that the same number of respondents do not treat BSG as a tool facilitating acquaintance with market mechanisms seems to be particularly significant. These facts might be a hint for the game designers that it is necessary to update the model of reality used in the game, not only in a context of its better imitation (precision of the model) but also adjusting the model to a current market situation (adequacy of the model).

The authors cherish the hope that the obtained research results and suggestions resulting from them will give hints about the lines of the actions that should be taken in the future in order for the simulation games better to prepare students for activity in the field of entrepreneurship.

REFERENCES

- Acs, Z. J., P. Arenius, M. Hay, and M. Minniti. 2004. Global Entrepreneurship Monitor 2004: executive report. Babson College and London School of Business.
- Aldrich, H. E., and M. A. Martinez. 2001. Many are called, but few are chosen: An evolutionary perspective for the study of entrepreneurship. *Entrepreneurship Theory and Practice* 25(4): 41–56.
- Baker, T., E. Gedajlovic, and M. Lubatkin, M. 2005. A framework for comparing entrepreneurship processes across nations. *Journal of International Business Studies* 36:492–504.
- Bratnicki, M., W. Dyduch, and B. J. Gabryś. 2007. Mity przedsiębiorczości w polskich organizacjach: Diagnoza i mechanizmy ożywiania potencjału przedsiębiorczości. In *Kształtowanie postaw przedsiębiorczych*

- a edukacja ekonomiczna*, ed. P. Wachowiak, M. Dąbrowski, and B. Majewski, 24–32. Warsaw: Fundacja Promocji i Akredytacji Kierunków Ekonomicznych.
- Bhardwaj, B. R., K. Momaya, in K. Sushil. 2007. Corporate entrepreneurship: Application of moderator method. *Singapore Management Review* 29 (1): 47–58.
- Bransford, J. D., R. D. Sherwood, T. S. Hasselbring, C. M. Kinzer, and S. W. Williams. 1990. Anchored instruction: Why we need it and how technology can help. In *Cognition, education and multimedia: Exploring ideas in high technology*, ed. D. Nix and R. Spiro, 115–41. Hillsdale, NJ: Erlbaum.
- Drucker, P. 2006. *Innovation and entrepreneurship*. Toronto: HarperCollins Canada.
- Faria, A. J. 1998. Business simulation games: Current usage levels – an update. *Simulation and Gaming* 18:295–308.
- Faria, A. J. and W. J. Wellington. 2004. A survey of simulation game users, former-users, and never-users. *Simulation and Gaming* 35:178–207.
- Feinstein, A. H., S. Mann, and D. L. Corsun. 2002. Charting the experimental territory. *Journal of Management Development* 21 (10): 732–44.
- Glinka, B. 2008. *Kulturowe uwarunkowania przedsiębiorczości w Polsce*. Warsaw: Polskie Wydawnictwo Ekonomiczne.
- Heineke, J., and L. Meile. 2000. Classroom service games. Presentation at the Decision Sciences Institute Annual Meeting, Orlando, FL.
- House, R. J., P. J. Hanges, M. Javidan, P. W. Dorfman, and V. Gupta. 2004. *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Thousand Oaks, CA: Sage.
- Hendzel, D. 2007. Możliwości kształtowania postaw przedsiębiorczych w organizacji gospodarczej. In *Kształtowanie postaw przedsiębiorczych a edukacja ekonomiczna*, ed. P. Wachowiak, M. Dąbrowski, and B. Majewski, 17–23. Warsaw: Fundacja Promocji i Akredytacji Kierunków Ekonomicznych.
- McDougall, P. P., and B. M. Oviatt. 2000. International entrepreneurship: The intersection of two research paths. *Academy of Management Journal* 43:902–8.
- Mitchell, R. K., B. Smith, K. W. Seawright, and E. A. Morse. 2000. Cross-cultural cognitions and the venture creation decision. *Academy of Management Journal* 43 (5): 974–93.
- Mueller, J., N. Nuruddin, J. Thornton, V. West, and R. Min. 2008.



- Entrepreneurship teaching in action: The effects of early empowerment. *Journal of Business and Entrepreneurship*, March.
- Nemerow, L. G. 1996. Do classroom games improve motivation and learning? *Teaching and Change* 3 (4): 356–66.
- Schick, H., S. Marxen, and J. Freimann. 2002. Sustainability issues for start-up entrepreneurs. *Greener Management International* 38 (Summer): 59–70. [71]
- Serviere, L. 2010. Forced to entrepreneurship: Modeling the factors behind necessity entrepreneurship. *Journal of Business and Entrepreneurship*, March.
- Shavit, Y., and E. Yuchtman-Yaar. 2001. Ethnicity, education, and other determinants of self-employment in Israel. *International Journal of Sociology* 31 (1): 59–91.
- Spencer, J. W., and C. Gomez. 2004. The relationship among national institutional structures, economic factors, and domestic entrepreneurial activity: A multicountry study. *Journal of Business Research* 57:1098–107.
- Strojny J. 2007. Kształtowanie postawy przedsiębiorczej – procesy socjalizacji i autokreacji, In *Kształtowanie postaw przedsiębiorczych a edukacja ekonomiczna*, ed. P. Wachowiak, M. Dąbrowski, and B. Majewski, 205–11. Warsaw: Fundacja Promocji i Akredytacji Kierunków Ekonomicznych.
- Tarkowski, Z. 2003. *Test przedsiębiorczości*. Lublin: Orator.
- Teal, E. J., and C. W. Hofer. 2003. The determinants of new venture success. *The Journal of Private Equity* 6 (4): 38–51.
- Trapp, J. N., S. A. Koontz, D. S. Peel, and C. E. Ward. 1995. Evaluating the effectiveness of role playing simulation and other methods in teaching managerial skills. *Developments in Business Simulation & Experiential Exercises* 22:116–23.
- Wachowiak P. 2007. Kształtowanie postaw przedsiębiorczych. In *Kształtowanie umiejętności przedsiębiorczych a edukacja ekonomiczna*, ed. P. Wachowiak, M. Dąbrowski, and B. Majewski, 146–52. Warsaw: Fundacja Promocji i Akredytacji Kierunków Ekonomicznych.
- Watson, G. 2010. DNA of an entrepreneur. [Http://www.dnaofanentrepreneur.com](http://www.dnaofanentrepreneur.com).
- Wolfe, J. 1993. A history of business teaching games in English – speaking and post-socialist countries: The origination and diffusion of a management education and development technology. *Sage Social Science Collections* 24:446–63.