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**THE USE OF BUSINESS GAMES IN RUSSIAN HIGHER
EDUCATION: PREREQUISITES AND OBSTACLES**

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Abstract

The paper studies serious games as a learning tool in the context of post-industrial society. It shows that the use of business games helps to simulate real-world scenarios, requiring students to make creative, independent and responsible decisions under stress and uncertainty. The research addresses objective prerequisites for the use of business games in higher education and demonstrates that the method drives individualisation, enhances the quality of training and the level of student engagement, identifies potential entrepreneurs and develops entrepreneurial skills. The paper looks at obstacles in the use of serious games and the associated challenges. The “escape from freedom” is a fundamental philosophical and psychological problem, which can be solved only by a change in the overall learning paradigm. The lingering influence of traditional Soviet teaching practices can be overcome by public outreach activities and implementation of active learning methods. The problem of high cost of gamification can be resolved by a wider use of paper-based business games. The problem of low motivation of teaching staff can be resolved by introduction of a new system of evaluation based on the instructor’s use of innovative educational technologies and ability to engage and develop students. We have developed and tested a method of appraisal of undergraduates’ exposure to business games based on courses syllabi analysis. We show that, in terms of the usage levels of business games, Russian economics education lags behind developed countries by approximately twenty years.

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Keywords: Business game, game, game-based learning, learning game, paper-based game, serious game.



1. Introduction

The last decade has seen a rise in research on serious games. A review study of research on the topic from 2007 onwards carried out by Çiftci (2018). shows a continuous increase over time in the number of publications and citations in different fields. However, it should be noted that at the moment there is no generally accepted definition of the term. Abt (1970) was the first to use the term, defining serious games as those with objectives focused not only on entertainment but also on education. Still, most present-day authors tend to associate serious games to virtual games, which we consider unfair. A further point to be made is that serious games are traditionally studied within their specific discipline, whereas in reality the demand for game-based learning is driven by the transition to post-industrial (information) society. The paper examines the use of games in the context of this transition. In the new society, individualisation is both a key feature of working life and a goal of higher education which prepares students for it. We show that a business game can simulate social environment of the new society, where student will have to make independent creative decisions under stress and uncertainty. The study looks at objective prerequisites for the use of business games as well as existing challenges and ways to overcome them. Based on empirical evidence, we estimate the development lag between higher education in Russia and that of developed countries in terms of the use of business games.

2. Problem Statement

The demand for a paradigm shift in higher education learning is driven by the coming of post-industrial society (Burke, 2014; Gee, 2013; Ruben, 1999), where acting in a prescriptive way is replaced by pro activity, bureaucracy is replaced by teamwork, centralisation by autonomy and responsibility, and standardisation by individualisation (Reigeluth, 1999). Bauman (2001) sees individualisation as a release of the individual from inherited identity and expectations of his/her social role. He argues that the price of this freedom is insecurity and uncertainty of status and income, which are no more generated by professional knowledge, therefore the value of traditional education declines. Scholars highlight a range of new challenges modern students face such as that of migration, mobility, social inequality, etc. (Almazova, Khalyapina, & Popova, 2017). Individualisation is inevitably associated with risk which the individual has to bear while making independent decisions. Pozdeeva, Trostinskaya, Evseeva & Ivanova (2017) point out that present-day Russian society is characteristic of global processes of values modernisation, reasoned by Inglehart and Welzel, and reflecting individual's pursuance of greater personal freedom and self-expression.

The author of the theory of risk society Beck states that in the new society individuals are removed from historically prescribed social forms and commitments, lose traditional security and come to a new type of social integration. As the economy creates increasing and varied risks, the occupation loses its former protective functions, and individuals are compelled to self-stage their own biography under dynamic changes. That is why the development of skills to make risk-management decisions becomes one of the key tasks of higher education (Bialostok, 2015; Huang, 2015). Many authors infer that individualisation of learning becomes the major goal of present-day education (Baidikova, 2016; Best, 2015). Individualisation usually refers to an intentional shift from mechanical, routine and self-contained

learning experience of students to the orchestration of their free, creative and responsible work in the process of social interactions under risk and uncertainty.

3. Research Questions

The study depends on two hypotheses. The first hypothesis is that game-based learning is the most effective means of individualisation of work with students, of their creative development and preparation for working life in the post-industrial society. The society's transition to a new stage creates objective prerequisites for a wide use of business games in education. The second hypothesis is based on E. Fromm's concept of "escape from freedom". The idea is that creative activity and independent decision-making require the individual to change habitual behavioural patterns, to overcome the fear of implications of making wrong decisions, and to spend extra mental and nervous energy. The discomfort associated with creative activity is the main obstacle to the use of business games. The "escape from freedom" effect is primarily evidenced in students' preference towards traditional by-the-book methods of teaching and proficiency assessment. The same effect accounts for instructors' conservatism, their failure to use business games and other active teaching methods.

If the accepted hypotheses are true, then the process of business games implementation is determined by two competing factors. The first hypothesis says that there are positive factors of development (objective prerequisites), while the second one posits the existence of negative factors (obstacles). The concurrent influence of these factors is what makes the problem of the use of business games in present-day education so complex and interesting for scientific study. This is the central problem of the paper.

4. Purpose of the Study

The purpose of the study is the validation of the suggested hypotheses. In order to substantiate the hypothesis about the essential relation between business games and working life in the post-industrial society, we examined objective prerequisites for the use of this teaching tool. In order to substantiate the "escape from freedom" hypothesis, we analysed the obstacles to its use. To estimate the influence of negative factors, we conducted an inter-country study using statistical data on the use of business games in higher education in economics in Russia and the USA.

5. Research Methods

The main research method used was the analysis of academic publications dealing with the use of active learning. We also summarize the corresponding author's experience in business games development and use in universities of economics. We have developed and applied the method of selective review of syllabi to assess the level of the use of business games in a higher education institution.

6. Findings

6.1. Objective prerequisites for the use of business games were identified

1. A business game simulates social interactions. The priority task of education in the post-industrial (information) society is individualisation, the active learning methods (especially business games) being an effective tool to accomplish it. Shipunova, Berezovskaya, & Gashkova point out that the basic factor of communication environment of the Internet is a language game that creates new meanings, contexts and communication situations. The authors view creative self-fulfilment as the major purpose of activity in this environment (Shipunova, Berezovskaya, & Gashkova, 2017). Vasetskaya & Glukhov define the new society as a “smart society”. They present a “smart education” concept that calls for creation of an interactive training environment enabling motivated students to practice real-life scenarios they will face in their professional careers (Vasetskaya & Glukhov, 2017). Zemlinskaya & Fersman (2016) focus on the conflict between current students’ individual style of content consumption (mosaic thinking) and a traditional (linear) mode of training delivery. To resolve this conflict, they suggest using interactive learning tools, which enable one to practically apply theoretical knowledge, develop teamwork competencies and independent decision-making skills.

2. A business game facilitates individualisation. It includes ingredients that ensure individualisation of learning experiences, such as curiosity, fantasy, rules, challenge, and entertainment (Garris, Ahlers, & Driskell, 2002), emotional involvement, trust, balance between simplicity and realism, integration of affective and cognitive dimensions (Crookall, 2010), competitiveness and cooperation, communications and connectivity, competence and creativity, unpredictable behaviour of players (Bazil, 2012), situation analysis, trial and error method, constant feedback (Hussein, 2015), uncertainty and fairness (Cogiltay, Ozcelik, & Ozcelik, 2015), collective discussion and analysis of the players’ actions (Crookall, 2010).

3. A business game enhances the quality of learning. Kumar and Lightner (2007) argue that business games are more effective as compared to traditional methods, because they prepare students for the type of learning that they will encounter later in their professional lives. Games mobilize students’ emotions, their attention to instructions, skills of anticipation and responding to the environment, personal responsibility, imagination and a sense of humour (Bazil, 2012). They enable students to immerse themselves in the discipline and to acquire theoretical information in the process of practical activities (Gee, 2013). They enhance academic performance and interpersonal relationships, link students to real-life experiences, improve their social skills, motivate to take responsibility for their own learning, enable them to work together in collaborative groups (Wyk, 2013). However, some authors are sceptical about the learning effect of entertaining games. Dobrescu, Greiner, and Motta (2015) did not find substantial difference in the effect of playing a video-game and that of reading a textbook. Abt (1970) notes that the effectiveness of games is difficult to measure because the outcomes should be seen in the long-term perspective. He therefore proposes to evaluate results in terms of emotional involvement rather than in terms of academic achievement.

4. A business game helps to identify entrepreneurs. It has proven to be effective for identifying students with an entrepreneurial inclination. Guardia, Gentile, Grande et al. (2014) present a model based

on the use of a business game to develop entrepreneurial knowledge and skills. Sidhu, Singer, Johnsson, & Suoranta (2015) have used the Berkeley Method that is based on assumption that the mind-set of an entrepreneur can be described as a set of behavioural patterns. They consider game-based teaching approach to be the best way to develop these behaviours among students.

6.2. Obstacles to the use of business games and ways to overcome them were determined:

1. Escape from freedom. As individualisation involves the loss of old social connections and a need to build new ones, a person experiences an increasing sense of discomfort. Sokolova, Pytkin, Safonova, & Stroganova (2017) consider depersonalisation of people, standardisation of their ways of thinking and behaviour as features of the consumer society, which means totalisation of social being. If environment does not allow for personal development, freedom turns to suffering, which entails a desire to get rid of it. The “escape from freedom” effect is an integral part of creative choice and plays a key role in the method of business games, as a game is intended as a space for creative self-fulfilment in the first place. To overcome this fundamental obstacle, one needs to drastically change the whole paradigm of education by prioritizing the application of theoretical knowledge to professional tasks in a close to real-world environment rather than the teaching of theory and completing standard assignments.

2. The Soviet legacy. Present-day Russian education in the humanities and economics retains many traditions from the Soviet pedagogy that was based on Marxist concepts. When the class approach is used, people are stripped of individuality and acquire public value only as working class representatives. Accordingly, teaching methods in the Soviet higher education excluded personalisation and were directed at passive information consumption by an “average” student. Discussion, creativity and independent thinking were discouraged, while the main form of seminar work was making abstracts of the works of Marxism-Leninism classics. In the post-industrial stage, the old teaching practices run counter to the global trend of the individualisation society building (Rasborg, 2017). The economic reforms of the 1990s ruined the foundations of the Socialist regime, but failed to radically change public attitudes. Paternalistic views are still popular and continue to impact every aspect of social life, including education. This circumstance is an obstacle to wide use of business games. Two ways to overcome the obstacle can be considered. First, the development of democratic institutions contributes to individualisation of education. D. Dubrovskiy (2017) demonstrated close relationship between freedom in society as a whole and academic freedoms that determine which training methods are used. Second, adoption of best practices from the developed countries can create an alternative to traditional teaching, thereby allowing for a free competition that would show advantages of active learning. Specifically, to address the problem of Russia’s lagging in the use of game-based, problem-based, interactive, context-based, and motivation and active learning, Kruglikov & Kasyanik (2015) propose to introduce the standards of the worldwide CDIO Initiative (Conceive – Design – Implement – Operate) which centre on active learning.

3. High cost of gamification. Gamification usually refers to the use of game components in learning environments in order to motivate students and assess their competencies (Burke, 2014; Hussein, 2015). Over the last decades, gamification has usually been studied in close conjunction with the use of computer technologies that help students better grasp the lecture content as they play an entertaining

video game. New synthesis of mobile communication and the Internet technologies (Evseeva, Obukhova, Tanova, 2017, p. 63) generates a new form of m-learning. One cannot of course deny the irreversibility of society informatisation and its influence on every aspect of our life and ourselves (Spihunova, Rabosh, Soldatov & Deniskov, 2017; Gashkova, Berezovskaya, & Shipunova, 2017; Aladyshkin, Kulik, Michurin, & Anosova, 2017; Evseeva, Bashkarev, Pozdeeva, & Tarakanova, 2017). Yet, a review on the effectiveness of educational video games shows mixed results (Zheng & Gardner, 2017, p. 11).

The most complex video games simulate real-world business scenarios and in the process generate a considerable body of statistical data. However, along with their growing learning potential, computer games are getting more expensive, which proves to be an obstacle to their wide adoption. In order to eliminate this problem, we propose to break away from the domination of computer-based business games and enhance the use of paper-based games that, in our belief, can ensure just as high learning outcomes at a far lower cost. Guest (2015) notes that an advantage with paper-based games is that they are flexible and generate face-to-face social interaction, which has a positive impact on student motivation and development.

An example of a paper-based game. Using the game “Bond auction” as an example, we’ll show that the bond price calculation problem can be successfully built into a paper-based game (Korneychuk, 2015). Every student becomes a broker wishing to buy a bond and bidding a price. The number of bonds is less than the number of students, so the bonds are sold to the players with the highest bids. The winner is the student who buys a bond at a minimum price and also earns a return on investment higher than a given interest rate. After they are briefed on the rules of the game, students are given record sheets on which to write their prices. The instructor then collects the sheets, sells the bonds to the most “generous” students and announces a winner. As a result, students receive knowledge and skills that traditional methods cannot provide. First, they find out that the actual market price of a bond differs from its theoretical value, as it is equal to the average value that depends on the bidders’ prices and the number of bonds sold. Second, knowledge of the formulas and diligent calculations alone do not guarantee economic success, which is determined by random factors as well, including other players’ actions.

4. Insufficient motivation of teaching staff. Business games will be widely used in higher education only provided that there is sufficient motivation on the part of instructors. There are two reasons why the problem is a point of concern. First, the “escape from freedom” effect hinders the use of game-based learning, as these methods not only require the tutor to spend extra time and creative efforts, but also generate additional risks in interactions with students and get him or her out of the comfort zone. Second, the use of business games may have a negative impact on the instructor’s evaluation scores, especially if the game results influence academic performance.

By creating a game-based learning environment, the instructor-innovator encourages students to make independent creative decisions under stress and uncertainty. The feeling of discomfort grows, if the student consistently loses the games. Game is an important component of present-day society and is viewed as a source of pleasure. Researchers point out that in post-modernity an individual considers “his own life to be a certain role-playing game, in which participation does not require any responsibility and shall deliver only pleasure” (Timermanis, Ivanov, Zamorev, & Smaragdina, 2017, p. 433-434), and the

world is seen as the product of the accidental modulation of differences (Serkova, Pytkin, Safonova & Savitskaya, 2017, p. 1181).

Atwood-Blaine and Huffman's (2017) study of gaming in a science centre shows that challenges completed was positively and significantly correlated with challenge enjoyment. The more challenges players completed, the more they enjoyed them. This is probably the reason why large part of students does not prefer games over more traditional classroom instruction (Garris, Ahlers, & Driskell, 2002). Our findings show no consistent opinion about the influence of games on instructors' evaluation scores. Tsigaris (2008) contends that business games benefit both the students and the instructor, as they lead to higher evaluation scores of the latter and career advancement. Gremmen and Potters (2010) argue that one should not rely only on students' own judgements when assessing the efficacy of games. Kozub (2008) maintains that student evaluations may be determined by irritation associated with a negative experience in the classroom and that probabilistic and conflict aspects of games may account for this irritation. The fact that knowledge and discipline do not guarantee success in games is often perceived by students as injustice, as a certain deficiency in teaching. Emery, Kramer, and Tian (2003) propose to fundamentally change the type of questions used in student instructional evaluations. Rating questionnaires should focus not on the instructor, but rather on the students and the changes in their values, interests, knowledge and skills generated by the instructor's activity. We propose two ways to resolve the problem of negative influence of game practices on instructors' evaluation scores and motivation. First, game results should not be involved in academic performance assessment. As Gee (2013) puts it, play domain is a source of creativity and disallows evaluative sorts of assessment from the outside, therefore grades destroy it. Second, rating questionnaires should include questions that concern the instructor's ability to create an environment conducive to individualisation and engaged creative activity of students. For example, in Feldman's method of teaching effectiveness evaluation such dimensions as "stimulation of interest" and "instructor enthusiasm" are more important than "knowledge of subject matter" and "organization/clarity" (Marsh, 1987).

6.3. The usage levels of business games in a Russian economics university

Russia's backwardness in terms of the use of business games in higher education was shown. We attempted to determine how wide is the education gap caused by the identified obstacles. For that end, we calculated usage levels of business games in a Russian economics university and then compared these with similar data on business education in the USA in the 1990s. We chose to focus on Higher School of Economics as it is the most transparent university that posts its syllabi of courses online (www.hse.ru). The study method was based on the assumption that if a syllabus contains the term "game", then game-based learning is actually used, otherwise it is not used. The survey was conducted in 2017 and covered 11 divisions of the university. Out of 685 syllabi only 87 contain the word "game", the share of these being 12.8% in general, 3.5% — in economics and finance, 24.7% — in management, 6% — in world economy and international relations.

For comparison, we used Faria's (1998) findings on the extent of business games usage in universities allied with the Association to Advance Collegiate Schools of Business (AACSB). Through a mailing of questionnaires the author found that the percentage of universities using business games as a

learning tool grew during the 1962–1986 from 71% to 95%, i.e. by the end of the period almost all universities were using the method. In 1995 the author determined the percentage of teachers using game-based learning, the figure being 63% in marketing, 44% in management, 39% in finance, and 16% in accounting (Faria, 1998). Comparing our evaluations with the data provided by Faria we find that the level of exposure to business games in management disciplines of the Russian university is almost two times lower than that in the business education in the USA in 1995. In 2004, Faria together with W. Wellington conducted a similar survey: across 1,085 business faculty members, 30.6% were current business game users (Faria & Wellington, 2004), which is more than two times higher than usage levels of business games in the Russian university. Therefore, in terms of the usage levels of business games, Russian economics education lags behind the USA by more than twenty years.

7. Conclusion

Studying business games in the context of post-industrial society substantiates the need for a wide use of this method of active learning as a way to drive individualisation and prepare students for proactive creative activity in the new society. The use of business games has a positive influence on learning outcomes, but causes a problem of “escape from freedom” as students are required to make independent and responsible decisions, stepping out of the comfort zone of traditional by-the-book tasks. The empirical method that we have developed and tested can be used for monitoring students’ exposure to business games in a university setting.

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