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Gaming Industry Trends in new Generation Specialist Training in University Environment

Olga F. Piralova[1]*, Sergey A. Gerasimenko[2], Vladimir V. Kuznetsov[3], Olga V. Popova[4], George V. Subbotin[5], Olga G. Kolomyts[6], Nikolay A. Mashkin[7]

[1] Institute of Management and Economics, Omsk State Transport University, Omsk, Russian Federation
[2] Faculty of Mathematics and Information Technologies, Orenburg State University, Orenburg, Russian Federation
[3] Department of the General and Professional Pedagogics, Orenburg State University, Orenburg, Russian Federation
[4] Department of International and Public Law, Financial University under the Government of the Russian Federation, Moscow, Russian Federation
[5] Vice-Rector for Educational and Methodological Work, Gzhel State University, Elektroizolyator, Russian Federation
[6] Department of International Relations, World Politics and Diplomacy, Kazan (Volga region) Federal University, Kazan, Russian Federation
[7] Department of State and Legal Disciplines, Plekhanov Russian University of Economics, Moscow, Russian Federation

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Abstract

The research urgency is caused by the search for effective approaches to interactive transformation of a new generation specialist training process in the conditions of innovative interaction between educational environment of the University and the video game sphere. In this regard, this article is aimed at revealing the features and technologies of implementing priority trends in the gaming industry in the training of a new generation specialists in the educational environment of the University. In the course of pedagogical monitoring – the leading method of research, the structure and content of trends in the gaming industry in the interactive transformation of University student training are determined. The article reveals the modern understanding of the concept of the gaming industry, defines its priorities in the fields of education. The authors have established the structure and content of the classifier of functional posts in the gaming industry in the training of a new generation specialist in higher education. Based on the results of the research, an interactive model for implementing priority trends in the gaming industry in the training of a new generation specialists in the educational environment of a University is substantiated. The materials of the article can be useful in the development and implementation of various methods and practices in the services of the gaming industry and in the educational process of the University.

Keywords: Game industry, Gamer, Typology of video and computer games, ESports, New generation specialist, Trends in the game industry, Educational environment

1 Introduction

The transformations of the higher education system that have been taking place over the past 20 years due to the introduction of information technologies in all spheres of society are acquiring new ways of expression: a departure from strict compliance with educational standards, a unified division of academic time into semester and module courses, a focus on the use of short-term programs, independent projects, trainings, and practices in the educational process [1]. A notable consequence of the educational process informatization is the integration of online and offline spaces in the process of teaching many courses. The learning process becomes virtual and develops based on the resources of online courses. The dominance of information technologies also contributes to changing relations between key subjects of education: the influence of the teacher's personality on the individual student is reduced, online consultants, who, in turn are replaced by virtual Tutors, replace consultants. As part of the smooth transition to training in the blending format, most lectures are transferred to an online platform. Lectures are not carried out in real time in the classroom, but are pre-outlined by the teacher for viewing by the student during independent training [1-3]. There are a number of ethical difficulties are associated with this approach. The most discussed issues related to the launch of the blended course program concern the preservation of the value of direct contact between the student and the teacher, as well as the self - worth of the teacher as a specialist. Against the background of the presented problems, the most intense interest of the University community in recent years is caused by the gaming industry, the key idea of which is to develop an interactive approach to training a specialist based on the integration of the educational environment of the University and the video game sphere [3]. According to this approach, the educational process is carried out in a virtual environment where there are no clear boundaries between learning and video games. The inclusion of game components in the educational cycle is assumed at the expense of virtual reality and the game environment, and the implementation of all educational tasks is transferred to the space of various forms of game models with a large content of visual and acoustic content [1, 4]. Certain successes and high efficiency of using these technologies (speed and ease of mastering the material, positive attitude of the audience to the learning process, attractiveness of educational products) contribute to the support and promotion of the gaming industry in the market of educational services. At the same time, the redundancy of game components and virtual environment in the educational process, as D.E. Gasparyan [1]

***Corresponding author:** Olga F. Piralova, Institute of Management and Economics, Omsk State Transport University, Omsk, Russian Federation. E-mail: imec@omgups.ru.

rightly believes, transfers the student to the category of technical unit. There is a general depersonalization of the educational process. All these trends have a direct impact on the development of personal qualities of the student. In the collective work of G.S. Bazhenova and V.V. Grishkun [5], the student's personal qualities are synthesized in the aspect of their compliance with the universal values of the youth of the XX1ST century. The authors note in this list of universal values of the student the priority areas in the life of the student-a future specialist of a new generation, which M. Prensky [6] defined as a digital aborigine. All these trends, reflecting the deep processes of new forms of interaction between the educational environment of the University and the video game industry, need scientific understanding. In this regard, this article provides a theoretical and methodological justification of the priority trends of the gaming industry in the interactive transformation of the training of a student-a future specialist of a new generation in the educational environment of the University. In the course of pedagogical monitoring – the leading method of research, the structure and content of trends in the gaming industry in the interactive transformation of University student training are determined. The article reveals the modern understanding of the concept of the gaming industry, defines its priorities in the fields of education. The structure and content of the classifier of posts functions of a video game specialist are established. Based on the results of the research, an interactive model of interaction between the educational environment of the University and the video game sphere in the training of a new generation specialist is substantiated. The effectiveness of the model is proved in the process of implementing trends in the gaming industry in the educational process of the University.

2 The State of Study of the Research Problem in the Literature

The organization of student interactive activities based on the use of resources of the gaming industry has become the subject of scientific interest of a significant number of scientists, whose research problems are caused by the transformations of the educational process of the University. These studies are associated with the names of many leading experts, including D.E. Gasparyan [1], V.A. Pomelov [3], M.R. Karmova [4], S.A. Bazhenova and V.V. Grishkun [5], M. Prensky [6], P.A. Gorshkov [7], O.V. Kalimullina [8], I. Rahwan [9], J. Heisinga [10], M. Chiksentmikhayi [11], Y. Choy [12]. The authors of other works devoted to the study of the problem of interaction between the video game sphere of the gaming industry and the educational environment of the University are united in conditionally grouped areas of their research: (a) active supporters of educational process transformations mediated by integration interaction of pedagogical and information technologies, computer multimedia systems and interactive computer games [1, 3, 4, 7]; (b) active supporters of *erasing* the boundaries between the educational environment of the University and the video game sphere of the gaming industry [2, 13, 14]; (c) supporters of the game industry use in the educational environment of the University as an innovative type of professional activity [2, 6, 8, 15, 16, 17].

Leading researchers [1-4, 6, 11, 12] note the special significance of the resources of the gaming industry in increasing the level of student motivation in training. The effectiveness of these resources in the process of creating an interactive model of interaction between the educational environment of the University and the video game sphere in the training of a new generation specialist is proved. During the study, the research problem it is established, that despite the fact that some aspects of game industry are actively used in the educational process of the University, which certainly contributes to a better fulfillment of educational goals and objectives of the interactive training of specialist of new generation, it is prematurely to speak about a complete understanding of this process. An important role is also played by the factor of special variability and unpredictability of the development of gaming industry services, which are far ahead of the development of University resources. Therefore, the definition of priority trends in the interaction of the video game sphere and the educational environment of the University in the interactive training of a new generation specialist seems to be justified and appropriate.

3 Results and Discussion

3.1 Content Analysis of the Gaming Industry as an Educational Category

Based on the discursive content of the concept of the game industry, reflected in the works of D.E. Gasparyan [1], M.R. Karmova [4], N.I. Nikolaev [18], Yu.F. Shpakovsky and M.D. Danilyuk [19], in this study, its understanding is determined by the use of game elements in non-game educational processes. The article by N.I. Nikolaev [18] notes that the modern spheres of the video game industry, due to the technological *leap* in development, are transformed from the entertainment industry into an innovative type of professional employment that attracts students with technological resources, intellectual labor capacity and high pay. Currently, in the educational process of the University, along with the technologies of the educational process, elements of such video games as platformers, action, adventure, role – playing games, online games, strategies, casual games, simulators are actively used as innovative techniques. The division into genres is conditional, due to the influence of information technologies that bring elements of innovative changes to the existing structure of video games and create new types of games. During the research, the features of the development of the gaming industry in the educational environment of the University from the beginning of its origin in the middle of the XX century to the present time are analyzed.

1. At the initial stage, the correct analysis of which is presented in the article of T.A. Zhuravleva and F.S. Izvekov [17] and N.I. Nikolaev [18], this phenomenon was not recognized and spread in the educational process of the University due to financial difficulties in the production of video games and a cautious attitude to them on the part of University teams. Initial success in this area is associated with the home game console *Magnavox Odyssey*. The article of N.I. Nikolaev [18] revealed the secrets of its success in the video game market, due to the elementary simplicity and cheapness of the design, as well as the availability of use. These features have played their role in the console's long successful presence in global video game markets.

2. The *Golden age* of the video game industry the period from 1978 to 1983 is considered. As N.I. Nikolaev [18] notes in his article, during this period, the main projects of arcade video games were released, which formed a positive public opinion about them, including among the University community.

3. The video game industry crisis of 1983. Extended characteristics of the prerequisites and causes of the crisis, alternative approaches to its assessment, are presented in the works of D.E. Gasparyan [1], N.I. Nikolaev [18], Yu.F. Shpakovsky and M.D. Danilyuk [19].

4. As the works of N.S. Kozyr and A.V. Astakhova [2]; N.I. Nikolaev [18] note the appearance of third-generation consoles

marked the beginning of the era of forgetfulness of slot machines as the main platform for video games. In the development of video games, the era of 8-bit, 16-bit, 3D and new game media, which are actively used by modern students in the educational process, has begun.

5. 2000th thousandth years. The era of VR games. Experts of the 2000s refer to virtual games as technologies that are ahead of the dreams of even science fiction writers.

In the educational environment of the University, these fantastic projects are implemented at the level of creating virtual models of distance learning, digital campus and other network projects, which confirms the direction of the transformation of the gaming industry from entertainment to interactive professional activities, having an urgent need to train a new generation of specialists. In the 2000s, the term *gaming industry* is being adapted by teachers and students as an innovation to the conditions of the educational environment, acquires the status of an educational category and becomes the basic core of an interdisciplinary cycle of socio-professional disciplines in the curricula of the University [5, 18].

3.2 Structure and Content of the Classifier of Posts Functions of a Video Game Specialist

The analysis of the personnel situation in the video game industry in the educational environment of the University indicates not only the crisis of specialists, but also the lack of a legal framework in relation to them, since to date the list of specialties of the game industry is not presented in the Unified qualification directory of posts of managers, specialists and other employees [20], there is no systematization, structure and content of functions, and even a conceptual format. Among the first works in this field of research interests is the article of N.S. Kozyr and A.V. Astakhov [2], which presents a list of posts of employees of the game industry of leading domestic and foreign developer firms and their remuneration. In this approach, the authors present the economic interest of video game developers – a conflict of interest in the remuneration of employees of domestic firms. In this study, given the trends in the labor job market of video game industry, the pedagogical monitoring of the shortage of personnel in this field of labor is given, and the duties of professionals in demand in video game sphere is systematized, the distribution of their structure and content according to the objectives for effective use of video game interaction sphere of game-industry and educational environment of the University in training specialists of a new generation is carried out.

Algorithm for structuring the classifier of posts functions of a video game specialist.

Section 1. Analytical (diagnostic). The main functions of analysts: constant and continuous monitoring of game consumers and employees of the game Department to determine the key, leading technologies in improving the quality of the product.

Section 2. Organizational -Managerial. Functions: coordinating the activities of various departments within the developer team.

Section 3. Software - technological. Functions: development and control of the game's software code, the main strategy of the game, and the entire game process, including key aspects of content and software hardware.

Section 4. Design. Functions: implementation of graphic content of the game world, animation of 3D models, modeling of characters, their attributes, and interior items.

Section 5. Producer. Functions: providing the game concept with the necessary resources for the implementation of the finished product, project support, monitoring and organizing constant growth of all key indicators.

Section 6. Organizational and marketing. Functions: implementation and management of product sales, negotiation, communication development, promotion of the game in the market, project management and research.

Section 7. Community managerial. Functions: implementation of interaction with the audience and consulting the gamers.

Section 8. Engineering-technological. Functions: implementation of diagnostics, correction of software malfunctions.

Section 9. Information and communication. Functions: communication with journalists, bloggers, PR managers, lets players.

Section 10. Corrective. Functions: organization of work with content after the game is implemented.

3.3 Interactive Model of Interaction between the Educational Environment of the University and the Video Game Industry in the Training of a New Generation Specialist

In the process of creating an interactive model, a holistic approach is used to the educational goals, needs and interests of the student in using the potential of video games as a complete virtual world based on an understanding of its fundamental properties and characteristics [10]. The implementation of the holistic approach involves specific requirements for compliance with the rules and requirements of the organization of an interactive model of interaction between the educational environment and the video game sphere in the training of a new generation specialist.

Step 1. Creating an algorithm for rules and requirements:

- setting a clear goal for interaction;
- Concentration of the student's attention on certain game options;
- Compliance with direct and feedback between the student, the educational environment and the video game sphere.

Stage 2. Designing the content of an interactive model of interaction between the educational environment of the University and the video game sphere.

The methodological basis of the model is based on the ideas of *Octalysis* developed by Y. Chou [12]. The term *Octalysis* is derived from octagon and analysis. Unlike other models, the Yu-Kai Chou model is more *personalized*, taking into account the feelings, needs and motivation of the individual.

According to Yu-Kai Chou, there are eight main driving forces of human motivation: (a) Epic Meaning & Calling -the need for a sense of self-importance. (b) It manifests itself when persons believe that they are doing something significant that is superior to themselves, or they have been chosen to do something important. (c) Development & Accomplishment -the need to develop and achieve success as an internal urge, the desire to develop their skills and progress, achieve mastery and overcome difficulties. (d) Empowerment of Creativity & Feedback – the need for the development of creative abilities. It is expressed in involvement in the creative process, in which they constantly create something new and try different combinations. People feel the need to not only Express their creativity, but also to see its results, get feedback, and change in response. (f) Ownership & Possession-the need to own and control something-either. It is manifested when a person feels a sense of possession of something and seeks to exaggerate and improve what he/she owns. (g) Social Influence & Relatedness-the need for social connections and influence on other people. (h) Scarcity & Impatience-the desire to get something, simply because it is rare, exclusive, or unavailable now. The need is related to the fact that when a person cannot get something right now, they keep thinking about it constantly. (i) Unpredictability

& Curiosity – curiosity and unpredictability. The need to be constantly involved because you do not know what is going to happen next. (j) Loss & Avoidance-the desire to avoid negative consequences and losses.

Stage 3. Criteria for implementing needs. The identified needs are universal and generalized. In the course of the study, it became necessary to divide them into two groups: left-hemisphere (logic, analytical thinking) and right-hemisphere (creativity, curiosity), as well as *white* (make us strong, satisfied and fulfilled) and *black* (make us anxious, dependent and obsessive). Each driving force of motivation corresponds to individual game mechanics and techniques. For example, techniques such as points, badges, and leaderboards, progress indicators, quest lists, and boss battles are used to meet a student's development needs and achieve success in the study. To satisfy the student's curiosity, techniques were used - *Easter eggs*, random and sudden rewards, mini-quests. The criteria confirmed the effectiveness of the developed approaches.

4 Conclusion

The research confirms the theoretical and practical significance of interactive transformation of the process of training a University student-a future specialist of a new generation. This is due to the interactivity of the video game industry, which, due to technological progress in development, is transformed from an entertainment industry into an innovative type of professional employment that attracts students with technological resources, intellectual labor capacity and high pay.

The results of the study confirm the effectiveness of priority trends in the transformation of the gaming industry in the educational environment of the University: today, the gaming industry has ceased to be just an entertainment industry, and an innovative type of professional activity is formed on its basis. The term gaming industry has become an educational category and is firmly embedded in the development strategies of higher education. In this regard, the article provides theoretical and methodological substantiation of priority trends in the transformation of the video game industry in the interactive transformation of University student training. The modern understanding of the concept of the gaming industry is revealed, its priorities in the fields of education are defined. The authors have established the structure and content of the classifier of posts functions of the gaming industry in the training of a new generation specialist in higher education. Based on the results of the research, an interactive model for implementing priority trends in the gaming industry in the training of a new generation specialist in the educational environment of a University is substantiated. The materials of the article can be useful in the development and implementation of various methods and practices in the services of the gaming industry and in the educational process of the University.

This problem as a pedagogical direction does not exhaust itself in solving the set goals and tasks. An important issue for continuing research in this area of interest is the problem of adapting the technological resources of the gaming industry to the scientific and methodological support of the educational process of the University.

Ethical issue

Authors are aware of, and comply with, best practice in publication ethics specifically with regard to authorship (avoidance of guest authorship), dual submission, manipulation of figures, competing interests and compliance with policies on research ethics. Authors adhere to publication requirements that submitted work is original and has not been published elsewhere in any language.

Competing interests

The authors declare that there is no conflict of interest that would prejudice the impartiality of this scientific work.

Authors' contribution

All authors of this study have a complete contribution for data collection, data analyses and manuscript writing.

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