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Business games in educational process: stimulation of innovative activity of undergraduates of Masters Degree

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***Abstract*— Results of the experiment based on carrying out the role-playing / organizational and activity game included in a new discipline "The theory and practice of innovations" are considered. It is shown that it is expedient to solve a problem of a low involvement of students and undergraduates into innovative activity through introduction of the corresponding disciplines directly in educational process.)**

Keywords*— innovative activity, *role-playing game, organizational and activity game, Post-Soviet republics, the theory and practice of innovations.

I. Introduction

Now in the majority of the Post-Soviet republics, including Russia and Kazakhstan, considerable efforts are spent for ensuring the formed industrial and innovative development, which is also considered as the instrument of overcoming the crisis phenomena in Post-Soviet education [1-5].

At the same time, stimulation of innovative activity of youth (in particular, undergraduates of Masters Degree) of the Post-Soviet republics majority meets serious difficulties, connected with the stereotypes of mass consciousness of the youth environment which developed during transition from a planned to market economy[6].

So, in [1] it was emphasized that as a result of the historical reasons (more precisely, due to features of a transition period) the profile of preferences of Kazakhstan higher education institutions graduates has the expressed list towards the professions that are poorly connected with innovative activity. (By results of sociological polls trade is on the first place with a big advance.)

Facts of this kind, as well as data in [6] clearly shows that the youth mass consciousness does not consider innovation as a field in which the graduate can achieve success in life.

Therefore, involvement of youth in innovative activity (especially when it comes to state-wide) requires the development of a system of measures aimed primarily at overcoming these stereotypes of the mass consciousness.

Most simply it can be achieved by directly implementing in the educational process, at least, in some universities, certain elements that directly motivate students to create innovation.

It is appropriate to emphasize that even direct calculation of a potential workforce gives impressive figures: at least **two hundred thousand** of person-months of rather skilled work is spent annually now for preparation of Masters theses and final works only in one city of Almaty.

With regard to the problem of forced industrial-innovative development of Kazakhstan this resource is still involved in insignificant degree, similar conclusions in general are fair for the Russian Federation. The vast majority of final works and master theses answer only educational purposes; results received in them don't find significant practical use.

In universities of the EU countries these resources (at least partly) are involved in economically significant activity through the creation of start-up companies (start-ups). They, in particular, are based on low-budget projects that combine work on a master's thesis and work on commercially significant offers.

In the Post-Soviet republics amount of works which are carried out by youth startups remain insignificant. As follows from materials in [6], it is generally connected with weak motivation of youth to participation in innovative activity that, in turn, follows from the stereotypes of mass consciousness stated above.

Therefore, there is a task of purposeful involvement of undergraduates in innovative activity.

This paper discusses the results of an experiment carried out at the Almaty University of Power Engineering and Telecommunications (AUPET) involving resources of Sevastopol State University aimed to stimulate innovative activity of undergraduates.

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II. Experimental background

The experiment was conducted as part of the test implementation of the new discipline "Theory and practice of innovation" in the educational process (for Masters Degree). Lecture material of this discipline is mainly focused on demonstrating the importance of innovation and a clear demonstration of the possibilities that open up for beginning inventors in the field. One of the main components of discipline are the role-playing / organizational and activity games constructed on techniques close to the technique, that was offered by G. P. Schedrovitsky [7,8]. Preparation for participation in such games is carried out on the practical lessons of the considered discipline.

The main role-playing / organizational and activity game included in a practical training on the specified discipline is constructed according to the following scenario.

Participants of the final round of the game are divided into two groups, similar in qualitative and quantitative composition. One group models functions as "innovators", i.e. the people offering own development (invention) focused on receiving concrete profit. The second group of game participants acts as "investors", i.e. people possessing available financial means that can be "enclosed" in concrete development. To participate in the game, each investor is provided with a fixed amount of conditional money, which can be invested in one or more projects, distributing them at their own discretion.

Each of the "innovators" during the game make a brief presentation on the development, he is offering to implement. At the same time each of the "investors" gets the application documentation for the project on this particular development.

As initial material when forming a template of such application documentation applications for funded projects execution (in a little reduced version), that were actually used in the current practice of post-Soviet states were accepted. (In particular, the competitive documentation distributed by authorized divisions of the Ministry of Education and Science of Kazakhstan was used). On the same basis presentation template, which players make during the game, is constructed.

By results of performances of "innovators", each of "investors" independently make the decision on the volume of conditional financing of the specific project, distributing available resources in an arbitrary manner.

Upon completion of the game expert group simulates the development of each presented innovations. In parallel the expert group makes the decision on possibility to participate in the finalization of the draft to the level applying for the real funding. The applications finished with participation of expert group are submitted on behalf of the organizations that are responsible for carrying out the game.

Each project is estimated on two positions (modeling of receiving profit and potential participation in the real project). Usage of such positions is dictated by the following reasons.

In modern conditions any innovation includes two main components:

- a particular business idea, which in relation to the technical embodiment is the basis for formulation of the problem, as well as a basis to justify the relevance of the project;

- a set of tools of specific practical implementation of this business idea.

The presence of both of these components is obviously vital to the success of any innovation, however, current practice shows that in each case there is a question of choosing priorities. As it is noted in the quoted monograph, the considerable part of research collectives in the Post-Soviet countries during formation applications for the financed works start from own scientific interests. Simplifying, the research group receives a certain scientific result and then tries to use it to create innovations demanded by the market. Other sequence of actions assumes that the business idea is primary. The technique of carrying out the considered role-playing / organizational and activity game is guided by this option.

This is due to the fact that awakening of *primary* interest in innovative activity in the absence of initial motivation can be carried out only at rather low expenses of time and efforts from the learner. Further, this interest is fixed during the working out of specific tools of the project. However, under the terms of the game constructive business idea is regarded as an independent value (including the case of partial working out approaches to the actual implementation), which defines a dual criterion for assessing each of the projects.

On the basis of the criteria stated above both "innovators", and "investors" are assessed and in relation to the last the combined assessment, that reflects efficient usage of an initial resource (the conditional financial capital) by "investor", is also applied.

The final round is constructed according to the scheme, which is symmetric in relation to participating teams. Throughout a final round teams of investors and innovators change their positions. As a result the activity of each participant is evaluated by his ability to prepare an independent project and his ability to make expert assessments.

Thus, the final round is de facto constructed according to the scenario of a role-playing game. Elements of organizational and activity game are used at a stage of preliminary preparation which is the most essential in terms of the actual learning process.

At this stage during the conducted experiment preparation of innovative proposals of undergraduates was made, during which interest in innovative activity was cultivated and revealed opportunities for them personally.

It is essential that preparation of innovative offers at the first stages was conducted by undergraduates of each of two groups collectively, and elements of organizational and activity games were used. Classes were given as follows.

Each undergraduate – participant of the game told about a subject of the dissertation work, and also about received results (in case of existence). Then the group started collective discussion of various opportunities of creation of innovative offers on this basis. The teacher's role in this discussion is to filter obviously unsuitable proposals

and the direction of discussion to the constructive course. Collective work on primary ideas of innovative offers was promoted by such factor as competition between two teams relating to various universities, that take part in a final round of the game.

III. Results

The experiment somewhat unexpectedly showed that after 2 months of preparation for the final round of the game, more than half of involved undergraduates turned out to be able to go from a complete lack of interest in innovation to the competence of ensuring the development of proposals, including those that have a commercial interest. Thus experience of carrying out the classes connected with preparation of innovative offers unambiguously showed that in game, as one would expect, comes quite certain critical threshold after which undergraduates start generating ideas. Condition to overcome it is to ensure the collective work - sustainable exchange of information within the group.

More precisely, it is possible to recognize results of the conducted experiment successful at least only because from 22 undergraduates of Masters Degree in group of faculty of radio engineering and communication of AUES 6 people came to the level sufficient for preparation applications for government funding. (The offers made by undergraduates are really used during the preparation of applications to the Ministry of Education and Science of RK on behalf of organizers to implement funded scientific and technological projects.)

To further promotion the following innovative offers formulated by undergraduates were selected:

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- The system of GPS-navigation designed to monitor attendance (the system does not require the development and use of additional hardware, it is completely based on the use of smart phones that students already have).
- The system of "collective" communication system in which to improve the quality of reception the resources of several closely located cell phones that exchange information are used.
- The facet accessories to cell phones providing increase in the image formed on the screen.
- System of information support of student's consumer cooperation
- The system of collective consumer assessment of the quality of communication services provided by mobile operators.
- Resource "electronic tour guide", coupled with elements of urban advertising.

It is necessary to emphasize that on the first of the offers stated above the attendance monitoring system intended to implement in AUES is already developed and it is made on the basis of the separate youth startup company.

It is also interesting to note that the first offers formulated by undergraduates were connected with the most familiar area for them – use of various IT systems in educational process, and also with development of the services which are potentially of interest to undergraduats as users. At the next stage transition to more wide range of possible innovative offers was carried out, but the attention of participants of game mostly concentrated on development of various applications, in particular, established on smart phones. Only the limited number of innovative offers was connected with development of new technical systems, and only those offers were approved to further advance, which authors on own initiative consulted to the contemporaries who are studying economic and marketing specialties.

IV. Conclusions

In general, by results of the conducted experiment it is possible to make the following conclusions.

- The low involvement of undergraduates of Almaty universities into innovative activity isn't mainly connected with lack of opportunity to generate ideas, it is more connected with weak awareness on nature of innovative activity itself. Undergraduates do not innovate, not because they cannot do it, but because this activity falls outside of the range of their interests, which, apparently, is connected with the formed stereotype of mass youth creation, analyzed in [6].
- It is expedient to carry out involvement of undergraduates in innovative activity within teaching subject, but not, within work on theses. In this case motivation factors that are extremely transparent for undergraduates (receiving a positive assessment on concrete discipline, delivery of semestrial works, etc.) are involved.
- Experience in teaching "Theory and practice of innovation" can be extended to almost all technical and natural sciences.
- The success of promotion of the developed method of engaging students and undergraduates in innovation depends on the degree of interdisciplinary cooperation: it is expedient to form mixed teams of undergraduates of different specialties, and the most promising appears to cooperation between students of technical and economic disciplines, students, technical and marketing /designing specialties.
- Interdisciplinary cooperation which marked in claim 5 also allows involving in innovation undergraduates of humanitarian specialties (marketers, designers, etc.).

References

[1] E.V Bodrova., S. B.Nikitina, “The crisis in education, search for a new paradigm of education at the turn of XX-XXI centuries”, (in Russian) Site of the Moscow University of Humanities, 2009 – URL: http://www.mosgu.ru/nauchnaya/publications/2009/professor.ru/Bodrova&Nikitina.pdf

[2] I. V. Abankina, T. V. Abankina, L. M. Filatova, E. A. Nikolayenko, “Restructuring the higher education in modern Russia” (in Russian), Law, №4, 2013, pp. 99-107.

[3] I. Abankina, T. Abankina, L. Filatova, E. Nikolayenko, E. Seroshtan, “The effects of reform on the performance of higher education

institutions", Journal of Applied Research in Higher Education vol. 4(1), 2012, pp. 23 – 41

[4] S.A. Baronin, K. S. Suzev, "Main problem situations of the higher education" (in Russian), Higher education in Russia, vol.1, 2013, pp. 110-115.

[5] I.T. Pak, I.E. Suleimenov, G.A. Mun, A.K. Mynbaeva, K.I. Suleimenova, "The crisis phenomena in the sphere of the higher education" (in Russian), Proceedings of the Scientific and Technical Society "KAHAK", vol. 4(34), 2011, pp.13-19.

[6] D. B. Shaltykova, K. I. Suleimenova, I. E. Suleimenov, P. V. Obukhova, "Post-transition period and quality of higher education: ways to overcome the crisis phenomena", International Letters of Social and Humanistic Sciences, vol. 8, 2013, pp. 49-56.

[7] G.P. Schedrovitsky, "Organizational-activity game: practice methodology and concentrated life on the board", Public lectures on philosophy G.P. Shchedrovitsky , M .: Publisher Sc. Cult. Policy., 2004, pp. 137-165.

[8] G.V. Mukhametzyanova, N.A. Chitalin, S.Y. Gruzkova, "Organizational-activity game scoring set of measures vocational educational reform RT, proposals and additions". Kazan pedagogical journal, vol. 4, 2008, pp. 119-124.