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Abstract. The main topic of this articles focused on ways of introducing and using of modern simulation into education of youth 14-19 ages in schools, colleges, institutes and universities of post-socialistic countries (for example Ukraine). Actuality of this theme is determined by need of increasing of economic literacy, activity and responsibility of Ukraine's society for really realization of economic reforms. All persons, especially our youth age 14-19, must have new instruments and skills for reaction and self-realization in new dynamic and quickly changing world. Authors discovered experience, problems and innovative decisions of practical realized state experiment project "Development business education in Ukraine as part of entrepreneurial state policy", which had started from six secondary's schools in Kropyvnytskyi (Central Ukraine). Project team used business-simulation ViAL+ for experiment and modernization of entrepreneurial education. Because, this instrument is adopted for Ukrainian conditions, laws and economic culture, traditions. This project became part of the developing of entrepreneurial skills of pupils, which is one of the priorities of the concept of the New Ukrainian School. Also, this experience became a case of providing of entrepreneurial education at the other Ukrainian regions. The main parts of experiment are courses for secondary school "Business Education" for 7-10 classes, summer schools of Business Leadership, local and All-Ukrainian business-tournaments. Also authors described experience of using simulation for youth 16-19 ages in colleges and universities. In articles also are revealed main problems and ways of solving.

Keywords: entrepreneurship education, business-simulation, ViAL+, business tournament, Strategy of Firm, business school, ICT.

1 Introduction

The current socio-political situation in Ukraine, the emergence of the new economic relations and changes in the Ukrainian business, put personality into some complex psychological conditions. We received the process of changing public awareness and the formation of new economic relations in general. At the last year also we had changing politics elite, changing climate, COVID-19. And nowadays there are start of economic crisis and very great uncertainty of future in Ukraine. Population have very high stress situation. At the same time, the transformation of the world into the knowledge economy, digital economy is underway.

In this situation, all persons, especially our youth age 14-19, must have new instruments and skills for reaction and self-realization in new dynamic and quickly changing world. They want to know how choose profession, how build of their life in future, what knowledge and skills will be useful and what must forgot. The market and digital economy presumes first of all that each person cares about his welfare, about the welfare of his family and daily, throughout his life, makes economic choices, takes economic decisions and is ready to be responsible for his consequences, relying on the own efforts and own talents. That is why for citizens of Ukraine economic knowledge become imperative and the Economy becomes one of the most popular science.

Adoption of new law about education (from 05.09.2017), about secondary education (from 18.03.2020) open new reality and opportunities for schools [1;2]. Competence “Entrepreneurial and finance literacy” became one of main competence. It is considered as the ability to generate new ideas and initiatives and to implement into life them as ability to entrepreneurial risk [3]. The purposes of this competence are increasing of social status and welfare as well as the development of society and the state. In generally, the current graduator regards as a Person, an Innovator and a Patriot.

Moreover, in modern transformation situation **arose the need to** reform the system of economic and entrepreneurial/entrepreneurship education with using ICT into secondary (gymnasiums and lyceums), professional (vocational) and higher schools (institute and universities) for forming strong and preparing to life person.

The main topic of this short paper focus on ways of introducing and using of modern simulation ICT into education of youth 14-19 ages in schools, colleges, institutes and universities of post-socialistic countries (for example Ukraine). We show results, problems and perspectives of using business-simulations for forming economic literacy and entrepreneurial competence of youth 14-19 ages during 2016-2020 years into:

- Secondary school as faculty of entrepreneurship for 8-11 classes as part of Experimental science and applied project “Development of Business Education in

Ukraine as an Element of the State Policy of Promoting Entrepreneurship Development” [3];

- Informal education of entrepreneurship;
- College as online economic practice;
- University as part of introduce to studying of business-economy and entrepreneurship.

2 Development of faculty of entrepreneurship with using business-simulation into secondary school

During many years our pupils educated economics in school as main disciplines in 11 classes. Extraordinary majority of teachers, who educated those lessons, weren't specialist in economy. They were teachers of geography, history, sometimes mathematics. Only a few persons had specialized education. This factor and not easy educational program played main role, that parents, pupils hadn't wanted to study economics, and Ministry of Education and Science cancelled this disciplines. But need in economically competent of citizenships is stayed. And today we need to change the content and form of economic education. We must orient economic education to practical sense – financial and economic literacy, entrepreneurship skills, interaction with employers and business.

As for us, there is most important development of entrepreneurship education. Because entrepreneurial skills help self-realization of persons, realization of ideas at the workplace and life, time and resource management and getting money from realization of person's talents. There are many projects during 1991-2016 years in Ukraine. But all projects are closed after finalization of funding. The main branches of courses are studying of creation of business plans, learning of business experience, improving economic and entrepreneurial tasks to other disciplines.

Recognizing the need of improving the conditions for obtaining entrepreneurship skills of pupils at our schools, some teachers had joined to the project "The development of business education in Ukraine as an element of state policy of promoting entrepreneurship" headed by PhD in Economics Vitalii Pazdrii, Kyiv National Economic University named Vadym Hetman [4].

2.1 Description of Course for Secondary School “Business Education”

Within the framework of the research of Ukrainian level on the theme "The development of business education in Ukraine as an element of state policy of assistance in business development" The Department of Education of Kirovohrad City Council introduced a course of business education of creation and organization the enterprise in its secondary schools.

The purpose of this course is the acquisition of necessary theoretical knowledge management systems or enterprise economics, formation of practical business skills, abilities and skills of economic knowledge, entrepreneurship, clear professional positioning and to develop skills of self-discipline, presentations, self-motivation,

enterprise and initiative. Among the effective mechanisms of nurturing business is using multifold strategies, interactive training, active and competency approaches.

The study of the course “The development of business education in Ukraine as an element of state policy of assistance in business development” in 8-11th classes of general education institution aimed at:

- mastering fundamental knowledge of economic life, as reflected in key economic categories, state laws, laws that promote the formation of financial literacy;
- promoting economic skills of rational human behavior as a consumer, employee, entrepreneur, owner of income and the taxpayer, the user of public goods, etc.
- promoting the skills of individual work in the practical tasks of economics and generalization of the results.

A Course Program "Business education" is designed for 35 hours, which covers learning the material at the lessons (including the practical works) and a reserve time.

The structure of course provides for compliance with its certain logic, which relies on the basic principles of knowledge:

- the movement from simple to difficult,
- combining abstracts (you understand the concepts) and to concrete the practical using,
- reviewing of the reliability of the new knowledge.
- training in the process of using a professional software means of business simulation.[4]

The course "Business education" includes 4 chapters covering 7 topics:

- Section I "Introduction to Entrepreneurship"
 - Topic 1. Formation of the concept of "entrepreneurial activity"
- Section II "Financial and organizational support of starting a company"
 - Topic 2. Formation of production and marketing potential of the company
- Section III «Main cycle of the company's activity».
 - Topic 3. The main aspects of production and its sale in the trading network
 - Topic 4. Cost of product and product price
 - Topic 5. Finances of the enterprise. Financial position of the company and ways of its support
 - Topic 6. Marketing and product promotion
- Section IV. Control of the company's activities
 - Topic 7. Evaluation of the company's performance.

According to the logic of the program, at the beginning of the course the student absorbs the content of those events which are the main characteristics for making business. This is the resources, product, production, exchange, needs, consumer and producer, economic efficiency, economic cycle, etc. Then he meets with the processes and the phenomena which are inherent in a market economy, named: the demand, the offer, the market price and the market incomes, money as an economic phenomenon, business activity, as well as incomes and expenses market infrastructure, etc. Finally,

student gets an idea of functioning of business activity in the sphere of economics, advantages and threats for some enterprises, which are related to the market relations in the state and globalization processes in general [5].

The interactive education of the course is conducted based on professional software product protection business simulations ViAL+ of Company of Intellectual Technology [6]. This software allows to create favorable conditions that close to the real. Children become conditionally heads of enterprises and begin to develop it, their goal is to create a strong, successful and competitively able enterprise.

One of the sections of the course is the research of the marketing and sales department, which includes studying the problems of efficacy, designing packaging of the products.

Every year pupils increase in understanding of entrepreneurship and scale of business decisions. After course of entrepreneurship pupils can create real advertising video clips of business, create business plan and start own enterprise. During 2016-2020 years there was more 710 pupils of 7-11 classes from school numbers 16, 19, 32, Viktoriya-P. At the first time we planned create program only for 8-11 classes. But during adaptation of program we open program for 7 classes and closed for 11 classes. Because youth (11-12 ages) want to discover practical world and receive real skills for life. But for school-leavers there are more important prepare and pass external independent testing (ZNO).

After finished courses of business we questioned pupils. And near 78-80% of pupils evaluated themselves level of business-skills as good and very good (8-10 point from 10). In these results, we must make correction for adolescence. Because teenagers like absolute themselves results. Interesting fact, that who self-assessment maximum (10 from 10), don't need in lessons of entrepreneurship.

But we have main result—increasing of faith and willingness to start own business.

During realization of programme of entrepreneurship had some problems:

1. Need of preparation of teachers to using of business-simulation and increasing computer skills.
2. Pupils 13-16 ages (8-10 classes) have low and average level of computer skills (need for using of business-simulation). More teenagers didn't know about mail, Google products, specialties of download of files in Google Chrome, functioning of OS Windows. As result, pupils had technical problems of using business-simulation. Also simulation had some problems during of using by participants.
3. Schools had problems with limited of computer classes. Available computer can use only for discipline "Informatics".
4. We hadn't adapted methodical materials— only methodic of using business-simulation ViAL+ and we could use only material recommended by Ministry of Education and Science.

How we could and decided these problems:

- when started of projects, the teachers discussed the concept, hypothesis, scientific apparatus of research work and outlined the expected results. The orders of the heads of educational institutions - participants of the experiment - approved the

composition of creative groups for the implementation of specific tasks of experimental work in various fields of activity.

- teachers in the remote and semi-intensive form could increase their own qualifications in used ICTs (business simulations) and better understand the aspects of applied enterprise management, which would then be successfully implemented in the learning process. Also teachers took part into yearly All-Ukrainian Business-Tournament “Strategy Firm” and also approbation of all nuances of simulation [4].
- for improving better interaction between pupils had the opportunity to create a joint site devoted to the implementation of the problem "Development of Business Education in Ukraine as an Element of the State Policy for Promotion of Entrepreneurship Development" (https://sites.google.com/a/viktoria-p.klasna.com/biznes-osvita_viktoria-p).
- for adaptation of pupils to using of business-simulation we have special trainings of computer literacy (using of Google products and mail) and using of business-simulation;
- especially for realization of project Department of Education of Kropyvnytskyi gave computer classes for school #16. And this step very help for development of course of lessons of entrepreneurship, because this computer class used only for its lessons;
- and we'll plan to create adapted methodic materials for lessons of entrepreneurship in 2020.

During 2016-2020 our teachers could to rise in career. For example, teacher of mathematics of School #16 O. Zadorozhnyi was semi-director of City Methodical Centre, semi-director of School #16, and S. Pustovoyt was semi-director of School “Viktoriya-P”, teachers of our commands regular took part into International Festivals and Exhibitions.

In order to familiarize with and further the implementation of international experience, on November 30, 2016, Project Manager V. Pazdrii participated in the final awarding of the best projects for the implementation of financial and entrepreneurial education The Global Inclusion Awards 2016, organized by the International organization Child and Youth Finance International in Stockholm , Sweden. Within the framework of work at the conference and during the final award, contacts were established with representatives of educational organizations, central banks, ministries of education, and also the Ministries of Finance of different countries from the USA to Asia and Oceania.

3 Informal education of entrepreneurship

During realized formal programme of entrepreneurship we saw that need another forms of interaction between pupils and real businessman. During experimental projects also were realized:

- open lessons, methodical seminars for school principals of the best Ukrainian secondary schools, gymnasiums and colleges (2019), Deputes of Ukrainian

Parliament (2016, 2017), local seminars for directors, semi-directors, teachers (2017-2019);

- competitions of advertising, products for pupil's trainings companies. Participants of this events were pupils and teachers. But experts of competitions were owners, TOP-managers of TOP companies of Kropyvnytskyi and Ukraine and public activities;
- 5 local business-tournaments at the winters 2016-2019 years were classic competition of entrepreneurial and managerial skills such as All-Ukrainian Business-Tournament "Strategy Firm". For the entire period 2014-2020, 12890 pupils, students, teachers, teachers and teachers were enrolled. In the course of preparation 79 trainings and seminars for 3097 teachers and heads of educational institutions were held. This competition very good describe in [5];
- three Summers Schools of Business Leadership for teenagers 13-17 years old during June of 2017-2019. Near 360 teenagers became participants of this events. Summer School Business Leadership became innovative form of summer school for Ukraine. Program of School consisted of five parts: 1) theoretical training; 2) practical training in Business-simulation ViAL+ and 3) preparing advertising clips; 4) excursions to largest, middle and small enterprises; 5) consulting real farmer company.
- Entrepreneurship Forum 24'th of November'18 – more 250 participants, includes first persons of politic, business elite and teachers, principals of schools [5].

4 Using simulation for youth 16-19 ages in colleges and universities

Business-simulation is very good instrument for economic practice for colleges and universities with economic specializations. The whole process of practice with business simulation occurs systematically and is divided into periods that reflect one quarter of the virtual company's activity. In real terms, the period begins when participant received simulation's start file and finished with the day and hour specified in the practice. A ready-made decision (in the form described by the instruction) must be made and sent by the given day and time to the e-mail address specified when saving the file or in automatic mode.

During the period of participation in business simulation ViAL+ participants goes through several stages:

- educational stage during first three periods;
- adaptation to the simulation environment during 4-7 sessions takes place;
- formulate by participation an integrated vision of the company as a system, which, simultaneously, consists of interrelated functional units during 8-10 sessions;
- an understanding of the cause and-effect relations in economic management of the company in a competitive market environment (15-18 sessions);

- after the 20th session the participant can consciously implement and correct the earlier formed plan of action, he begins to professionally analyze the results;
- the reinforcement of acquired competences and practical skills is observed after 25 sessions. [7]

During 2016-2019 business-simulation ViAL+ used for student of I courses in Kyiv National Economic Universities named Vadym Hetman as part of disciplines “Enter to profession” for Business-Economy and Entrepreneurship. Every year we make self-assessment of their level of skills and compared to the level of self-esteem of students (Table 1).

Table 1. Results of Pupils and Students Self-Assessments of Their Level of Skills (2016-2019)

Skills	Average points of self-assessments					
	Before using of simulation		After using of simulation		% changing	
	Pupils	Students	Pupils	Students	Pupils	Students
Leadership	7,6	6,99	8,22	8,00	8,16%	14,50%
Time-management	8,1	6,53	8,72	7,78	7,65%	19,18%
Team building	7,5	7,09	8,39	7,78	11,87%	9,67%
Team working	8,5	7,87	8,56	8,52	0,71%	8,26%
Entrepreneurship skills	7,1	7,30	8,94	7,74	25,92%	6,00%
Purposefulness	6,1	7,80	8,78	8,67	43,93%	11,07%
Making decision	7,3	7,22	8,61	8,00	17,95%	10,75%
Good to negotiate	8,05	5,75	8,67	7,67	7,70%	33,33%
Understanding of company	7,6	8,59	8,78	9,30	15,53%	8,20%
Understanding of production	n/a	7,14	8,56	8,96	n/a	25,45%
Understanding of marketing	n/a	7,93	8,94	9,56	n/a	20,43%
Understanding of finance	n/a	7,55	9,17	9,22	n/a	22,11%
Understanding of HR	n/a	7,72	8,39	9,22	n/a	19,40%
Understanding of accounting	n/a	7,32	8,33	8,78	n/a	19,98%
Understanding of competition	n/a	8,82	9,72	9,48	n/a	7,55%
Understanding of R&D	n/a	6,51	9,17	8,37	n/a	28,51%
Understanding of purpose of R&D	n/a	8,21	9,11	9,22	n/a	12,32%
Understanding of pricing	n/a	6,34	9,33	8,48	n/a	33,73%
Understanding of forming of marketing budget	n/a	5,05	9,22	8,04	n/a	59,07%
Understanding of forming of distribution network	n/a	5,70	8,00	8,37	n/a	46,92%
Understanding of overdraft	n/a	3,53	9,44	8,59	n/a	143,67%
Can you make company of profitable?	n/a	6,43	9,11	8,19	n/a	27,21%

The average level of self-assessments in student and pupils are different and more low, because students evaluated more really. And also we have increasing of self-awareness of their occupation and perspective of education. When we monitored level of motivation of student, that it was higher than in normal situation.

In 2020 years we provide economic practice with business-simulation for students of College of Information Systems and Technologies by KNEU. 73 students took part in weekly intensive practice. The average level of useful for person was 6,68 point

and 7,6 point (from 10) for future education and development. It very interest that who evaluated higher could recommended for future using. The main positive perspectives for students are:

- Ability to make decisions and formulate strategies;
- Interest in managing a training company in the context of approaching reality;
- Approaching real market conditions and competition;
- It was fun to grow your business through business simulation, to lead this business to success, to reflect on your actions, to watch the results of your right actions;
- Testing knowledge and skills;
- Gambling interest;
- Feeling of entrepreneurial spirit;
- Interesting tasks and the opportunity to do your business;
- Be able to see the rating of their competitors.

For students have some problems:

- enter to practice and technic conditions and requirements;
- need of all-day online support;
- not all persons can took part independence and quickly

5 Conclusions

The developing of entrepreneurial skills of youth 14-19 ages is really and need for Ukraine. This branch of activity is one of the priorities of the concept of the new Ukrainian school. And our command became realized it. We did first steps and the first achievements.

The main result of our joint work should be a full-fledged program on the development of entrepreneurship for 8-11th forms and finally inclusion Ukraine into a full process of the development of business education of the European Union.

Summing up, we would like to stress that especially important today is the economic education man who at the basis of acquired economic knowledge will be able to: to realize his role in economic processes, to take his place in the society; to handle and analyze economic information; to be guided in economic messages and programs of the government; to "deal" with the key economic role; to engage in a civilized relationship and to make knowledgeable decisions as for self-realization in professional and personal plan, and in the interests of society. Because Economic literacy today became an integral part of education citizen and Economic Education and Culture of the population is a necessary condition for building an economically strong and free state.

Business-simulation can help for youth 14-19 ages to form entrepreneurial skills, because:

- easy game and interest format of lessons, seminars, distance education;
- really conditions;
- can online format.

But we have problems:

- technical preparation and conditions;
- youth don't want to delve deeper in economy;
- need permanent technical and organization supporting
For providing of business-simulation into entrepreneurship education need:
- development of information campaign for forming positive and corrective attitude to entrepreneurship.
- system of trainings about ICT and simulation technologies, entrepreneurship for teachers, directors and their deputies, specialists in educational methods, pedagogical scientists.
- providing part of entrepreneurship education into New Ukrainian Schools.

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