

# **GAME-BASED LEARNING FOR SOFT AND HARD SKILLS DEVELOPMENT IN LLL IMPLEMENTATION**

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## **Abstract**

The article describes theoretical approach and practical instrument for individual education system creation aimed at pupil/student who is interested in future professional career. The game form is encouraged to use as an effective method for soft and hard skills development. The approach would help to improve the socio-economic life conditions of the population by improving the balance on the labour market.

Keywords: skills, game-based learning, career guidance, LLL.

## **1 INTRODUCTION**

Youth marginalization, high level of young people unemployment, absence of demand for graduate form vocational education specialists, structural unemployment when along with large number of unemployed people there is a great number of vacancies - these are the crucial issues that developed and developing countries face. Such organizations as ILO, Cedefop, ETF contribute to this problem solution for the grate scale. They focus on the provision of close collaboration of labour market participants by conducting surveys, skills anticipation, modernization of curricular etc.

The solution for abovementioned problems could become planning of quantitative and qualitative labour market and education system parameters. An important result of forecasting region and countries social and economic development should be dissemination of forecasting results information in a simple for each individual way. Besides person-centred approach and building-in of a person into future economic development should originate depending on his/her personal potential and abilities, that would result in rising of labour market balancing, employability level of graduates, decreasing of labour market tension, rise of personal income and human capital quality.

Modern tendencies of technology development and widespread of IT-technologies allow providing information dissemination on labour market requirements to general public. And following a leading trend in education – the use of game-based learning environment – allow reaching better results.

## **2 PROJECTION AS AN INSTRUMENT TO OVERCOME LABOUR MARKET MISMATCH**

Russian economy faces problems that are crucial for many foreign countries: population ageing, productivity gap, globalization [1]. But the most serious problem of contemporary days is staff mismatch on the labour market that causes a number of consequences. Mainly it reveals in structural and hidden unemployment as well as low employability level of youth (e.g. in 2013 the level of unemployed graduates with higher education to average graduates number with higher education in Russia was 7,1%, while in some regions this number reached 26,9% [2]).

Problems of the social and economic development associated with labour market mismatch could be overcome through forecasting of quantitative and qualitative parameters.

Russia has good experience in the field. Foreign mathematic (macroeconomic) quantitative forecasting techniques correlate with domestic Russian development [3, 4, 5]. Currently there are few schools in Russia that implement macroeconomic forecasting of the economy needs for skilled workers [6]. Among them: the National Research University Higher School of Economics (HSE), the Institute of Economics of the Russian Academy of Sciences (IE RAS), Budget monitoring center of Petrozavodsk State University, and a number of other research and consulting organizations.

Currently in Russia to obtain projection, estimates of the labour market macroeconomic forecasting is used, as well as labour resources balance forecast, expert assessment method and the method of

foresight. A common feature of existing forecasts is that most organizations build quantitative projections of skilled workers by level of education and economic activities.

Staffing needs projections methodology for the country and its regions is based on econometrics, based on a "required labour force" approach, when as input parameters are used the results of the production of goods and services sectors macroeconomic forecast. In addition, the direction of forecasting qualitative parameters of the labour market also develops – skills demand anticipation [7]. Application of the skills anticipation approach and the formation of in-demand skills lists, followed by training on this basis in vocational education system is an important direction of the forecasting system development [8].

Information about skills needs is necessary for a wide range of participants of socio-economic activities: employers, education authorities, politicians, federal and regional executive authorities for the development and modernization of vocational education programs in the Russian Federation. Also this information is especially important for the population, which is studying in educational institutions or wants to change the already acquired specialty or build their individual educational path. The better all stakeholders are informed, the better decisions they can take. The efficiency can be equally high for both the individual and for society.

Development of forecasting system in Russia reflects global trends in forecasting. In Europe, forecasting is developing along two parallel tracks: a quantitative and qualitative forecasting. This is necessary to overcome the imbalance by various criteria: the overproduction or underproduction of skills, qualifications and educational attainment mismatch, too high level of education for certain occupations, etc. [9].

For Russia and the developed countries it is an important question - how along with well-developed forecasting system to disseminate the results of forecasting in an accessible form, to bring them to each individual?

This is important to ensure that all relevant actors - government, business, educational institutions, and educational organizations - could equally use this information. This information presentation is especially important for individuals - pupils, students, the unemployed, and people planning to change or develop a career path. Possession of information about the current and future labour market conditions will allow for 3-5 years to get demanded in the future specialty, to develop your career successfully and fulfil the potential of each person.

### **3 NEW APPROACH TO CAREER GUIDANCE IN MODERN CONDITIONS**

Effective way to overcome the skills mismatch is career guidance for citizens using the forecasting results.

Vocational career guidance combines career consulting and occupational information. Career counselling allows getting a portrait of the individual psychometric recommendations on areas of employment. Occupational information allows getting diverse information about employment, job functions, and the approximate level of salaries. Thus, the individual is faced the problem to get a science-based information on trends of socio-economic development, and especially data on forecasting of occupations development to choose their future career path.

The main objective of the approach is to increase the efficiency of traditional pupils/students education by further continuous development of skills in demand during various periods of study process and even when it is completed.

The study of foreign experience in the field of career counselling (France, UK, USA, Finland, etc.) allowed obtaining the following conclusions. These countries set up specialized centers, develop national program/framework/vocational guidance system of the population; have well-developed socio-economic aspects of vocational career guidance, focusing on the needs of the market, the "market order".

Career guidance in EU is focused on the economy, in Russia it is the person-oriented but without the economy requirements. At the same time, there is a need to integrate these two approaches. The article describes theoretical approach and practical instrument for individual education system creation aimed at pupil/student who is interested in future professional career. The approach name is "Smart Career". It is important that abilities and vocation of person are revealed together with skills and knowledge gaps that are lacking for successful learning and following occupation acquisition. The

basic idea is that among problem diagnostics – answer the question of skills shortages, pupil/student receive recommendations to perform list of trainings. Trainings would help to overcome limitations of in-process education would allow to get new knowledge, abilities and skills necessary for building of successful career growth trend.

The following approach to building an individual career path is relevant: it is based on an analysis of the interconnected system of the economy needs, opportunities (abilities) and desire (ambition) of now days student and future professional. Mainly in this case is to ensure the principle of three components combination: WISH, ABLE, NEED. The proposed system has a clear humanitarian (human) orientation.

Stages of implementation of the proposed approach are as follows:

- Development continuous competency model that combines federal governmental educational standards, economic activities and occupations;
- Formalization of career guidance models and comparing them with the continuous competency model;

Combining of forecasts and continuous competency model allows generating a set of information materials on the choice of future profession for each individual from the positions:

- Predisposition and personal preferences ("I WISH" and "I AM ABLE");
- The future demand for the occupations ("NEED")

The use of a vast array of project data, including information on the current structure of the labour market and educational services market, forecasts of technological development, continuous competency model, enables to provide person-centered approach.

The advantage of the approach is interdisciplinarity, suggesting primarily focus on personality. For the first time it is possible to compare the results of formal dynamics of personal growth of pupils and students with socio-economic development of the region, which will lay the foundation for career growth of personality. Developed technology of adaptive forecast-oriented career guidance for students based on personal growth and changes in the environment.

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The proposed approach emphasizes not only the content but also the presentation form that should be best adapted for educational purposes.

#### **4 GAME-BASED LEARNING SOLUTION FOR SOFT AND HARD SKILLS DEVELOPMENT IN PERSONAL CAREER PATHS**

It's no secret that for many years in Russia the large volume of graduates for unclaimed occupations is trained. At the same time it is known fact that parents are willing to spend money on their children's future (today half of university students are studying on a paid basis). While parents want this future was still promising.

To implement the wishes of parents, taking into account the psychology of mass consumption and the growing computerization of society, line of mobile IT-service for professional employment was developed. Since the development trend of the consumer society became irreversible, we help ordinary consumers became literate consumer by improving the efficiency of spending on education.

As a tool that would ensure the implementation of the «Smart Carrier» approach for pupils/students based on their psychology it is proposed to develop IT-service for mobile devices. This service will allow to present serious content in a frivolous, playful way. Thus, it is proposed to use the game as a system approach to expert assessment of the current status and career prospects for user recommendations development, provide personal career growth.

This is highlight of the project, reinforcing its uniqueness to several factors.

The first factor takes into account the psychological peculiarity of person - what is being done in the game, is not serious, and is a mere joke. So the game forgives that in real life we cannot afford: to

make a mistake. This type of application takes off responsibility from the Game user for the consequences of making wrong decisions because he just "playing" in getting an education and finding a good job. Respectable person would doubt this "serious" service as an official career application. But he/she can afford it themselves under the guise of the game - in fact no one is responsible for the result.

The second important factor - is learning while playing! The game involves the passing through the levels, collision with competitors and conflict resolution. So there would be great use of the scenario "What if ...?", as the price of the segment selection errors of nasty way of life in the real world can be immeasurably high. Thus, the game will serve as preparation for real-life testing, and allow multiple methods of trials and errors to work out quite a successful career strategy. In accordance with the "WISH, ABLE, NEED" principle, it would take into account the player psychometric features, skills levels and demand for them in the future. Analysis of alternatives in decision-making would increase the diversity of management and increase the likelihood of selecting a winning strategy.

The third factor is scalability of Game while person's professional growth. First we enter the game under schoolboy middle and high school avatar, then perhaps the entrant, then - a student of various courses of the university or college, etc. In a continuation the project would be expanded to many games heroes like retraining and retraining workers, employers of small/medium/large business, manager or director, who decided to acquire new professional skills and update their education. This form allows not only implementing the strategy of LLL, but also pushes it, forcing to receive new scores, to gain their maximum amount to the end of the game.

Confidence in the successful implementation and broad introduction of this form of educational services provides a simultaneous combination of growing information society and behavioural economics factors:

- Striving for comfortable services consumption
- Delegating the right to think for them and make decisions
- Following fashion, mass entrainment
- Widespread mobile devices
- Optimization of household expenditure on education

The main initial customers target groups of such a service are individuals: students of secondary and high school, starting to plan their professional future at an early age that it has become fashionable and of course, their parents. And relevant group closest to the need to work is senior course students and graduates of universities and colleges. Upon successful validation of the proposed approach it is planned to expand the target audience, including it in the adult population, which also need to update skills

The project of providing these educational services in the game form would be implemented in the form of a mobile applications line based on IT-services. Substantial knowledge-based part of the project will rely on powerful Russian expert-analytical network system of monitoring, analysis and forecasting of labour market needs in highly qualified personnel and capabilities of the system of vocational education to ensure them.

## **5 CONCLUSION**

The welfare of society and its successful economic and social development depend on how a person could realize themselves on the labour market. At the same time the psychological characteristics of individuals is important and also should be considered in this process - operating within the "WISH, ABLE, NEED" concept.

Modern society requires a special approach for problem solving. To overcome the problems economies face information on projections of labour market development, in particular the promising and popular at present and in the future occupations and skills should be widely disseminated.

Wide information dissemination in the modern world is based on the IT services and technologies. Moreover the form of information is important - the game form is the most simple and affordable for a large part of the population of different age groups and social strata.

Game-based learning for soft and hard skills development in long-life learning implementation could become the future of education technologies and the proposed method describes a solution that

combines a person-centered approach to career guidance, the main trends in the training and development of technology.

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