

Benchmarking of the educational process in the field of digital economy in Russia

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Abstract — The article presents the results of benchmarking educational programs for the digital economy of the leading Russian universities specializing in economics and management. The aim of the study is to identify the key problems about personnel structure preparation for the digital economy and to rationalize approaches to their solution. The main theoretical and methodological and practical problems of assessing the readiness of the country, universities to the digital economy, as well as measuring the impact of digitalization on the development of the country, regions, universities, training specialists for the digital economy were identified. The modular approach to the development of educational programs of training specialists for the digital economy, which is based on the requirements of employers, market demand for specific job positions and professional standards. Digital economy needs not only technological development, but also specialists capable of managing using digital technologies. In this connection, it is necessary to adjust the priorities in terms of training bachelors and masters, retraining of teachers and practitioners in all educational programs. The problem raised in the article requires further discussion by scientists and practitioners

Keywords — *benchmarking, modular program, advanced training, system of additional professional education, levels of education, digital economy*

I. INTRODUCTION

Personnel structure is a critical factor in the progressive development of the digital economy. Training of "digital" personnel at the level of bachelor, master, systems of additional professional education and retraining of teachers should ensure the consistency of such work. In the "Road map" of the Program "Digital economy of the Russian Federation" and the action Plan in the direction of "Personnel and education" a special priority is given to the training of IT specialists, the production of which is planned to increase from 2024 to 120 thousand per year [4,7,8]. The task is ambitious, however, looks somewhat eclectic, taking into account that the digital economy needs not only technological, but also substantive development and, first of all, in the field of economic management. There are much less specialists which ready and able to manage using digital technologies and

their training is practically a significant and urgent task. The readiness of education for the digital economy is a key driver for the country development, as it determines not only the degree of digital technologies development, but also the level of their practical use in government and business. Benchmarking of training practices for such specialists, presented in this article, was an attempt to identify key achievements and challenges in this area for the educational process modernization.

II. LITERATURE REVIEW

The study shows a small number of scientific papers in this subject area. At present, we are just beginning to see the intensification of the formation process of methodological and theoretical provisions relating to the digital economy. In the last decade, among scientists and practitioners there was a discussion in the following areas:

- essence, content, role of the digital economy for the society development [15, 16];
- staffing problems of digital and innovative economy [2, 3, 11, 13, 14];
- conceptual approaches and practice of implementation of educational programs for industries and fields of activity (for example, [1, 5]).

It is obvious that the problem requires further discussion by scientists and practitioners, and the existing research and development need to be generalized and systematized. One of the first positive examples of this kind is the work [12].

III. METHODOLOGY

A comparative analysis of the activities of universities in the field of training bachelors, masters and advanced training of practitioners and teachers for the digital economy was chosen as a method of research. The study involved 52 universities in Moscow and about 20 leading universities in other cities of Russia, which offer educational programs (retraining) in the field of economics and management. The

main data are obtained from official documents and sample surveys. The information obtained was verified on the basis of data presented on the official web resources of universities.

IV. RESULTS

Higher education readiness for the digital economy

Comparative marketing research is required to improve the efficiency of the training process of "digital" specialists, as well as for any production process. Their goal is to identify the best practices and use this experience in the modernization of education. The benchmarking carried out by the authors, which implements this goal, showed a lack of such studies, which makes it difficult to focus the Program "Digital economy" on practically important and, very importantly, achievable goals. The analysis is carried out in the following areas: retraining of teachers and practitioners; educational programs of bachelor's and master's degrees.

The level of training of teachers is a critical basic condition for the success of the Program "Digital economy of the Russian Federation" and the action Plan in the direction of "Personnel and education" [8,9]. The analysis showed a clear lack of opportunities for professional development of the teaching staff of universities both in terms of the formation of basic information competencies (working with text editors, spreadsheets, e-mail, Skype, preparation of presentations, computer testing of students, etc.), and in terms of the development of skills in the field of professional activity. A small number of existing programs are mainly focused on the development of basic information technologies. In fact, there are no programs for the development of skills in the field of professional activity.

For example, there are less than ten programs in terms of General methods of teaching using information technology in the amount of 16-72 hours (two at the Financial University under the Government of the Russian Federation, one at Moscow State University, one at leading universities in St. Petersburg) on the market of higher education in the field of marketing. Methods of digital marketing teaching are offered only by the State University of Management (Marketing: from education to professional activity (digital marketing communications) and the Volga Region State University of Telecommunications and Informatics (Internet marketing, Internet trading, E-Commerce basics, Electronic payment systems).

Thus, it can be stated that there is no system of teacher training as such and a weak inflow of specialists directly from the digital industry to the higher school. One of the reasons for this situation is that there is no professional standard of the teacher in the country. It is planned to develop only by the end of 2019, as well as educational programs.

As a result of the study, the low activity of universities in the development and implementation of training programs for practitioners is established, which is confirmed by the insufficient number and variety of programs. Table 1 presents the possibilities of training for economists and marketing experts of the companies. Three programs have HSE Foundation "Digital Platform"; two programs at MSU, ANO DPO "Institute for the digital economy", Business school RMA. The exception is MSTU, offering 20 short-term and long-term programs. Foreign universities are also present in

the Russian market. The main part of the programs is not implemented in universities. The conclusions of relatively weak practical orientation of higher education programs become obvious.

TABLE I. EDUCATIONAL PROGRAMS IN DIGITAL ECONOMY AND MARKETING FOR PRACTITIONERS (16-250 HOURS)

General specialization of the program	Program name (University, company)
Digital economy	Specialist in the digital economy (International Academy of Assessment and Evaluation) Digital economy: new opportunities for professional growth (MSU) Digital economy: innovative solutions for business (MSU) Digital economy (URFU) Digital education, Digital economy (ANO DPO "Institute of digital economy»)
Marketing and media	Internet marketing and business communications (Novosibirsk state University of Economics and management) Internet marketer, Internet promotion specialist, SEO specialist, SMM specialist, Director, website promotion, promotion in social networks, contextual advertising (MSTU) Digital marketing (digital marketing) (Financial University) Marketing and production in digital media; digital project managers (HSE)

Consider the situation with the training of economists and managers for the digital economy. In 2015, 8 Russian universities (HSE, Moscow state University, MIPT, MISIS, ITMO, SPBU, Spbp, URFU) initiated the process of creating a National platform of open education [6], which currently hosts 322 online courses in the main disciplines studied by students at Russian universities. There are other educational platforms: for example, Eduson <https://www.eduson.tv/>; Digital October <http://coursera.digitaloctober.ru/>; University in your pocket <http://moyuniver.ru/>; Lecture <https://www.ahhh!lektorium.tv/>; University without borders <http://universitetbezgraniz.ru/>; Get2Know <http://get2know.ru/> [10]. However, for the development of professional competencies they are useless, because they are focused on traditional disciplines and do not take into account the specifics of the digital economy.

The results of the benchmarking of educational programs of 152 universities in Moscow showed that 52 universities at the undergraduate and graduate levels have educational programs in Economics and management, and only 11 programs in undergraduate and 20 in graduate are related to the digital economy (table 2).

TABLE II. TRAINING PROGRAMS FOR ECONOMISTS AND MANAGERS IN THE FIELD OF DIGITAL ECONOMY AT THE UNIVERSITIES OF MOSCOW

General specialization of the program	Program name (University)	
	Bachelor course	Master course
Governance of the state and economy	Digital economy (people's friendship University, Ranepa) Digital government (Ranepa) Economics of new technologies (MSTU)	E-economy (Russian University of Cooperation) Digital economy (Ranepa) Digital technologies in state and municipal management (MIPhI)

Enterprise and business management	Digital innovation in enterprise management (HSE) Production/ investment management at enterprises of high-tech industries (MAI)	Management of high-tech business (Stankin) Engineering of social processes at enterprises of high-tech industries (MAI) Digital transformation of business (REU) Management of e-business and Internet projects (REU) Technological entrepreneurship (Ranepa) Flexible control technologies (Ranepa) Digital design in management (Information and analytical management) (Ranepa)
Financial management, audit	Business valuation in digital economy (Financial University)	Management of financial technologies in the digital economy (REU) Corporate Finance in the digital economy (Financial University) Digital technologies of the financial sector economy (MIPhI) Breakthrough financial digital technologies (Ranepa)
Marketing, trade, entrepreneurship	Digital marketing communications (SUM) Digital technologies in trade (Ranepa) Technological entrepreneurship (MIPhI)	
IT management		Information technology management in the digital economy (Financial University) Big data systems (HSE) Big data systems in the economy (Ranepa) Business Informatics in the digital economy (MIPhI) Technology Big Data and business Analytics in the management of companies (SUM)

V. DISCUSSION

In general, the results of the analysis showed that the system of training economists and managers, retraining of university teachers and practitioners for the digital economy is in the process of formation, structurally and substantively changing slowly and demonstrates low involvement in the specifics. We believe that this is due both to the lack of segmented demand and to the underdevelopment of the basic conditions for the organization of an effective educational process.

The authors propose a conceptual approach to the formation of educational programs in the field of Economics and management, focused on digital technologies and tools. It is based on the requirements of employers, market demand for specific positions and professional standards currently being developed.

It is important to take into account the balance of theoretical knowledge and practical skills. Excessive emphasis on professional standards in higher education increases the employability of graduates for specific positions, but narrows the general professional outlook and reduces the chances of a successful career in other positions when forced to change jobs or positions. In accordance with this principle, the program should be structured according to a modular scheme, in which the modules consist of disciplines (subjects) that form the competence to work in certain positions. We distinguish two types of modules – basic and specialized. The authors proceeded from the need to create the foundation of the profession, based on basic knowledge, in the development of program architectonics. The presence of basic modules is a mandatory option of the educational program, as they allow you to create basic competencies, learn the functionality of the profession and increase job security. Basic modules that define the training, focused on the standard "non-digital" position. Specialized modules are targeted at the most popular market "digital" positions.

The proposed approach has been tested in the education of specialists in digital marketing communications at the State University of Management.

VI. SUMMARY

The study concluded that there are two groups of problems in the field of staffing of the digital economy. The first group, with the need to develop methods for assessing the level of readiness for the digital economy of companies, industries, fields of activity, as well as measuring the impact of the digital economy on the development of the country and its regions. The second – with the development of models of professional competencies of teachers, bachelors, masters. The article presents a methodological approach (modular) to the development of educational programs for the "digital" specialists training for Economics and management, taking into account the triad - "requirements of employers–market demand–professional standards."

The solution of practical problems requires more effective solutions to the restructuring of the "Road map" of the Program "Digital economy of the Russian Federation" in the part of the project "Personnel for the digital economy, which will create incentives for a sharp improvement in the supply of training programs. The project requires further development in part:

- allocation of priority areas of training (retraining) in the field of practical use of digital technologies in economic management;
- definition of basic universities to carry out this work;
- organization on their basis of "Schools of digitalization" with the allocation of the necessary resources.

The practical significance of the study lies in the possibility of applying the conclusions and proposals for the process organization of training and advanced training for the digital economy.

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