

Digitalization and Self-regulation as Elements of the Future Educational Process Architecture

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Abstract: The research objective is to determine the role of the phenomenon of global digitalization and the institution of self-regulation in the process of education formation for sustainable development. The main methods used are analysis and forecasting. The main result of the research is that the significant influence of the digital economy tools and self-regulation mechanisms on the creation of the future educational process architecture is proved. Conclusions. The correspondence of sustainable education competencies with the key competencies of the digital economy and the basic components of EU citizens' digital competence is established. The use of delegated self-regulation mechanisms in the educational sphere is justified by the example of reference universities creation and the implementation of professional and public accreditation. On the basis of a sociological research, the factors that prevent the formation of students' "digital" competencies are identified, and possible ways to overcome them are determined.

1 INTRODUCTION

According to the UNESCO position, in order to achieve sustainable development, along with advanced technologies, political will and financial resources, a different way of people's thinking is necessary. This requires providing quality education at all levels regardless of social conditions. It is one of the main mechanisms for achieving the 17 Sustainable Development Goals that are included in the 2030 Agenda for Sustainable Development.

Education for Sustainable Development (hereinafter also referred to as sustainable education, ESD) can be defined as an interdisciplinary teaching methodology that covers the complex social, economic and environmental aspects of the formal and non-formal curriculum (Obrazovanie v interesah ustojchivogo razvitiya, 2020).

2 RESEARCH METHODOLOGY

The methodological basis of the research is based on such methods of scientific cognition as analysis,

including temporal, synthesis, deduction, interpretation, forecasting, as well as comparative and sociological methods.

3 RESEARCH METHODS

3.1 Digital Competencies

The objective trend of modern education is the competence-based approach aimed at mastering the complex of normative competencies (Ershova, Enkova, Levushkin and Dzhindzholiya, 2020). Sustainable education promotes competencies such as critical thinking; the ability to continuously, systematically assimilate and update knowledge, skills, values, attitudes; imagining future scenarios; and making decisions on a collaborative basis.

These competencies fully correspond to the key competencies of the digital economy – communication and cooperation in the digital environment; self-development in conditions of uncertainty; creative thinking; information and data management; critical thinking in the digital

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environment. Their list was approved by Order No. 41 of the Ministry of Economic Development of the Russian Federation on January 24, 2020.

These digital competencies are in harmony with the European Digital Competence System for Citizens, also known as DigComp (Vuorikari, Punie, Carretero Gomez and Van den Brande, 2016). DigComp 2.0 defines the key components of digital competence in 5 areas: information literacy; communication and cooperation; digital content creation; security; problem solving (The Digital Competence Framework, 2021).

In 2020, the European Commission approved the Digital Education Action Plan (2021-2027) "Rebooting Education and Training for the Digital Age" (Digital Education Action Plan (2021-2027), 2021). As part of the strategic priority of the new plan "Enhancing Digital Skills and Competencies for Digital Transformation", DigComp 2.0 will be updated to include artificial intelligence (AI)-related skills, support the development of AI training resources for vocational education training (VET) and professional training, and other training program providers.

The preamble to the National Strategy for Sustainable Development of Education in the Russian Federation, designed by the United Nations Economic Commission for Europe, reflects that the development of ESD in Russia is based, in particular, on the existing educational standards, which reflect a number of imperatives of sustainable development.

It is noteworthy that the latest generation of educational standards provides for the mandatory study of "technological" disciplines. Thus, the federal State educational standard for higher education – Master's degree in the field of training 40.04.01 Jurisprudence (hereinafter referred to as the Federal State Educational Standard for Master's Degree in 2020), approved by the Order of the Ministry of Education and Science of the Russian Federation No. 1451 dated November 25, 2020, defines as a general professional competence the ability to apply information technologies and use legal databases to solve problems of professional activity, taking into account the requirements of information security. The formation of general professional competencies should be provided by the academic disciplines of the mandatory part of the Master's program, so the relevant courses will take their place in the curriculum of all universities with a Master's degree.

However, it seems that the "digital footprint" is not sufficiently traced in the universal and general professional competencies identified in the Master's Degree 2020 Federal State Educational Standard. The

authors of the article have repeatedly talked about the importance of forming the key competencies of the digital economy among graduates of the Master's degree, offering more appropriate formulations of them (Ershova and Enkova, 2020). Apparently, this aspect should be reflected in the professional competencies that are determined by the educational organizations themselves.

3.2 Self-regulation Mechanisms

In the aspect of considering the problems of sustainable education and taking into account the significant degree of independence granted to educational organizations in accordance with state educational standards, we project certain principles and categories of self-regulation institute on the activities of a modern university.

Over the past decade, there has been a consolidation of higher education institutions and the creation of reference universities. This process has much in common with the model of classical delegated voluntary self-regulation. And it is fully characterized by such general legal principles of self-regulation as: "freedom of self-regulation, combination of private and public interests, cooperation and equality of the parties" (Self-regulation of Entrepreneurial and Professional Activity, 2020).

The state-led reform is aimed, first, at optimizing the system of higher education and science by increasing the amount of budget funding by reducing inefficient spending; second, at the economic and social development of the regions by increasing the prestige and competitiveness of local universities. According to experts, the unification of educational organizations will allow to move from an industry structure to an academic system based on universities as diversified corporations of knowledge, meaning, science, technology, legislators of high living standards, creators of the future (GARANT, 2020).

The vector of higher education institutions consolidation is also typical for the EAEU. The Eurasian Economic Commission has identified a number of reference universities (for example, Higher School of Economics, the National Research University), on the basis of which educational activities for the training of highly qualified personnel should be intensified, there will be an expansion of research and expert-analytical activities (SHugurov and SHugurova, 2020)

Delegated self-regulation in the educational sphere is also evident in the implementation of professional and public accreditation of educational

programs. Thus, according to Federal Law No. 273-FL dated December 29, 2012 "On Education in the Russian Federation", such accreditation is carried out by the Association of Lawyers of Russia (hereinafter referred to as ALR) in order to identify and confirm the quality of education, the level of graduates training who meet the requirements of professional standards, as well as the needs of the specialized labor market.

The expert activity of ALR has brought significant results. 150 universities of 170 tested educational institutions received a certificate of public accreditation, the level of education quality of which was highly appreciated by employers from the legal professional community.

In order to ensure the objectivity and independence of professional and public accreditation, the ALR Expert Center for Assessing the Quality and Qualifications in the Field of Jurisprudence was registered in 2017. As indicated on the website of the Expert Center (<http://expertcenteraur.ru/>), its creation made it possible to delineate the powers between the Expert Center and the ALR and to create a system for making decisions on accreditation, free from conflicts of interest. Thus, the Expert Center carries out the examination; selects and trains experts; prepares proposals for improving the regulatory quality assurance of education and the methodology of accreditation in the field of jurisprudence. At the same time, the ALR retains the function of the accreditation organization – the certificate of professional and public accreditation is signed by its chairman.

4 DISCUSSION OF RESULTS

4.1 Difficulties in Developing Digital Competencies

Previously, the correlation between the competencies of ESD and the key competencies of the digital economy was noted. In this regard, it is appropriate to present some of the results of the sociological research conducted by the authors at the O.E. Kutafin University (MSAL). In 2019, 65 undergraduates were interviewed as part of the Competence-based approach to Learning research. The competence approach in education was positively evaluated by more than half (53.8%) of the respondents. 18.4% of respondents have no idea what it is, but they want to know. More than ¼ of respondents (27.7%) qualified

the studied approach as a formal requirement of educational standards.

In 2020, 121 undergraduate students and 44 undergraduates took part in Digitalization of the Educational Process sociological study. 3/4 of the survey participants said that they did not know the basic competencies of lawyers for the digital economy. According to 60.6% of respondents, the modern system of higher education allows only partial forming of the specified competences. 30.9% of the respondents expressed a negative opinion on this issue; 8.5% of the respondents answered it positively.

The respondents named the following barriers to students' mastering the digital competencies of lawyers: the lack of an adequate material and technical base at the university - 59.4%, the lack of sufficient knowledge and skills among teachers - 35.2%, the indifference of students to the innovations of the educational process - 29.1%, insufficient legal support - 25.5%.

It should be noted that the listed stop factors are qualified as negative systemic drivers of education development (in particular, the lag of educational standards from scientific and technological progress, the disadaptation of teaching staff, the lack of teaching profession prestige, low motivation of students) in the draft document "Key directions for the development of Russian education to achieve the Goals and Objectives of sustainable development in the education system" until 2035, published in February 2020. Federal Institute for the Development of Education of the Russian Presidential Academy of National Economy and Public Administration (Ustojchivoe razvitie v sfere obrazovaniya, 2020).

The problem of digital competence formation is international. We find references to literature and reviews of the current condition of research in the field of digital competencies in the works of foreign scientists (Oberländer, Beinicke, and Bipp, 2020). The urgency of digital issues was particularly evident during the covid-19 pandemic (Mishra, Gupta, and Shree, 2020). At the same time, it is obvious that the task of teaching digital literacy (Ershova, Tarasenko, Enkova and Trofimova, 2021). is equally important for both students and teachers (Tondeur, Howard and Yang, 2021). Note that this problem is the subject of research by foreign experts, whose works present multidirectional and dynamic strategies for improving the practice of teachers in the field of digital competence development (Howard, Tondeur, Ma and Yang, 2021). Ignoring the opinions and needs of teachers and students can lead to a digital gap, and subsequently to a digital gap between representatives

of different generations (Ertl, Csanadi and Tarnai, 2020).

The authors' use of empirical sociology arsenal made it possible, firstly, to conclude that universities, having taken a course for sustainable development, are at the initial stage of this process; secondly, to identify the key reasons that hinder the formation of digital competencies among students (also known as ESD competencies), and to develop a set of measures to overcome the difficulties that have arisen. It should be emphasized that efforts must be made at all levels and in all areas to achieve the intended goal.

For example, the Global Education Action Week 2021 (GAWE) was held from 26 to 30 April. The activities carried out were aimed at increasing state funding for education.

If one gives a positive example of a specific educational organization, then O.E. Kutafin University (MSLA) has developed local acts that allowed creating a full-fledged electronic information and educational environment, implementing educational programs using e-learning and distance learning technologies; scientific and methodological seminars, conferences, and symposiums, including student ones, are held to discuss critical questions of digitalization and sustainable development; in the framework of additional education programs, teachers have the opportunity to improve their digital literacy and explore the problems of sustainable education.

4.2 Integration for Sustainable Education

A striking manifestation of self-regulation in the interests of sustainable development was the creation in March 2021 of Innovative Jurisprudence Consortium to solve the problems of training highly qualified specialists, developing scientific and innovative activities in the field of jurisprudence, state and municipal administration. Due to the synergy of traditions and innovations, fundamental nature and interdisciplinarity, O.E. Kutafin University (MSLA), as the leader of domestic legal education, took the initiative to create a Consortium and became a reference scientific and educational center within its framework. The Consortium has already brought together more than 30 participants. The main objectives of the Consortium are formulated based on the concept of the sustainable education formation.

The Consortium is intended to become a unique scientific and educational ecosystem that unites the efforts of universities, research institutions,

organizations of the real sector of the economy, representatives of the business technology and other organizations, to exchange and implement best practices in the field of legal education and science, to create joint, including network, projects.

4.3 Increased Requirements for Professional and Public Accreditation

It seems that the activities of the previously named ALR and the Expert Center should not be limited only to checking the compliance of educational organizations with the requirements of the legislation – the level of professional public accreditation should be higher than the minimum requirements of educational standards.

For example, the mentioned Master's degree program in 2020, in comparison with the previous Master's Degree program in 2010 (Order of the Ministry of Education and Science of the Russian Federation No. 1763 dated December 14, 2010), in terms of requirements for personnel conditions for the implementation of Master's degree programs (hereinafter – MP), outlined a vector of liberalization, and sometimes deregulation in a number of positions. For clarity, the most significant indicators that have changed are shown in Table 1.

On the one hand, the removal of a number of bureaucratic barriers will allow organizations to review certain elements of personnel policy, independently building the provision of MP. On the other hand, reducing the requirements for teachers implementing Master's programs entails the risk of a drop in the quality of the educational process in the Master's program, which is a clear threat to the stability of this level of higher education. In this regard, it seems justified to develop a system of more stringent indicators for conducting public professional accreditation of educational organizations, in comparison with those recorded in the Federal State Educational Standard for Master's Degree Programs in 2020.

Table 1: Requirements for staffing conditions for the implementation of the MP.

| Name of the requirement | Content of the requirements for Federal State Educational Standard dated 2010 | Content of the requirements for Federal State Educational Standard dated 2020 |
|---|---|---|
| <i>Requirements for persons implementing the MP</i> | | |
| Basic education | According to the profile of the discipline taught by scientific and pedagogical staff | No requirement |
| Academic degree and/or academic title | ≥80% of professional cycle disciplines and research seminars teachers | ≥ 60% of teachers and persons engaged on other terms |
| Academic degree of Doctor of science and (or) academic title of Professor | ≥ 40% of professional cycle disciplines and research seminars teachers | No requirement |
| Admission to the organization's staff | ≥ 70% of professional disciplines full-time teachers | No requirement |
| <i>Requirements for the head of the MP</i> | | |
| Admission to the organization's staff | Necessarily | Provision is not specified |
| Academic degree and/or academic title | Doctor of Science and (or) Professor in the profile of MP | Academic degree, not specified |
| Work experience | ≥ 3 years in higher education institutions | No requirement |
| Maximum number of managed MP's | ≤ 1 MP at a time | No requirement |
| Advanced training | ≥ 1 time in 5 years | No requirement |
| <i>Requirements to the scientific supervisors of the Masters</i> | | |
| Academic degree and/or academic title | Necessarily | No requirement |
| Number of supervised Masters | ≤ 10 at a time | No requirement |

5 CONCLUSION

The initial postulate, according to which digitalization and self-regulation are integral attributes of the education concept for sustainable development, allowed the authors to draw the following conclusions:

- the formation of key competencies for the digital economy, provided for by the Russian legislation, correlates with the key components of the digital competence of the European Union citizens and means nothing more than the comprehension of sustainable education competencies;
- the use of digital tools makes it possible to introduce a project approach into the educational process, organize network educational activities, individualize the educational paths of students and, as a result, will lead to the introduction of a post-

competence approach to assessing the quality of education in the foreseeable future;

- the increasing complexity of the electronic information and educational environment created by universities will inevitably lead to the convergence of virtual and everyday reality in education;
- the use of classical delegated voluntary self-regulation model in the creation of reference universities in Russia and within the framework of the EAEU, as well as in the conduct of public professional accreditation of educational organizations, contributes to the optimization of the domestic higher education system, strengthening the competitiveness of domestic universities, improving the efficiency of training, improving the quality of educational products.

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