

ISCKMC 2020**International Scientific Congress «KNOWLEDGE, MAN AND CIVILIZATION»****MARKET OF COMPETENCIES IN MODERN ECONOMIC
THEORY: TARGET MODEL OR NEW REALITY?**

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Abstract

This article presents the results of a problem-search study of new trends and trends in the development of socio-economic systems and their reflection in modern economic theory. The information network structure of the modern economy forms the basis and technological foundations for changing the subject of the transaction in the most important market for the knowledge economy: the transition from the human capital market to the market of competencies. The transition necessitates a significant transformation and modernization of the entire infrastructure for the reproduction of human capital in all the variety of its elements. Vocational education systems are the first to take up this development challenge. The results of such a transformation become mandatory for the very possibility of advanced development. The formation of a market of competencies ensures an accelerated diffusion of knowledge and technologies produced by scientific and educational centres in the interests of ensuring an adapted transition to new technological structures.

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Keywords: Competence market, economic theory, education system, labour market, educational services market



1. Introduction

Acceleration of scientific and technological progress, the production of new knowledge and the introduction of its results into economic circulation predetermine the forced transformation of the systems for preparing human capital in all the variety of their elements. There is a transformation based on a social-economic demand for specific characteristics – the labour functions of this human capital, as well as on the forms of its attraction, application and modification. The labour market in its classical form as an element of the socio-economic system demonstrates its low performance in the interaction of supply and demand for specific labour actions (functions), skills and knowledge. The subject of the transaction in the modern labour market is increasingly becoming the competencies inherent in a particular person or group. From this point of view, the question of whether the competency market continues to remain a target model or is it already a new reality with new development challenges seems to be relevant.

2. Problem Statement

The formulation of the main task of this study is due to the need to determine the possibility and feasibility of using the term “competence market” as a new category of theories of “information”, “post-industrial” economy and “knowledge-based economy” in the context of the transformation of the phenomenon of human capital and its functionality in the modern economic system.

3. Research Questions

This study is devoted to the sequential solution of the following questions:

1. Prerequisites for the formation of a market of competencies.
2. The role of the competence market in modern socio-economic systems.
3. Priority tasks for the development of the national education system.

4. Purpose of the Study

The study aims to analyze and evaluate the definition of the “competency market” as a category that reflects irreversible changes in the markets of human capital, educational services and innovative technologies. The sequential transition from the labour market to the human capital market, and then to the competency market, is a natural process in the information-network economy. At the same time, the change in the subject of the transaction in the labour market, considered in its information function, entails a large number of changes in the ecological environment of educational systems.

5. Research Methods

The research is based on a theoretical basis, formed based on the postulates of modern concepts of economic theory, the theory of information economy, the theory of post-industrial economy, the theory of economics based on knowledge, elements of systems theory, the concept of a network society.

The research methodology is based on a neo-positivist-empirical approach focused on the study of real economic relations and processes. Research methods, in addition to general scientific methods, including observation and comparison, are represented by system-functional analysis, a group of formal-logical methods, dialectics, historical and logical methods, methods of scientific abstraction and concretization.

The information and empirical base of the study were the materials formed as a result of a monographic review and analysis of scientific and periodicals presented in Russian and international electronic libraries, as well as the authors' research, carried out within the framework of modelling systems for the formation and development of students' competencies in response to a request from leading employers.

6. Findings

6.1. Preconditions for the formation of a market of competencies.

Changes in the processes and procedures of interaction in the global and regional labour markets occur under the influence of changes in the market infrastructure itself. Around the world, for more than ten years now, the formation of a qualification framework for specialities that play a coordinating role in the labour market has been going on. The semantic load of the sectoral qualifications framework is to define uniform requirements for each specific skill level. Unity and transparency of requirements are necessary for all actors of the socio-economic system, directly or indirectly involved in the formation, development and use of human capital. So, for the verification and coordination of requirements, the mechanism of professional and public accreditation of educational institutions has been working for many years.

Another argument in favour of the requirements unification was the entire network nation and informatization of all spheres of the socio-economic system. This process naturally led to an increase in the speed of economic transactions, which, in turn, predetermined the need to reduce the optimum time spent on making an economical choice. Economical choice in the modern labour market concerns the problem of finding such resources that, according to a set of criteria, best meet the needs of the employer (Deligianni et al., 2019). Uncertainty in the labour market is special: in addition to the classical uncertainty of the market, it is also necessary to take into account the a priori uncertainty of the subject of the transaction – human capital.

If in technical and technological processes, standardization procedures are integral and customary, then in such a multi-aspect sphere as the formation and development of human capital, based on, but not limited to, health care, upbringing and education systems, standardization is entirely different. Only the requirements for specific elements of the infrastructure for the formation and development of human capital (educational program, qualification requirements, list of knowledge and skills) lend themselves to standardization. At the same time, human capital requires assessment, but not standardization. This process is contrary to the very nature of the phenomenon. At the same time, the procedures for assessing the quality of human capital are based mainly on expert methods, because statistical methods give a colossal error when they are applied to values related to the socio-economic sphere (Jung et al., 2020).

At the same time, business agents presenting a demand for human capital have moved from merely qualifying requirements to specifying their expectations. Since 2010, there has been a trend towards concretizing the list of knowledge and skills in addition to the level of qualification (Makulova et al., 2015). The completion of this stage can be considered the creation of systems for an independent assessment of qualifications, designed to confirm the compliance of a particular specialist with a specific qualification in a specific area. However, experience has shown that this approach did not significantly reduce uncertainty. The main reason is the rapid obsolescence of the background of specialists against the background of the high speed of changes in internal business processes occurring within companies (firms, organizations) (Andreeva, 2014). In scientific periodicals of the last two decades, the concept of lifelong learning is widely presented. At the same time, it should be noted that even providing the employer with the possibility of “lifelong learning” to his employees does not guarantee the desired result.

In our opinion, this circumstance is due to the powerful influence of personal qualities on the methods and procedures for applying skills. In the modern literature on the competence-based approach, the set of concretized personal qualities and patterns of behaviour is usually called “flexible skills” (Allbredge & Nilan, 2000). The practice has shown that “tough skills” (professional competencies) have deficient performance in a highly dynamic and volatile business environment. They require an orderly and unperturbed environment. At the same time, the network form indicated above, prevailing among the forms of the modern organizational structure of economic activity is extremely susceptible to disturbances in the external environment, quickly adsorbing its impact. Moreover, in this context, human capital should transform together with the company (firm, organization), which forms a problem-forming contradiction.

On the one hand, human capital, with the knowledge, abilities and skills inherent in its bearer, transfers its value to the product being created, by analogy with the material form of capital. On the other hand, the renovation of human capital should not be carried out to the initial level, as in the case of material, materialized capital, but to a new, different level, at which the return on human capital should, at least, not decrease, but at least increase. The system for the restoration and development of human capital differs significantly from the analogous system for materialized capital: in the first case, the costs and efforts give a specific desired result, albeit with small deviations, in the second case, this result is not guaranteed. The reason is the specific nature of human capital. Human capital is inseparable from its carrier – a person, with all its inherent psychophysiological, behavioural, worldview and other physical and spiritual-emotional characteristics (Vernon et al., 2019). They, among other things, affect the ability for productive, independent professional activity. Combining the most significant features in the term “flexible skills” allows selecting from the totality of human characteristics those that lend themselves to customization. The customization, in turn, creates an opportunity to improve the accuracy of the expert assessment of human capital (for example, effective communication, attitude to development, leadership potential). Thus, the resolution of the above-mentioned problem-forming contradiction is carried out through the localization of uncertainty, since it is not possible to eliminate this uncertainty at the present stage completely.

These phenomena were not slow to have an impact on the labour market. Since 2015, there has been a transition from a request for a qualification level with the specification of skills and abilities to a request for specific competencies and their sets. In other words, the parameters of the interaction of supply and demand are changing in the labour market.

Competence as an interdisciplinary category of a group of social and humanitarian sciences, with all the variety of its definitions and interpretations, always has one common feature – the ability to act independently in a specific area. Analysis of Russian and international educational standards shows that the competence-based approach has become prevalent. Sets of competencies are focused on the formation of both "flexible skills" and "hard skills" as planned learning outcomes. Thus, target sets lend themselves to standardization, and human capital, which is a bearer of a competence, requires an additional assessment of the level of formation of a set of competencies. For this, independent or corporate assessment centres are used.

6.2. Investigation of the possibility and feasibility of using the term "competence market" in the framework of the theories of "information", "post-industrial" economy and "knowledge-based economy"

The postulates of the knowledge-based economy, information economy, and post-industrial economy provide functional foundations for establishing stable relationships, testable patterns of the modern socio-economic system, which is of particular importance for modelling and forecasting the most likely vector of development. The need for a transition to a post-industrial economy in its pure sense requires the presumption of intelligent technologies that ensure resource conservation and high production efficiency through the use of intellectual resources. Intellect technologies in the modern world are divided into two large-scale clusters. The first cluster – systems, the performance of which is supported by artificial neural networks. The second cluster is the systems responsible for the generation and implementation of new knowledge. The first cluster switches to itself a considerable amount of functions related to the tasks of processing data arrays that do not require decision-making (systematization, clustering, grouping, analysis). The second cluster is focused on generating new knowledge, including based on data obtained after pre-processing with artificial neural networks.

Switching some of the functions of data processing, anticipating decision-making, to information technology, change the configuration of the requirements for human capital. For example, data analytics, the urgent need for which emerged after the fourth information revolution, is no longer an end in itself. Analytics has become only a technologized element of the management decision-making system, yes – very important, included in all business processes, but at the same time, not a priority. In the modern world, it is already difficult to imagine the work of an analyst without information systems since this is highly ineffective. This fact means that other updated requirements will already be applied to data analysts, which will not be lower than the previous ones.

The information-network transformation of the economy, the subsequently accelerated digitalization, and the virtualization of business communication processes have had a significant impact on the infrastructure and the human capital market. The following trends are most clearly traced.

1. The subject of the transaction in the modern market of skilled labour is not labour itself, and no more extensive knowledge, skills and abilities, but specific competencies and their sets. That is, the vanguard is now an activity aspect, including with an inherent potential for development.

2. Project management of organizations and networks required a widespread transition to flexible project teams, which allows forming the most effective combinations of employees with their inherent competencies in specific projects. The insufficient level of adaptability of specific employees produced an explosive growth in specific competencies, and put soft-skills from the category of desirable to the category of mandatory. Therefore, accelerated digitalization and remote work have actualized the use of this approach.

3. In the context of the knowledge economy, the formal transition of education systems to a competency-based approach has already taken place. The institutionalization of professional-public accreditation procedures identifies the actual transition.

4. There is an orientation of educational programs towards the formation and development of specific competencies in their activity-based understanding. Business education and corporate, educational centres (universities) were the first to react to this change.

5. The transition to an individual educational trajectory was marked. The large-scale introduction of online technologies in the educational process has provided a real opportunity for an unlimited choice of educational programs of various levels of complexity. Now the student, if desired and necessary, can independently form his trajectory of professional development both in his educational organization and on open educational platforms.

6. There has been a qualitative transition from purely knowledge-based components to a virtual infrastructure for self-training of the necessary skills through updating educational technologies. Modern educational platforms already provide not only the possibility of video conferencing but also the infrastructure for full-fledged practical training using virtual simulators, simulators and cases. Developing feedback from specialized experts becomes a necessary element, which, is a variant of a highly specialized assessment.

7. The practice of virtual academic mobility and virtual labour migration has spread. Remote learning and remote work have spread to many areas in which they were previously applied sporadically (Reining et al., 2019). Of course, the complete virtualization of these processes is not yet possible for many objective reasons, and, most likely, is inappropriate. At the same time, the implementation of a large-scale project to provide the possibility of remote work and remote learning was a pilot launch of the virtualization of part of production processes. This process led to the actualization of the methodology and technologies for managing network projects, requiring specialized competencies and the possibility of modelling the very portfolio of specialist competencies. The market for additional education has responded with lightning speed to the expressed need. At present, a considerable number of programs dedicated to Agile, Scrum, and facilitation are available to those who wish. Virtual academic mobility and virtual labour migration, firstly, simplified the fine-tuning procedures for human capital and made the procedures for its selection more transparent. Secondly, the process of collecting, clustering and analyzing data on the most demanded competencies in the labour market is provided. When recruiting

personnel, especially in the private sector, only qualifications play a lesser role, and more and more – specific sets of competencies.

8. Expanding the practice of forming competence profiles of specialists and matrices of corporate competencies. Digitalization of the mechanism of interaction between supply and demand with the use of intelligent data processing systems optimizes the organizational and time costs in the selection of candidates for specific positions, and allows formulating an accurate request for the training of such specialists.

Thus, the identified trends indicate the advisability of expanding the thesaurus of modern economic theory by including the definition of “competence market” in its circulation, since this definition is closest to the actual processes taking place in the modern socio-economic system focused on the transition to a post-industrial formation.

6.3. Priority vectors of development of the national education system

The national development goals of the Russian Federation include accelerating technological development, ensuring the accelerated introduction of digital technologies, Russia’s joining the five largest economies in the world, and creating a high-performance export-oriented sector in the basic sectors of the economy. The “Strategic Academic Leadership Program” has already been formed with a 10-year implementation period. This program organically integrates the best international and national practices in the development of the university and scientific and educational complexes.

The national development goals of the Russian Federation actualize the expansion of the practice of a competence-based approach within the framework of active interaction with leading employers and research centres that generate a request for specific competencies.

The market of educational services is systematically moving to a full-fledged, rather than the declarative, implementation of the competency-based approach. This thesis is confirmed by the inclusion of the concept of “practical training” in the legal framework of vocational education. In combination with the newest trend of imputed digitalization of the educational process in order to ensure its continuity, competence as a subject of a transaction in the educational services market no longer seems to be a distant future, since it has already become a reality. The enlargement of the subject of the transaction to a specific set of competencies is now becoming more of a technological and organizational task, rather than an intellectual one.

Atlases of new professions demonstrate the formation of demand for interdisciplinarity and soft-skills. At the same time, the tasks of fundamental training, which form the basis for further research activities, do not lose their relevance. In such a situation, the only way to integrate all the positive results from fundamental and practical training at the same time is to choose an individual educational trajectory focused on the formation of a specific target set of competencies. Therefore, it is essential to form an institutionalized mechanism for the formation and development of professional competencies in students following the elements of professional standards.

Now in the Russian Federation, all opportunities have been created to maximize the convergence of the planned results of the development of professional educational programs and sectoral qualifications frameworks. The planned results are precisely the competencies considered as the basis for the

performance of specific labour functions. Taking into account the above, the priority tasks for the development of the national education system are:

1. Institutionalization of the competence market as the chief information space for modelling the content of educational programs, taking into account the updated professional standards.

2. Involvement of leading professionals in the development and implementation of educational programs (for research programs - representatives of leading scientific institutions, for applied programs - representatives of industries that have a strategic priority for the development of the Russian economy).

3. Development of the infrastructure of scientific and academic interaction in order to integrate the capabilities of scientific, laboratory and human resources, including the formation of scientific and educational consortia.

These three priority tasks should be decomposed into an integrated set of key indicators of the functioning of educational institutions. In this case, the process of managing the development of the Russian education system will be transparent and adaptive.

7. Conclusion

1. The prerequisites for the formation of the market of competencies and the allocation of the market for competencies into a separate economic category have been analyzed:

- the widespread institutionalization of the sectoral framework of qualifications and the qualification requirements corresponding to them;
- digitalization of procedures for communication of supply and demand in the labour market;
- changing the subject of the transaction on the market there: moving from the qualification level with its inherent knowledge, skills and abilities to specific labour functions and competencies;
- consolidation of the “lifelong learning” approach as dominant, taking into account the need to develop soft-skills and T-shaped skills;
- the need to apply professional and public accreditation and assessment to verify the compliance of the target competence profile of the employer with the competence profile of the employee.

2. The possibility and expediency of using the term “competence market” within the framework of the theories of “informational”, “postindustrial” economy and “knowledge-based” economy have been investigated. The possibility of applying this definition in the context of the information-network transformation of the economy has been substantiated. The most apparent trends and tendencies in the development of the modern human capital market in the context of accelerated digitalization and virtualization of business communication processes are highlighted. It is determined that the identified trends and tendencies necessitate the allocation of competence as a separate subject of the transaction in the human capital market.

3. Three priority tasks of the development of the Russian education system are highlighted: the institutionalization of the competence market, the involvement of leading experts in the development of professional education programs and the development of the infrastructure of scientific and academic interaction. These tasks should be naturally decomposed into a set of key indicators of the development of universities.

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