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The evolution of digital relations in the economy and the relevance of financial education in modern society

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ABSTRACT

Universities enter educational markets with "digital" services, joining in communities, combining digital and traditional education (online and offline), strengthening ties with business structures, universities and schools. The purpose of the work is to carry out a systematic analysis of the evolution of relationships in education in the context of the digital transformation of society. The formation of socially responsible behaviors of students and Tutors of the educational process is taken into account. These aspects are studied in a systematic way and the financial education procedure is proposed. The main results of the article are the analysis of the system and classification of tasks and digital training processes, development of a procedure (algorithm) for the implementation of the financial training program.

KEYWORDS: evolution, competence, training, financial, digital, intellectual.

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La evolución de las relaciones digitales en la economía y la relevancia de la educación financiera en la sociedad moderna

RESUMEN

Las universidades ingresan a los mercados educativos con servicios "digitales", uniéndose en comunidades, combinando educación digital y tradicional (en línea y fuera de línea), fortaleciendo lazos con estructuras empresariales, universidades y escuelas. El propósito del trabajo es realizar un análisis sistemático de la evolución de las relaciones en educación en el contexto de la transformación digital de la sociedad. Se tiene en cuenta la formación de conductas socialmente responsables de los alumnos y Tutores del proceso educativo. Estos aspectos se estudian de manera sistemática y se propone el procedimiento de educación financiera. Los principales resultados del artículo son el análisis del sistema y clasificación de tareas y procesos de formación digital, desarrollo de un procedimiento (algoritmo) para la implementación del programa de formación financiera.

PALABRAS CLAVE: evolución, competencia, formación, financiera, digital, intelectual.

Introduction

According to the Educational Doctrine of the Russian Federation (National doctrine of education in the Russian Federation, n/d), education should prepare highly qualified, competent specialists and competent users, self-taught, ready for motivated professional growth. Banking is being "digitalized", complicated and simplified. The need for a relevant audience of users who are financially and "it" literate is obvious. The goal is not only the disposal of funds, but also the reasonable extraction, investment of income, and saving.

The relevance of financial education is manifested in many ways, in particular, in improving the financial and market culture, searching for ways to engage in commercial, electronic interaction with banking, pension, credit, insurance, investment, cryptocurrency and other structures and objects (Lai and Hong, 2015; Tsirel, 2017).

The value of the network readiness index (NRI), which characterizes the level of ICT evolution and readiness for the digital economy, is in the fourth ten in the Russian Federation. However, the country has a good potential for its growth, it implements the Federal target program "Digital economy", solves the problems of training competent" digital " specialists. This also requires the reorganization of education and the labor market,

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saturating it with specialists in BlockChain, cryptocurrencies, intelligent systems, and their application.

Planned educational work with the population is required, which contributes to the development of financial relations between everyone and the state, business, and individuals; for example, to prevent the sale of an apartment by EDS without the owner's knowledge. The purpose of our work is a systematic analysis-synthesis of evolutionary tasks, processes and methods of transition to digital education. We emphasize especially the procedure for program implementation of financial training.

1. Fundamental theory

The study of information on the formation of literacy, analysis of the level of knowledge, competencies, as well as the development of pedagogical support for training, forecasting, modeling, software development, readiness to use financial instruments, reflection is a necessary condition (Jennings et al., 2013). For example, one of the main goals of financial education is to reduce the bankruptcy of individuals.

There are the following areas of such training:

1) evaluate (monitor) the literacy of the population;

2) train personnel to implement their training programs;

3) develop and implement courses in schools, non-economic universities, professional development structures, adapt them to target audiences;

4) advertise programs, consulting.

The population, the leading financially competent personal (family) economy, small business is the basis of GDP growth, sustainable development, an important factor in the socialization of the population. Awareness of banking, insurance, credit instruments is necessary. This optimizes their use, rationalizes the use of money, funds, reduces risks.

The main university problem is the provision and development of effective relations with the employer, in particular, the improvement of promising areas and competencies of their graduates. Universities often enter the educational market themselves with services, for example, “digital” courses, uniting into communities.

It is possible to implement unique educational structures, programs combining competently digital and traditional education, online and offline environments. They are

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aimed at the following competencies: cognitive (formulation, solving creative problems, updating the knowledge and skills necessary for this), personal (individual) and self-learning (Stukalova et al., 2017).

Educational processes are conditionally classified into personality-oriented (at the level of individual competencies) (Lachira Estrada, 2020), social (educational resources of society, groups of society), corporate (training, improving the competencies of employees), state (public systems).

Also, the difficulties of assessing knowledge are relevant. The prices do not reflect the laws that are traditional for material and energy products, often the valuation of the precedent form (by uniqueness, for example) does not reflect labor costs (an indirect indicator of labor costs).

The law "cost is determined by price" does not work. The price of an information product decreases with an increase in the number of users, everyone protects their product (service, application) from copying, taking into account the risk premium for hacking, copying (Brumstein and Bondarev, 2014). The product can be delivered free of charge, "tying" the consumer to itself, to modifications, giving rise to a complex - organized, but poorly formalized system of economic, organizational, legal and other relations to product trade (programs, content, services, technologies, patents, etc.) , with a wide, sufficient nomenclature.

Suppliers of information products can be developers, dealers, analysts of information products (services), for example, web studios, consulting companies. A distinctive feature of the information market: the principle of the market does not work ("supply is born by demand"). Analysts - experts believe that manufacturers are trying to get closer to the consumer, providing electronic interaction, ensuring its "binding" to products, for example, to the "smart home" (Namiot et al., 2017).

2. Methodology

The main practical methods used in our analysis include screencasting, testing, multimedia, electronic lectures, SMART didactics, learning process intellectualization, 3D computer design, active competence, modeling, distributed access, DataMining and BigData, cloud technologies, etc.

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The main methodological and didactic component is the need to train tutors, system administrators and the manager for the training process itself.

The theoretical methods used in the work were methods of systemic and cognitive analysis and synthesis, the evolution of competencies and creative cooperation.

3. Results

Classical universities have to solve the tasks of actors:

1) providing ICT equipment;

2) training (retraining) of teachers on "digitalization", increasing their ability to change traditional teaching models;

3) strengthening ties with business, private and municipal structures (development and implementation of corporate programs of applied bachelors, technological masters, etc.);

4) the introduction of digital literacy in schools (teachers, students, parents, leadership).

An ICT specialist is self-motivated, self-improving, self-learning. At the same time, the processes and tools of digital learning are different (Fenwick and Edwards, 2016). Screencasting, testing, multimedia presentations, electronic lectures, virtualized and visualized didactics, intellectualization of decision-making during training are effective.

For example, using 3D printers, the method of fusing simulation can be taught computer 3D design. The material is plastic or metal. It uses inkjet printing with resins instead of ink. There is a laser using laser sintering. The material is ceramic, glass. Printing uses a pulsed laser to create solid objects. If high accuracy is needed, then digital processing of light is used, using a liquid polymer, which becomes solid in the light.

Everything that develops active competence helps realize the learning situations of the digital economy, ecology, etc., and increases self-learning.

The main "digitalized" processes in learning are (Bruce and Chiu, 2015; Watson et al., 2015):

1) distributed, remote access (to content, tool, environment);

2) DataMining and BigData (Big Data in Computational Social Science and Humanities, 2018);

3) telecommunication (teleconference, webinars, etc.);

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4) 3D-visualization of training (model and real) situations, for example, a training simulation experiment;

5) interface, applications, operating subsystems (for example, cloud and Grid-oriented), etc.

Tutor training is needed. A tutor is a coordinator of a cognitive algorithm, process. Its functions are to mentor the student, possibly, with the exception of some technical and technological problems, which should be advised by a more trained system administrator, manager of the learning process (not to be confused with the education manager).

Software implementation of financial training involves:

1) the availability of training;

2) the clarity of the goals of (self) education;

3) coherence of learning structures;

4) the availability of resource-targeted programs, tactics.

There are programs of the European Union, Russia, and the region. Small business consulting services for personal and commercial finance should be introduced in schools and universities.

Financial training is implemented according to the following procedure (algorithm):

1) determination of hypotheses, goals, learning problems;

2) goal setting;

3) identification of risks;

4) determination of the criterion (necessary) level of literacy;

5) analysis, evaluation of the educational program, the necessary competencies, activities;

6) analysis of required resources (informational, material, intellectual, temporary, personnel, etc.);

7) advertising and marketing support;

8) development of scenarios, interactive teaching materials;

9) implementation of measures (with analysis of the results, level of literacy achieved, adaptive adjustment of programs, training strategies);

10) exchange of experience, development of initial specifications (perhaps an iteration of the procedure).

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The following requirements are mandatory: assessment of the measure of effort invested by the student (self) learning, dynamics, stimulation of cognitive processes, etc.

The marketing potential in the social network business is doubled. Businesses are actively using "digital", social network processes (Abend, 2019) for:

1) expert, business (imitation) situations;

2) marketing research, studying the target client (namely the client, and not the generalized "target audience");

3) "archiving", digitizing the intellectual capital of companies;

4) access to the crowds;

5) management of mergers and acquisitions of structures, their reengineering;

6) implementation of infrastructure and security policies, etc.

All this strengthens the potential of the business, provides intra-corporate social networking, intellectual analysis at the level of tasks, business processes, operational communications, including the exchange of competencies. The gap in the pace of innovative development in the market is being bridged, specific advantages are acquired in groups and business communities.

Social networks is a toolkit for implementing the "Company 2.0" paradigm with strengthening digital, intellectual connections and problems, processes, environments (Endovitsky, 2017).

Interactive, cognitive, individualized training with tracking productivity by the profile of work (services), categories, conditions, etc. is relevant for the business. Education should take into account the business interests of companies, their resources, requirements, as well as the requirements of the Federal State Educational Standard, methodologies, protocols of training and administration networks security policy.

The "cost" of an employee (for example, testing, certification) is required to know in the digital economy. Intellectual potential is the fundamental basis of a knowledge-oriented society in which knowledge is the leading productive force, and technology is "productivity" from which utility is derived. After a successful study of the discipline, the level rises and the student masters the additional, financially oriented competencies that have formed after training.

Modern production has its own requirements, quite high and justified, for staff training and labor organization. They can be combined with the need to continue the labor

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process, the continuity of training. For example, there is distance learning. It will effectively train employees, issue a certificate to everyone who has completed the course.

Distance Learning is a learning process and an ICT-based environment. The central character in the implementation of any scenario in such an environment is a tutor who owns the methodology and administrator techniques. Training is conducted using software (technological, organizational, etc.) that is adequate to the requirements of production and the market.

For example, using modular technology. It is not new, but in this approach to training, the technology is implemented fully, efficiently and carries innovative potential. This is a new step in the intensification of training, its individualization, the implementation of a creative and competency-based approach, the problematic use of practical skills and knowledge, and an approach. Improving knowledge or retraining confirms the certificate issued at the end of training.

Distance learning often implements the principle of open education. When using distance learning, not only the content of the training is subject to change, but also the criteria for the adequacy and quality of the training material. Properly organized distance learning is a powerful factor in learning (control), motivation and development, feedback and management.

4. Discussion

Changes in modern education undergo not only the content of training, technology, but also the criteria for the adequacy and quality of educational material. This is not an end in itself, it is an evolutionary necessity.

Properly organized digital software is a powerful factor in learning (control), motivation and development, and feedback in the learning process. Financial disciplines in different plans may appear in different semesters; interaction models are used to identify the level of financial competencies.

For example, graph (Omelchenko, 2018). Using chains for discipline, we divide them into equal intervals, each successively assign a certain measure of development of financially oriented competencies.

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Having assessed the graduate with them, his profile can be built and an analysis of academic performance can be carried out, revealing the average, best results, their spread is about average. The competency model is also representable by the UML state diagram, if we single out the state of the student before and after studying. A model for changing a student's financial competencies is then presented as nested elements.

The effectiveness of education in the digital economy is determined not only by the goals and priorities of the economy, but also by the "sensitivity" of society and business to them (Makashova and Chusavitina, 2014). The basic indicators of effectiveness are economic and social (quality, pace of intellectualization of consumer services), demographic (duration of intellectual life, a variety of opportunities and forms of education), humanitarian (educational culture, opportunities and motivation for self-education). The aspects of the formation of social responsibility also influence (Baurova, 2016).

Business has its own requirements for staff training. Companies without cooperation with (re) training institutions risk losing in small cycles of using competency (personnel, customers, partners). They can be supported by orientation to mobility, social media, innovation, web marketing, etc. If their staff is ready to implement ICT processes, digital transactions, processes, exchange ideas in social networks, promote ("pump over") ideas and topics on crowd sites. This increases the profitability and pace of market entry, while lowering operating expenses. Analysts estimate such potential at $ 1.5 million, but only 4-5% of companies so far receive a significant share of the profit from the "figure".

Conclusions

Financial education is a unity of adaptability, completeness and evaluation. Although a lot of works are devoted to the issues of financial education, there are few of the problems of their quality, completeness and structure of competencies. For example, automation, monitoring, control of assimilation, quantification of competencies according to GEF.

Monitoring is a management opportunity. It is necessary to solve, in particular, the tasks:

1) formalization of competencies, their relationships with the curriculum;

2) development of methods for assessing the quality of training;

3) adaptation of the sequence of modules, mastered competencies, scenarios.

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There are many methods for assessing component competencies, their formation, cost (time, volume, content, information support, etc.). They evaluate the elements of financially oriented competencies, not allowing a comprehensive assessment of everything. Therefore, it is necessary to choose the most optimal way to evaluate each, for example, testing for the level of starting financial literacy, team work.

There are techniques from specialists in the field of psychology and sociology. For example, those evaluating short temper, aggressiveness, uncompromisingness (Mehrabian technique), "gestalt" psychology.

Monitoring is a set of tasks for updating information about the system, subsystems, needs, satisfaction of parents, teachers, the public, society, government agencies, and business; and monitoring is important. It monitors the conformity of the Federal State Educational Standard, the normative base, the normative criteria for the quality of education, and accumulate empirical experience.

Monitoring in financial education has the goal: to coordinate the level of financial literacy of the student (compliance with the standard, average parameters in the considered age group) with the average age norm and assess possible deviations. It is carried out according to basic indicators:

1) qualitative, quantitative composition of the collective of teachers;
2) quality - the number of achievements of the teaching staff;
3) motivation of teachers and students to joint activities;
4) support for innovation;
5) level of competence;
6) reflexivity of skills (observation tables, motivation assessments).

Independent actions involve the formation of a financial and cognitive process, and monitoring - administrative control, as well as self-diagnosis of their own level, subsequent professional self-education in the field of finance and the digital economy.

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