PEHPP 2019
Pedagogical Education: History, Present Time, Perspectives

EDUCATIONAL CONTENT MANAGEMENT IN INFORMATION AND LEARNING ENVIRONMENTS

R. M. Sherayzina (a), L. Yu. Monakhova (b)*, A. E. Maron (c)
*Corresponding author

(a) Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia, Roza.Sherayzina@novsu.ru
(b) Federal State Budget Scientific Institution "Institute of Education Management of the Russian Academy of Education", Saint-Petersburg, Russia, Lira.monahova@gmail.com
(c) Federal State Budget Scientific Institution "Institute of Education Management of the Russian Academy of Education", Saint-Petersburg, Russia, sofamaron@rambler.ru

Abstract

The article discusses a new entity for Russian and world educational practice - the diversity of information and educational content and the problem of managing it. We consider the following as a methodology that underlies the study of issues related to the description of models for managing content diversity in information and educational environments: a competency-based approach, well developed in Russian pedagogy; a praxeological approach, less popular, but most adequately consistent with the modern theory of practical-centrism; infological approach, which is only gaining recognition of the pedagogical community in connection with the formation and rapid development of information educational technologies. The article focuses on highlighting the development strategies for the management of the diversity of educational content in the education system that is characteristic of the information society: orientation to the development of ways to obtain relevant knowledge as an attribute of quality of life; diversification of the semantics of the term "education"; reorientation of standardized functional preparation for a paradigm based on the construction of a personalized educational trajectory; the evolution of knowledge into one of the sources of value; formation of education as a defining tool for education and socialization of migrants. It is proposed to use information and educational environments as a tool for managing educational content. Some Russian educational platforms that implement the principles of content management in educational practice are presented.

1. Introduction

In the 21st century, education is becoming one of the most important areas of human activity. The formation of a new type of social structure - the information society - brings information and knowledge to the forefront of social and economic development. Information, theoretical knowledge, practical experience of the professional activities of individuals become the strategic resources of countries and largely determine their sovereignty and national security. Increasingly, education is no longer identified with formal school and even university education. Any activity is interpreted as educational if it aims to change the attitudes and patterns of behavior of individuals by assimilating new knowledge, developing new skills corresponding to a variety of requests (Sergeeva et al., 2019).

The education system is usually the most inertial component of state structure. But, at the same time, it reflects all modern innovative technological and social practices in large educational centers (Trifonova, 2017). Under these conditions, prognostic studies regarding educational development strategies and, in particular, the identification of strategies for managing the diversity of educational content become relevant (Zeer, Tretyakova, & Miroshnichenko, 2019). The authors of the article do not pretend to have an exhaustive presentation of strategies; the work examines the most achievable strategic directions dictated by modern trends in the modernization of Russian education.

The research results reflect the real picture of the current state of the practice of implementing the principles of managing the diversity of educational content on the Internet.

2. Problem Statement

The identification of strategies for the development of educational content management processes in information-educational environments is put forward as a global scientific and theoretical research problem.

3. Research Questions

In the framework of the article, the authors solved the following problems:

– What are the content management strategies in information and learning environments that are characteristic of modern Russian education?

– What are the consumer priorities of instrumental solutions for the practical implementation of educational context management processes?

What RuNet information environments manage educational content?

4. Purpose of the Study

The aim of the study was to present capabilities of RuNet for managing educational content using information and learning environments.

5.   Research Methods

The authors put forward the praxiological and infological approaches as the methodology underlying the study. The praxeological approach that defines the theory and practice of the effective organization of professional and personally significant human activity is manifested through the "terminological database of knowledge of the subject area and ideas about how to organize a rational and effective implementation of activities, formed by the totality of a person's field of vision algorithms and means of carrying out activities that allow minimizing the costs of its implementation when achieving purpose, the ability to correctly reason and make decisions of choice, based on the laws of logic" (Monakhova & Fedotova, 2017, p. 13). This approach in the best way ensures the implementation of the modern educational paradigm, focused not on the development of a certain amount of knowledge, but on mastering a set of methods of action leading to the expected result of life. Reliance on the praxiological approach in the management of educational content in information and learning environments allows us to re-evaluate the effectiveness of educational activities and their effectiveness, identify errors in time and predict successes, if necessary, correct activities, determine the strategy and tactics of further professional development and social development human status.

The infological approach in the field of humanitarian knowledge has not been thoroughly developed. The term "infological" is compiled from two words - "information" and "logical" and literally means logically organized information. This approach was chosen as the methodological basis of the study because it is a question of management in information-training environments. It is in such environments that diverse information should be organized in such a way as to manage the information needs of users and follow the logic of the subject area intended for mastering.

An information-educational environment is understood as a system, a set of data transmission tools, information resources, interaction protocols, hardware-software and organizational and methodological support, focused on satisfying the needs of users in educational information services and resources (Karavanova et al., 2019).

The infological approach to building an information-educational environment is focused on satisfying the educational needs of a person, based on a logically sound systematized knowledge base organized in a user-friendly form. Thus, using the infological approach, two main educational tasks are solved: studying the informational and educational needs of potential users and analyzing the content of the subject area, focused on the formation of a user database.

6.   Findings

In the modern world educational space, the importance of information, knowledge and practical experience, which play a decisive role in the socio-political and economic life of states, is being actualized. In addition, the competitiveness of every citizen of the world is also determined by the level of development of professional and personal qualities.

Thus, the development of ways to obtain relevant knowledge as an attribute of the quality of life is the *leading* strategy for the development of processes for managing diverse content in the education system. The actualization of the ability to learn, plan and successfully implement independent activity in the process

of mastering new knowledge and practical experience using modern information technologies is important in this strategy.

As the *second* strategy for the development of educational content management, which is characteristic of the information society, we single out the orientation toward diversification of the semantics of the term "Education". Educational practice all over the world is no longer identified with formally oriented forms. Any type of activity, if as a result of it there is an increment of personal and socially significant qualities of a person, manifested in professional development, is considered educational.

The emerging reorientation of standardized functional preparation for the paradigm based on the construction of a personalized educational trajectory based on the abilities and interests of the individual with a view to its development will be designated as the *third* strategic line in organizing the management of the diversity of educational content.

Socio-political opinion came to the understanding that knowledge and information determine the strategic resource of the state. In conditions of general commercialization, information and knowledge are beginning to be regarded as sources of profit. Thus, the evolution of knowledge into one of the sources of value becomes the fourth strategic direction of the development of educational content management processes in information-training environments. The developing economic system appeals to the need for almost every employee during the capable period of his life to improve his qualifications several times or change his profession. And such an educational service must be purchased most often at the expense of the individual themselves. The educational space is included in the economic sphere of social activity and becomes an important component of the economic development of Russia.

As the *fifth* strategy for the development of educational content management, characteristic of the information society, we highlight the formation of education as a determining tool for educating and socializing migrants.

Migration processes are a characteristic phenomenon for the modern way of social development. Improving the quality of the flowing human resource through the development of intellectual potential through education and socialization is becoming a priority of social development and falls on the shoulders of the education system.

Determining the consumer priorities of instrumental and technological solutions for the practical implementation of educational context management processes in information and learning environments among the adult population of Russia, we note that currently three quarters of educational organizations and enterprises use distance and electronic learning technologies. However, classical face-to-face training remains dominant. According to a survey published on Trainings.com (Obucheniei razvitie personala Trainings.ru, 2018), in 2018 the traditional training format will drop to 50%. The following forms of instrumental and technological solutions are the most popular: mobile training (51%), virtual classes (40%), social media (30%) and webinars (25%). At the same time, 9% of organizations do not see arguments in favor of the fact that digital technologies will increase the effectiveness of training and development.

Our results are consistent with the Trainings.ru study and show that priority is given to "on-the-job training" (49%), internal professional development programs (47%) and coaching conducted by a direct manager or colleague - mentor (33%) in the field of corporate training. Training using digital technologies was preferred by 30% of respondents. Further training through external conferences, master classes, and

seminars was considered effective by only 25% of respondents.

The fact that respondents consider coaching practiced by about 76% of companies to be the most productive training practice, while distance learning and institutional forms of professional development according to the results of the study have the lowest efficiency is of interest.

The trend of our time is the organization of training at enterprises for customers and people who are not employees of the enterprise, while about 50% of the educational content is developed "from scratch", and 40% of the already tested content is adapted to changing customer needs and 10% intended for learning material is formed by the students themselves.

Another characteristic feature of educational content management is the practice of transferring responsibility for their own training and development to the company employees themselves and their direct managers responsible for monitoring and evaluating the performance of subordinates. Starting from 2017, many enterprises indicate the need to increase the amount of self-training for employees, develop their competencies in setting goals for self-development and implementing a plan for their achievement with a focus on information and learning environments as the key tasks of business development.

Let us consider examples of information-training environments that manage educational content presented on the Internet.

We will present a single information and educational environment, the National Open Education Platform (NPOO) (Associaciya "Nacional'naya platforma otkrytogo obrazovaniya", n.d.) as the first platform, designed to meet the educational needs of various groups of the population. It was developed in 2013 as part of the concept of a unified information and educational environment in the Russian Federation.

The platform is focused on ensuring "access to quality education regardless of place of residence, social and material situation of families of students, the students themselves and their health status, as well as ensuring the maximum equal access to educational programs and services of preschool, primary general, basic general, secondary general education, secondary vocational education, additional education of children and adults, higher professional education, additional professional education through the establishment of coordination and regulatory measures and mechanisms for all participants in informational educational interaction" (Koncepciya…, 2019).

The Association (NPOO) unites such major Russian universities as the Moscow State University named after M.V. Lomonosov; St. Petersburg State University; National Research Technological University "MISiS"; Naional Research University Higher School of Economics and others.

Currently, the portal implements about 200 programs in various areas of training. All educational materials are free and meet the requirements of federal state educational standards. As a result of mastering the course, the student can receive a certificate if they pass the final certification.

The main principles underlying the management of educational content in the NPOE environment are as follows: the most qualified professors offer their best teaching materials for study; the courses offered are analyzed by experts for compliance with the requirements of the standards; a reliable procedure for assessing the educational achievements of students is provided.

The information and educational environment of NEPs is oriented not only to citizens of the Russian Federation. Representatives of all continents of the Earth use the portal for their educational needs.

The IT Academy, in which the blended learning organization combines traditional training forms

with distance learning technologies based on e-learning, can be the second example of the Runet information and training environment that implements educational content management. The Academy was founded in 1995, it is one of the leading consulting centers engaged in educational activities. Its educational programs provide such popular training areas as information technology and business application development, graphics and design, IT management, project management and information security (Akademiya AjTi oficial'nyj sajt, 2019).

Combining regional training centers in the cities of Volgograd, Kazan, Krasnodar, Krasnoyarsk, Nizhny Novgorod, St. Petersburg, Tyumen, Ufa, Khabarovsk, Chelyabinsk and others on the basis of a single pool of resources and quality standards, IT Academy implements the ability to flexibly manage teaching staff and processes to meet the diverse educational needs of consumers.

More than 30,000 students from all regions of Russia near and far abroad satisfy their diverse educational needs on the portal in question annually.

Currently, companies such as Global Knowledge, Google, Scrum Study Registered Education Provider, IBM and others are partners of IT Academy in the implementation of joint educational initiatives on the Russian market. The repeatedly considered educational portal received awards in the nomination "Best Microsoft Learning Center" and confirmed the status of Microsoft Partner Gold Learning - Gold Learning Partner. Over the past years, companies such as Huawei and Cisco have recognized the high competencies and the leading role of the IT Academy in the implementation of educational services on the Internet.

According to the results of statistical studies of the company Superjob, the leader in the online recruitment market of Russia, IT Academy has remained for many years one of the most sought-after companies for job seekers with educational content relevant for improving the qualifications of their employees. To date, more than 900,000 such requests have been recorded.

IT Academy has repeatedly won state orders for computer literacy courses for the population in various regions of Russia.

A *third* example of the Russian educational platform that implements diversity management in educational practice is an educational platform and an online course designer - Stepik.

The developers of Stepik see their mission in making the educational process open and user-friendly. The platform implements both the possibility of free training and the creation of copyrighted training courses free of charge and open to everyone (Obrazovatel'naya…, 2019).

The project's birth date is 2013, when the first training materials were posted on the platform. Currently, Stepik is actively developing the direction of adaptive learning, which implies the possibility for the student to form their own educational route, tailored to the individual level of knowledge and the planned result of training.

The Stepik project is developing in two integrated strategic directions: placing on the platform free training courses developed by educational organizations, companies and individual authors with the possibility of obtaining a certificate; creating and maintaining a communication environment of like-minded people - this is an exchange of views, contests, competitions, events, meetings with course authors , internship invitations, etc.

To date, more than 550 open online courses have been posted on the platform, more than 92,000

certificates have been issued confirming the successful completion of training.

Stepik is a multi-functional and flexible platform for creating educational materials that implement diverse educational needs. With its help, it is possible to develop online courses, interactive lessons with videos and various types of assignments for students, organize courses for a private audience, hold olympiads and contests, launch professional retraining and advanced training programs, as well as conduct corporate training for employees and clients.

Training courses are structured into categories and subjects. Among interest categories, courses are presented for everyone, including teachers and schoolchildren.

Among the subjects there are cognitive and educational materials in mathematics, statistics, computer science, as well as natural social and human sciences.

The student can sign up and take the "Basic course of preparation for the BSE in mathematics", test their knowledge on the simulator of the USE (Mathematics. Basic level), get acquainted with thermal and electromagnetic phenomena, master an introductory course in molecular biology and biomedicine, understand the principles of functioning of computer technology (at the hardware and software levels), and starting from grade 6 you can master the basics of programming in C.

As an example of the educational content presented at Stepik, we can consider a short course on Internet safety relevant for schoolchildren, teachers, and parents. The course is presented in three sections: malware protection, account security and secure online payments.

The course sets out material on the rules of safe behavior on the Internet in an accessible form and how to protect the computer from malware. It explains how to protect the account from hacking and what to do if it was hacked. It tells how to be protected from extorting money through SMS, "official letters", under the guise of charity, fake shops, offers of profitable work, etc. The listener will learn how to make secure purchases with an online wallet and a credit card, will understand what needs to be done if there are problems with the account.

Each lesson is structured according to the following scheme: presentation of the topic with a video; text intended for study; a test that must be passed, showing that the material is learned.

If the test is passed, the student will be issued a free certificate, indicating the successful completion of the course "Security on the Internet" with the grade obtained as a result.

Each course on the Stepik portal has a tab "Reviews", where everyone can leave their impression of the course, make comments and express wishes.

Of course, the listed courses and their examples do not limit the entire list of educational materials that anyone can master. We should note again that all educational courses presented at Stepik are free of charge.

The overwhelming majority of reviews of those who have taken one or another course are positive, which convincingly proves their attractiveness and usefulness to the consumer.

7.   Conclusion

Thus, we presented the results of a scientific study concerning the management of educational content in information and learning environments in the following aspects: identifying the main strategies for content management in information and educational environments, which allowed us to expand the

range of educational services and show the actual directions of development of educational activities; determination of consumer priorities of instrumental and technological solutions for the practical implementation of educational context management processes, which will allow educational process entities to freely choose information and educational environments and not go beyond the framework of legislation; consideration of practical examples of some Russian educational platforms that implement the principle of managing educational content in information and educational environments ("National Open Education Platform", "IT Academy", Stepik) and allow users to act on the "take and use" principle.

All of the listed results of the study conducted by the authors are focused on a significant increase in the efficiency of the processes of satisfying personality-oriented and socially significant educational requests.

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