

**RESEARCH OF SENIOR HIGH SCHOOL STUDENTS' ECONOMIC CULTURE  
FORMATION IN THE CONDITIONS OF DEVELOPMENT OF THE DIGITAL  
EDUCATION ENVIRONMENT**

***PESQUISA PARA A FORMAÇÃO DA CULTURA ECONÔMICA DE ALUNOS DO  
SEGUNDO GRAU NAS CONDIÇÕES DE DESENVOLVIMENTO DO AMBIENTE DA  
EDUCAÇÃO DIGITAL***

***INVESTIGACIÓN DE LA FORMACIÓN DE LA CULTURA ECONÓMICA DE  
ESTUDIANTES DE BACHILLERATO EN LAS CONDICIONES DE DESARROLLO  
DEL ENTORNO EDUCATIVO DIGITAL***

Tatiana P. GRASS<sup>1</sup>  
Vladimir I. PETRISHCHEV<sup>2</sup>

**ABSTRACT:** The work is devoted to the problem of finding approaches to assessing the level of formation of economic culture among high school students, as one of its important components. Recognition of the significance of the phenomenon in question in the educational sphere and the realization that the system of pedagogical support of continuous economic education in educational organizations is, somewhat, outdated requires their essential updating. In this regard, the problems of finding approaches to the study of ways of senior high school students' economic culture formation in the context of the development of the digital educational environment of the region are becoming urgent, which requires the construction of the model itself. The aim of the work is to study, analyze the state and model of the process senior high school students' economic culture formation. The main research methods are theoretical analysis of scientific, psychological and pedagogical literature on the research problem, study and generalization of experience on the problem; observation, questioning, conversation, qualimetry, testing, method of expert assessments; ascertaining and formative experiment; analysis of the study; methods for mathematical statistical processing, statistical processing empirical data. The study was conducted on the basis of Krasnoyarsk State Pedagogical University named after V. P. Astafiev with bachelor's and master's degree students, high school students, teachers from educational institutions, students of universities and secondary professional educational institutions of Krasnoyarsk and Krasnoyarsk Territory. The analysis of the state of the problem of high school students' economic culture formation based on the diagnosed test tools revealed correctional dependences between the indicators of four components in the structure of high school students economic culture formation and the levels of this formation under the conditions of digital education environment development in the region. The obtained dependencies and research data made it possible to form a model of this process in the context of the development of the digital educational environment of the region, describing the degree of formation of each component at each level.

**KEYWORDS:** Economic culture. High school students. Digital educational environment. Economic culture formation.

<sup>1</sup> St. Petersburg State University of Civil Aviation, St. Petersburg – Russia. Dr. Sci. Pedagogy, Assistant professor of Department No. 17 (Economics). ORCID: <https://orcid.org/0000-0002-0082-4857>. E-mail: [tpgrass@mail.ru](mailto:tpgrass@mail.ru)

<sup>2</sup> St. Petersburg State University of Civil Aviation, St. Petersburg – Russia. Dr. Sci Pedagogy, Professor of Department No. 7 (Language training). ORCID <https://orcid.org/0000-0002-5698-3187>. E-mail: [vpetrishchev2019@mail.ru](mailto:vpetrishchev2019@mail.ru)

**RESUMO:** O trabalho se dedica ao problema de encontrar abordagens para avaliar o nível de formação da cultura econômica entre estudantes do ensino médio, como um de seus componentes importantes. O reconhecimento da significância do fenômeno em questão no âmbito educacional e a constatação de que o sistema de apoio pedagógico à educação econômica continuada nas organizações educacionais está, de certa forma, desatualizado exige sua imprescindível atualização. Nesse sentido, tornam-se urgentes os problemas de encontrar abordagens para o estudo das maneiras de formação da cultura econômica dos alunos do ensino médio no contexto do desenvolvimento do ambiente educacional digital da região, o que exige a construção do próprio modelo. O objetivo do trabalho é estudar, analisar o estado e o modelo do processo de formação da cultura econômica de estudantes do ensino médio. Os principais métodos de investigação são a análise teórica da literatura científica, psicológica e pedagógica sobre o problema de investigação, estudo e generalização da experiência sobre o problema; observação, questionamento, conversação, qualimetria, teste, método de avaliação pericial; experimento averiguador e formativo; análise do estudo; métodos de processamento estatístico matemático; processamento estatístico de dados empíricos. O estudo foi realizado com base na Universidade Pedagógica do Estado de Krasnoyarsk, em homenagem a V. P. Astafiev, com alunos de bacharelado e mestrado, alunos do ensino médio, professores de instituições de ensino, estudantes de universidades e instituições de ensino profissional secundário de Krasnoyarsk e território de Krasnoyarsk. A análise do estado do problema da formação da cultura econômica dos alunos do ensino médio com base nos instrumentos de teste diagnosticados revelou dependências correccionais entre os indicadores de quatro componentes na estrutura de formação da cultura econômica dos alunos do ensino médio e os níveis dessa formação nas condições do desenvolvimento do ambiente de educação digital na região. As dependências obtidas e os dados da pesquisa permitiram formar um modelo desse processo no contexto do desenvolvimento do ambiente educacional digital da região, descrevendo o grau de formação de cada componente em cada nível.

**PALAVRAS-CHAVE:** Cultura econômica. Alunos do ensino médio. Ambiente educacional digital. Formação da cultura econômica.

**RESUMEN:** El trabajo está dedicado al problema de encontrar enfoques para evaluar el nivel de formación de la cultura económica entre los estudiantes de secundaria, como uno de sus componentes importantes. El reconocimiento de la trascendencia del fenómeno en cuestión en el ámbito educativo y la constatación de que el sistema de apoyo pedagógico de la educación económica continua en las organizaciones educativas está, en cierto modo, desfasado, exige su imprescindible actualización. En este sentido, se torna urgente la problemática de encontrar aproximaciones al estudio de las formas de formación de la cultura económica de los estudiantes de secundaria en el contexto del desarrollo del entorno educativo digital de la región, lo que exige la construcción del propio modelo. El objetivo del trabajo es estudiar, analizar el estado y modelo del proceso de formación de la cultura económica de los estudiantes de secundaria. Los principales métodos de investigación son el análisis teórico de la literatura científica, psicológica y pedagógica sobre el problema de investigación, el estudio y la generalización de la experiencia sobre el problema; observación, interrogatorio, conversación, cualimetría, ensayo, método de peritaje; experimento indagador y formativo; análisis del estudio; métodos de procesamiento estadístico matemático, procesamiento estadístico de datos empíricos. El estudio se realizó sobre la base de la Universidad Pedagógica Estatal de Krasnoyarsk que lleva el nombre de V. P. Astafiev con estudiantes de licenciatura y maestría, estudiantes de secundaria, profesores de instituciones educativas, estudiantes de universidades e instituciones educativas profesionales secundarias de

*Krasnoyarsk y Territorio de Krasnoyarsk. El análisis del estado del problema de la formación de cultura económica de los estudiantes de secundaria a partir de los instrumentos de prueba diagnosticados reveló dependencias correccionales entre los indicadores de cuatro componentes en la estructura de la formación de cultura económica de los estudiantes de secundaria y los niveles de esta formación en las condiciones del desarrollo del entorno de educación digital en la región. Las dependencias obtenidas y los datos de investigación permitieron modelar este proceso en el contexto del desarrollo del entorno educativo digital de la región, describiendo el grado de formación de cada componente en cada nivel.*

**PALABRAS CLAVE:** *Cultura económica. Estudiantes de secundaria. Entorno educativo digital. La región. Formación de cultura económica.*

## Introduction

In the context of a new strategy for the country's economic growth, it is important to form, develop and maintain an economic culture among the younger generations in the educational environment of school, which reflects modern market trends. If earlier the Russian society and school were tasked with developing high school students' qualities of a business person that would allow them to quickly adapt their own business, find a place in life, and economic stability in our society largely depended on this, but today this task has become more complicated. One of the priority areas in Russia is the process of digitalization of education, which involves the creation of a digital educational environment, the use of the possibilities of digital technologies in the implementation of improving the quality of education (RUSSIA, 2018a; RUSSIA, 2018b). In 2019 Russia faced a new task - to increase competitiveness in the global market, both in individual sectors of the Russian economy and in the economy as a whole. The goal of education in the 21st century is to prepare a competitive, successful high school student who is able to adapt to socio-economic changes in the world, to build prospects for his personal and professional development. The relevance of high school students' economic culture formation is determined by the requirements for the content of education, which is fixed in Art. 14 of the Law of the Russian Federation «On Education in the Russian Federation» the State Educational Standard of basic general and secondary (complete) general education. All of the above documents assume the main goal is the formation of an economically cultural and literate personality in modern conditions of the information society are directly related to high school students' economic culture formation.

Recognition of the significance of the phenomenon under consideration in domestic educational practice and the realization that the system of high school students' economic culture formation is to a certain extent outdated and requires significant updating. In this regard,

the problems of finding approaches to high school students' economic culture formation in the context of Russia's transition to an innovative development path become urgent.

The aim of the work is to study, analyze the state and model the process of high school students' economic culture formation.

Before proceeding with the analysis of this problem, let us consider the very phenomenon of economic culture and its formation within the framework of the educational environment of the school.

In domestic and foreign literature there are several definitions of economic culture, confirming the complexity and versatility of the phenomenon under consideration.

The very concept of «economic culture» includes the presence of the words «economy» and «culture», which leads to different interpretations of the phenomenon of «economic culture». The economic culture integrates and transforms the essential features of the economy and culture, i.e., it can be considered that economic culture represents a specific type of general culture. In this regard, the modern content of culture has numerous attempts to define it and the diversity of the approaches to its definition. Pitirim Sorokin was right when he noted that culture is “a set of meanings and norms owned by interacting persons, a set of carriers who objectify, socialize and reveal these meanings” (SOROKIN, 1992).

American cultural anthropologist J. Murdoch identified and substantiated the fundamental characteristics of culture: culture is transmitted through learning; it arises on the basis of learned behavior; culture is cultivated by education; culture is social, that is, cultural skills and habits are shared by people living in organized collectives or communities; culture is ideational, that is, it acts in the form of ideal norms or patterns of behavior; culture ensures the satisfaction of basic biological needs and secondary needs arising on their basis; culture is adaptive, because it equips a person with mechanisms of adaptation to environmental conditions and to his fellows; culture is integrative, since it contributes to the formation of a collective as a coherent and integrated whole (MURDOCK, 1949).

T. I. Zaslavskaya and R.V. Ryvkina consider economic culture as a regulator of economic behavior that plays the role of social memory of economic development, facilitating or interfering with the translation, selection or renewal of values, norms, needs in the economic sphere and orienting its subjects to certain forms of activity (ZASLAVSKAYA; RYVKINA, 1991).

In recent years, there has been an increasing interest in the concepts «The formation of economic culture and the digital economy».

According to T. F. Kuznetsova, this happens because, at its core, digital culture corresponds to the general idea of culture as a system of values that unites society in a certain era and at a certain level of development of social relations in it. It is obvious that the interpretations of the digital economy and digital society determine the specifics of digital culture. As for the digital economy, in recent domestic federal documents that have a legal status, its understanding as an economy based on digital technologies has been established, and they, in turn, are interpreted as “a discrete system based on coding and information transfer methods, which allows performing a variety of versatile tasks in the shortest time intervals” (KUZNETSOVA, 2018).

The implementation of the latest technologies is possible only under the conditions of creating a single educational space, which is thought of as a global market for educational services.

The high school students' economic culture formation in the modern conditions of the information society is directly noted not only in the works of domestic researchers (ZASLAVSKAYA; RYVKINA, 1991; KUZNETSOVA, 2018), but also in foreign sources. The importance of economic education goes far beyond the task of improving the understanding of the basic principles of supply and demand and the functioning of the economy. Economics can be taught by generating new knowledge through the familiarization of learners in a combination of real learning environments and experiences. Students who do not get the opportunity to study economics and deepen their economic understanding will probably never show much interest in the subject or in their economic world (WUTTKE *et al.*, 2020; INTERNATIONAL ENCYCLOPEDIA OF SOCIAL AND BEHAVIORAL SCIENCES, 2020; JÜTTLER *et al.*, 2020).

The necessity of high school students' economic culture formation including the issues of research for improving soft skills in high school students has shown that it improves their physical health, behavior, and changes their career aspirations (according to research by the LSE), the elements for the formation of resilience, navigating social media, developing healthy relationships and understanding responsibility. Soft skills such as human communication skills and emotional intelligence are increasingly in demand in the labor market as these skills cannot be easily replaced by technology. As for a number of foreign countries from 2020 personal, social, medical and economic education will be compulsory in UK schools for teenagers. The US Council on economic education notes that “the inclusion of economic education and learning personal finance necessarily in the National's program” (CEE, 2020). On all education systems, but also is able and responsible to solve economic issues that play a vital role in current

national concepts and foster citizenship. Economic competence and financial literacy are the keys to social participation and engagement.

The emerging trends in the development of digital technologies in the process of the formation of society are causing a significant complication and the emergence of new financial instruments that are quite difficult to master, expanding the possibilities of using economic services and digital services. We found that the main attributes of the digital economy are: high speed of all processes («instant result from digital services»); complex information technologies at the heart of financial instruments (blockchain, big data, information processing algorithms based on neural networks and artificial intelligence, 5G networks etc.); the growing role of new types and means of e-commerce (crypto currencies, the spread of virtual payment systems, personalized and adaptive paid digital content, contextual advertising); significant the overflow of commercial and financial activities into cyberspace (online banking, virtual exchanges, virtual assets and paid digital services) (LOMASKO *et al.*, 2020).

The conducted content analysis of teaching materials and regulatory documents of the Ministry of Education of the Russian Federation allowed us to single out a number of competencies of school graduates as structural elements of the economic culture of a senior student. These include: critical and analytical thinking, creativity, entrepreneurship, communication skills, cooperation, the ability to educate yourself, the ability to make decisions, digital, financial and entrepreneurial literacy (GRASS *et al.*, 2017).

In this regard, it is digital technologies that are singled out by the Russian government as a way to solve educational problems that cannot be solved or poorly solved on the basis of traditional technologies. According to the current regulatory documents in the field of education (RUSSIA, 2020; MEDVEDEV, 2014), among the tasks of attracting digital technologies in order to determine the essential components of the pedagogical conditions for high school students' economic culture formation in the educational process, we single out: intellectual and emotional involvement of students in the educational process; ensuring accessibility to educational resources; the possibility of choosing modern digital technologies for the purpose of successful economic socialization in the real economy when choosing future professions (qualifications); personification through individual educational routes of the student, taking into account the methods, forms and means and the period of mastering the educational material; providing real opportunities to students in a dynamically developing open educational environment; the possibility of using a systematic approach to the design of a more effective organization of educational and cognitive activity of students (RUSSIA, 2016; RUSSIA, 2018; RUSSIA, 2017).

The creation of a digital environment intended to improve the Russian school education quality makes it possible to cover such problematic stages of the high school students' economic culture formation as: knowledge of the basics of economics and obtaining practical skills in the production and consumption of a social product and/or service; personal finance management; successful economic socialization in the real economy through obtaining the basics of economic knowledge and skills, individualization through creative and entrepreneurial activities; professional self-determination and strategies for building one's own career and its implementation.

The digital environment, the implementation of the ideas of digitalization of education is one of the ways to optimize and expand the capabilities of the traditional educational process. The digitalization of education provides real opportunities for building an open education system that ensures the availability of education through the use of e-learning and distance learning technologies and allows each person to choose their own learning path. In addition, the use of digital technologies realizes the possibility of using a systematic design method and a more efficient organization of educational and cognitive activities of students due to the dynamic adaptation of automated training programs.

In the context of digitalization, and the above changes, there is a need to search and justify new means and forms for the formation of the economic culture of high school students to new socially oriented directions of development of the innovative economy of Russia. At the same time, it seems that the most practice-oriented solution for one of the tasks of forming a structural element of the economic culture of high school students is a virtual platform for financial literacy, which makes it possible to implement modern methods and means of economic socialization and adaptation not only of students, but of the adult population, in the first place, due to training and the possibilities of mastering modern digital technologies of smart education, which are equivalent in nature to the technologies of the digital economy which we have already described in more detail, taking into account these features (MELMAN *et al.*, 2018).

Since successful adaptation to the new realities of the digital economy, a deep understanding of its mechanisms and tools for ensuring personal financial security for the younger generations seems to be the basis for the economic well-being of people in the emerging smart society. Consequently, the created virtual platform will serve as the basis for organizing the activities of the KSPU named after V. P. Astafiev in cooperation with other organizations of the social sphere of Krasnoyarsk Territory, primarily educational organizations, to promote the development of high school students' economic culture in the

region. The general scheme of functional characteristics was presented by us earlier (MELMAN *et al.*, 2018). To assess the possibilities of economic culture formation in a virtual environment, a specialized portal was developed «Your economic culture» for high school students and teachers of Krasnoyarsk Territory<sup>3</sup>. This virtual platform is available only to authorized users, since when interacting with educational organizations and minors, questions of personal data protection arise. Registration and confirmation of users is carried out by a team of administrators and moderators. The appearance of the portal start screen is shown in Fig.1.

The portal contains 6 main sections: discussion platforms (for organizing online seminars and conferences, forums for exchange of experience and mutual consultations); collections of information and methodological materials; catalogs and topical thematic online resources; 3 specialized sections for organizing competitive events: economic dictations, Internet Olympiads, online contests; section «Learn and Develop!», which is designed to host automated online courses.

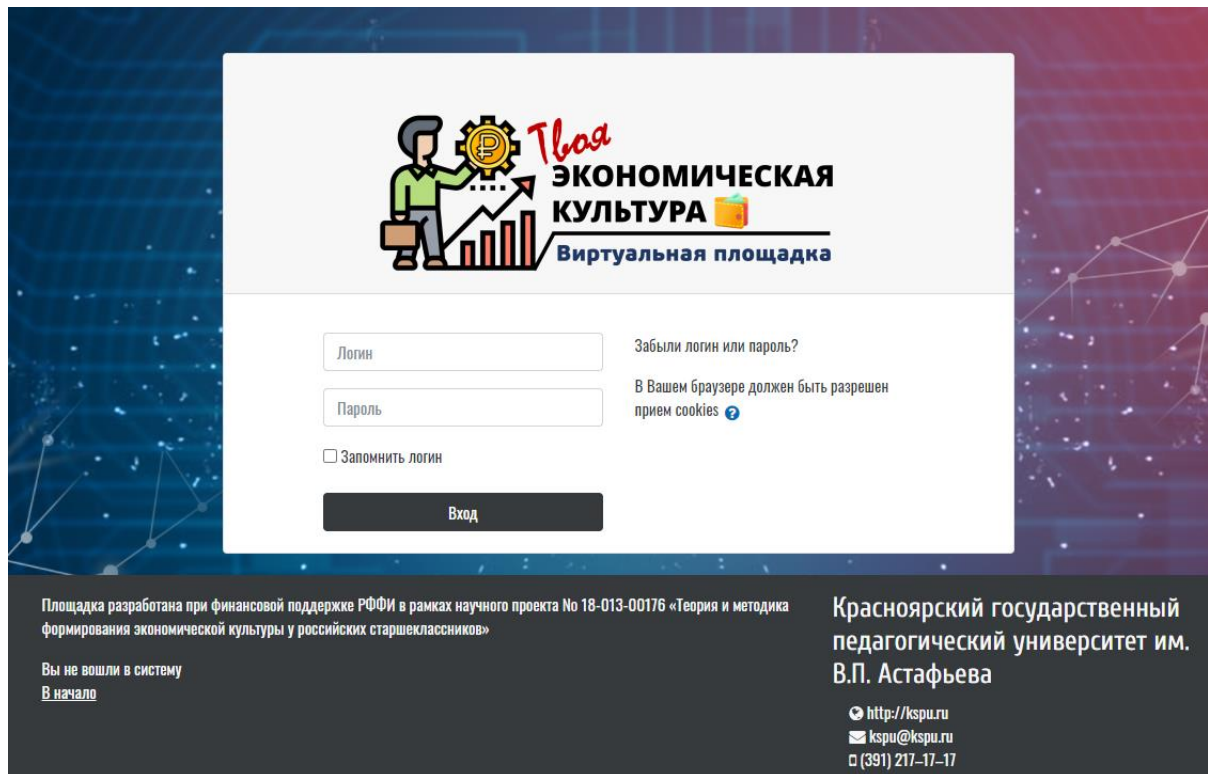
The navigator is interactive and allows you to expand the desired categories, displaying a list of resources available to users. An example of this feature was described by us earlier (GRASS *et al.*, 2021).

Analyzing the works of A. L. Arkhangelskaya, G.A. Vasilyeva and T.V. Filippovskaya *et al.* (ARKHANGELSKAYA, 2004; VASILYEVA, 2017; FILIPPOVSKAYA, 2000) the unity of the following components can be identified in the structure of economic culture formation: the personal component including economically important personality traits, erudition, and ability to receive and absorb new knowledge necessary for the formulation and solution of social and economic tasks; motivational-value, determines motives, beliefs, values and cognitive interests; activity-practical, determining the possession of skills and abilities acquired in practical and socio-economic activities;- reflexive, including self-esteem and self-analysis of their own activities, the definition of ways of self-development.

<sup>3</sup> Available: <https://econom.smart-u.ru>. Access: 10 Jan. 2021.



Figure 1 – Start screen of the specialized port



Source: Devised by the authors

At the same time, analyzing the studies by T. D. Dubovitskaya etc., the motivational component must be divided into internal and external (DUBOVITSKAYA, 2005; BADMAEVA, 2004). So, N. V. Shelkovnikova notes that «external motivation is understood to be one that comes from the environment external to the acting person, which creates an incentive for activity. Moreover, sometimes this stimulus can be dominant in the creative movement. The internal motives of economic (entrepreneurial, innovative) activity are interest in the learning process, interest in ways of activity, the desire to obtain as much knowledge as possible, interest in the content of educational material, the desire to systematize knowledge, interest in independent work, the desire to overcome difficulties, the desire enjoy intellectual, entrepreneurial and research work. The internal motives of economic activity are of particular importance, since they determine the personal, emotional experience of the cognitive needs of students. These motives are the components of cognitive interest. Thus, internal motives are, on the one hand, a personal need to actively participate in the national economy, and on the other, a desire for self-development (SHELKOVNIKOVA, 2009).

Diagnostics of the level of economic culture formation was carried out according to the selected criteria: intellectual-cognitive, value-motivational, activity-creative. Analyzing the research process of senior high school students' economic culture formation, tasks, functions

and level of responsibility, the following levels can be distinguished: optimal, medium and low. The optimal level of a high school student's economic culture presupposes possession of solid systemic knowledge and applies it in practice with a full understanding of the laws of economic development. If a high school student independently reproduces economic knowledge at the level of understanding, analysis based on the interpretation of schemes, graphs and, on their basis can trace the interrelationships of economic phenomena and processes, is able to solve stereotypical problems, then we are talking about the middle level of economic culture. With a low level, high school students' possession of theoretical knowledge is limited, when defining economic phenomena, recognition prevails only by external signs, mechanical reproduction prevails at the level of individual facts, without interconnection with each other.

The selected components of the formation of economic culture are in some dependence at each level and are manifested in varying degrees of formation. If the threshold values of each component at each level are determined, then it is possible to develop a research program and diagnostic material to assess senior high school students' economic culture formation. In this paper, it is proposed based on the study of the process of modeling of the studied phenomenon, based on testing, questionnaires, surveys and etc. to research senior high school students' economic culture formation in a digital educational environment.

## **Research methods and discussion**

To assess the formation of each component at different levels of senior high school students economic culture formation and drawing up a general model 630 participants and 12 teachers of secondary schools and university professors of Krasnoyarsk and Krasnoyarsk Territory, and 540 high school students and 32 students of university and secondary vocational educational organizations and 28 students of the Krasnoyarsk State Pedagogical University named after V.P. Astafiev, including 12 master's degree students studying under the training program «Pedagogical Education», and 18 parents took part in this study.

It should be noted that for each stage of the experimental work, we identified a set of research methods that ensured a complete and reliable solution to the tasks (Table1).

**Table 1** – Functions and tasks of the stages of experimental work

Stages	Functions	Tasks
ascertaining	diagnostic	identifying the state of the problem of senior high school students' economic culture formation in the digital educational environment; development of criteria and indicators of senior high school students' economic culture formation; determination of the initial level of senior high school students' economic culture formation in secondary schools of Krasnoyarsk and Krasnoyarsk Territory
	production stage	determination of the goal, tasks of experimental work; development of a program of experimental work; determination of expected research results
	organizational	planning the organization of the experimental work; creation of the necessary conditions for the implementation of the experimental work program
formative	transformative	implementation of a model of senior high school students' economic culture formation in a digital educational environment; mastering the course «Economic culture» based on the active use of SMART-technology and other alternative pedagogical technologies; determining the correspondence of the obtained results to the main theoretical provisions of senior high school students' economic culture formation in a digital educational environment.
	diagnostic	recording and fixing changes in a specially organized process of senior high school students' economic culture formation, determining the dynamics of senior high school students' economic culture formation in the context of a digital educational environment
generalizing	analytical	processing of the data obtained through theoretical comparative analysis and methods of mathematical statistics; generalization, systematization and description of the obtained research results

Source: Designed by the authors

The methods of experimental work are an addition to the methodology of this research: at the ascertaining stage – questionnaires, interviews, conversations, polls were used; testing, observation; methods for generalization, grouping, comparison, differentiation modeling; at the formative stage – the study of the products of activity; analysis of entrepreneurial, social, research projects, ranking; scaling; methods for generalization, grouping, comparing and differentiating, graphical method, scoring method; expert assessment method; methods for tracking results; monitoring, generalization, differentiation of experience; statistical methods of data processing and testing the hypothesis.

In accordance with the identified components, the following procedure for assessing the level of formation of senior high school students' economic culture formation was determined within the framework of the stages of the diagnostic research program developed by us: -

consideration of each component of economic culture as a set of various structural elements in each of its components; - the introduction for each structural unit indicator of the corresponding value characterizing the formed level of senior high school students' economic culture :  $K_1, K_2, K_3, K_4$  (when using the method of complex assessment of the quality of an object, all different-dimensional indicators of properties must be transformed and reduced to one dimension or expressed in dimensionless units); - determination of the level of formation of each structural component of senior high school students' economic culture formation using various diagnostic methods and in various conditions, including a digital educational environment; - considering the unequalness of structural components by introducing the unequalness of structural components and identifying weight coefficients, which were determined by the method of individual expert assessment by ranking; - calculation of the value of the level of senior high school students' economic culture formation; - conducting a comparative analysis of the levels of senior high school students' economic culture formation. In our opinion, to assess the level of senior high school students' economic culture formation, it is advisable to use a point assessment for these students using a questionnaire developed for these purposes, assess the formation of the entrepreneurial culture according to a 5-point system based on the selected four criteria: personal, motivational-value, activity-practical, and reflective.

When senior high school students are assessed on a 5-point scale assessment of economic culture level formation, it is possible to calculate an integral indicator for each criterion of the study. To do this, the surveyed senior high school students determine not only the assessment of each single indicator of economic culture level on a 5-point scale, but also their significance in descending order, which makes it possible to carry out a generalized assessment according to the following formula:

$$I_i = K_1 \times 3_1 + K_2 \times 3_2 + \dots + K_n \times 3_n \sum 3_n,$$

Where  $I_i$  is an integral indicator for assessing the criterion of senior high school students' economic culture formation t,%;  $K_1, K_2$ , etc. - the share of respondents-senior high school students, who rated a single indicator of senior high school students' economic culture formation as «excellent» and «good»,%;  $3_1, 3_2$ , etc. - the significance of a single indicator of the component of the formation of economic culture, %.

After determining the integral indicators for each criterion is calculated and evaluated by summarizing the integral index of evaluation of senior high school students' economic culture formation by the following formula:

$$I_g = \sqrt{I_p \times I_m \times I_{ap} \times I_{r4}},$$

They were Ip- integral index of evaluation of senior high school students' economic culture formation in the context of the personal component, %; m - integral index of evaluation of senior high school students' economic culture formation in the context of motivational-value component, %; Iap - integral index of evaluation of senior high school students' economic culture formation activity-practical-component, %; Iris an integral indicator for assessing senior high school students' economic culture formation in the context of their reflexive component, %.

The results of the responses were processed by the descriptive statistics method. The students' answers were analyzed and attributed to different levels of entrepreneurship culture formation. Undoubtedly, special questionnaires and interviews on competencies have a relatively greater objectivity compared to observing the behavior of senior high school students in the process of entrepreneurial activity, which made it possible to distinguish three levels of the entrepreneurship culture formation (Table2).

**Table 2** - Levels of senior high school students' economic culture formation

Levels	The value of the level of senior high school students' entrepreneurship culture, %					
	2018		2019		2020	
	The control group	The experimental group	The control group	The experimental group	The control group	The experimental group
according to the results of senior high school students' survey						
Optimal				66.2		72.8
Average		58.9	32.6		42.4	
Low	54.2					
based on the results of experts' survey						
Optimal				66.9		62.7
Average		51.0	33.3		40.6	
Low	58.6					

Source: Devised by the authors

Presented in table 2 the results indicate changes in the level of senior high school students according to the results of the questionnaire survey in all the studied groups, but to a greater extent in the experimental group. Taking into account that the necessary and sufficient conditions (in the digital educational environment) were created in the experimental group for the implementation of the special course «Economic culture», which was held in the format of the new educational SMART technology and the trainers were actively involved in practical activities.

## Conclusion

Thus, the conducted examination of the issue of high school students economic culture formation in terms of digital educational environment represented above diagnosed tool revealed correlations dependencies between parameters of the four components in the structure of economic culture formation (personal, motivational value, practical and reflective).

Having assigned weights to each indicator and using generalizing integral indicator, this model can be used for computer diagnostics of high school students economic culture formation and it can give recommendations on the development of one or another characteristics.

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