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Sociocultural competence in the context of information technology

Competencia sociocultural en el contexto de las tecnologías de la información

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Abstract

The content and levels of sociocultural competence are considered. The purpose of the article is to form sociocultural competence in students using modern information technologies. The general methodology of the study is based on the philosophical provisions of the theory of scientific knowledge; humanistic

philosophy; systems theory; dialectical theory about the general connection, interdependence and integrity of the phenomena of objective reality; unity of consciousness and activity in the formation and development; provisions of pedagogical science regarding the formation of a personality, its professional development taking into account the features of future professional activity. As a result of the study, an algorithmic methodology for the development of sociocultural competence in future specialists was developed. The project method was introduced as an active approach to the formation of sociocultural competence in students. The study was conducted in two stages to develop sociocultural competence in students using modern information technologies. Based on the results of the initial experiment, it was concluded that the sociocultural competence of students in higher educational institutions is underdeveloped. Therefore, we have developed pedagogical conditions and methods for improving students' socio-cultural competence using modern information technologies.

Keywords: socio-cultural competence, information technologies, higher education, Web technologies, online resources, multimedia tools.

Resumen

El objetivo de este artículo es desarrollar la competencia sociocultural en estudiantes mediante el uso de tecnologías de la información modernas. La metodología general del estudio se basa en las premisas filosóficas de la teoría del conocimiento científico; la filosofía humanística; la teoría de sistemas; la teoría dialéctica sobre la conexión general, la interdependencia y la integridad de los fenómenos de la realidad objetiva; la unidad de conciencia y actividad en la formación y el desarrollo; y las premisas de la ciencia pedagógica relativas a la formación de la personalidad y su desarrollo profesional, considerando las características de la futura actividad profesional. Como resultado del estudio, se desarrolló una metodología algorítmica para el desarrollo de la competencia sociocultural en futuros especialistas. El estudio se llevó a cabo en dos etapas con el objetivo de desarrollar la competencia sociocultural en estudiantes mediante tecnologías de la información modernas. Con base en los resultados del experimento inicial, se concluyó que la competencia sociocultural de los estudiantes de instituciones de educación superior está subdesarrollada. Por lo tanto, se han desarrollado condiciones y métodos pedagógicos para mejorar la competencia sociocultural de los estudiantes mediante tecnologías de la información modernas.

Palabras clave: competencia sociocultural, tecnologías de la información, educación superior, tecnologías web, recursos en línea, herramientas multimedia.

Introduction

Globalization and integration of socio-cultural and socio-economic processes that affect the prospects for the development of education and take place in the world require a radical renewal and deep rethinking of the system of professional training of a new generation of specialists. Modern society places high demands on the quality of training of future specialists. One of the main tasks is to involve young people in interaction in the global space and the formation of communication skills. In the conditions of the awakening of national self-consciousness of peoples, the intensification of international relations of social groups, the need for highly cultural specialists is becoming more urgent, priorities are being reassessed, and there is a need for specialists who possess a set of key competencies that are associated in pedagogical practice with the implementation of the competency approach. In the countries of the European Union, it is the competency approach that is considered a constructive core idea of professional training of specialists and is recognized as the basic idea of education reform. And it is socio-cultural competence that determines a person’s ability to navigate in different areas of professional life and social life, the active life activity of an individual (Rodríguez-Abitia et al., 2022).

Modern society is characterized by the influence of information and communication technologies on the development of civilization, and the dominance of information and knowledge in all spheres of human life.

It is precisely such trends that led to the formation of the global information space. One of the priority tasks of education is the formation of socio-cultural competence in students with the help of modern information technologies, which involves the ability to build one's behavior by the peculiarities of norms, the presence of knowledge about the national and cultural features of the world space, and the norms of non-verbal and verbal behavior of countries. Therefore, the use of information technologies significantly intensifies and improves the process of forming socio-cultural competence of students.

Effective learning should be built based on a specially designed virtual educational environment, which includes a complex of applied, electronic, educational, communication and instrumental means that "allow you to organize full-fledged educational interaction of both constantly contacting and separated by space and time subjects of the educational process, using the latest innovative technologies" (Jorente, 2012).

Therefore, the formation of socio-cultural competence in students using modern information technologies is a relevant and necessary problem for research.

Literature Review

Analysis of the theoretical achievements of modern pedagogical science has shown that it has accumulated valuable experience in studying innovative processes of forming socio-cultural competence of students in higher education, in particular, a wide range of problems related to innovative aspects have been comprehensively and deeply investigated.

Leva (2015) dedicated the research to studying the possibility of forming socio-cultural competence in the listening process; to determining the features of the use of listening in learning French as a means of forming foreign language socio-cultural competence in students; to determining the list of criteria for the suitability of texts for listening during French language learning for the formation of foreign language socio-cultural competence of students.

Cortés et al. (2019) emphasize that recently, platforms or applications for communicative interaction have been created, which involve the creation of new codes, signs, or expressive forms of communication; therefore, it is necessary to provide students with communicative strategies that will allow them to interact effectively in these media.

Mendoza Muñoz & Párraga Muñoz (2022) in their article emphasize that digital pedagogical competence is a set of knowledge, abilities, skills, and abilities related to the use of technologies to create meaningful learning that contributes to pedagogical management. Their study analyzes pedagogical management in the classroom based on digital pedagogical competence with an emphasis on information literacy. The results show a significant level of collaboration and information exchange between teachers regarding the use of digital technologies. They emphasize that teachers should use a model that takes into account the competencies of the ability to identify, find, store, organize, and analyze information using web search engines, evaluating their purpose and relevance for acquiring knowledge.

Ferreira & Rady de Almeida (2018) propose a mapping/assessment of IT professionals in terms of their potential and skills. They discuss a proposal for identifying the profile of IT professionals based on the theory of multiple intelligences and clustering algorithms. As a result, they found correlations that may indicate the causes of such delays and shortcomings in software development projects.

Colás-Bravo et al. (2019) research is also devoted to the formation and development of sociocultural competence. It has been proven that the formation of sociocultural competence is influenced by several factors: education, general development, social environment, the relationship between culture and language of communication, culture of communication, mutual understanding, history, cultural heritage, worldview, orientation, and self-esteem.

Camacho Vásquez et al. (2023) considered the problem of forming sociocultural competence in future foreign language teachers, substantiated the methods of using multimedia technologies, the project method, and Internet technologies in classes in higher education institutions in the process of forming sociocultural competence.

The scientific achievements of these and other authors create a powerful basis for generalizations of a theoretical nature and give grounds to assert that the problem of forming socio-cultural competence in students using modern information technologies has not become the subject of a separate scientific study in both theoretical and practical aspects. Therefore, the insufficient methodological and theoretical elaboration of the problem, its relevance determined the choice of the research topic.

However, the mechanisms for applying modern technologies to form socio-cultural competence are not sufficiently adapted for educational institutions; therefore, they require further work.

Thus, the relevance of the scientific understanding of the problem of scientific research is due to the contradictions between:

- The objective need for scientific and methodological support for the process of forming socio-cultural competence in educational institutions, and the insufficient development of this issue in the methodology of teaching information technologies.
- The importance of forming socio-cultural competence of students in the conditions of information technologies and the lack of a holistic theoretical and experimental substantiation of this process.

Therefore, the need to resolve the identified contradictions, the insufficient level of theoretical and practical development of the specified problem, the lack of its systematic scientific analysis, and its relevance determined the choice of the topic of the article.

PURPOSE OF THE RESEARCH. Formation of socio-cultural competence in students using modern information technologies.

Methodology

The general methodology of the study is based on the philosophical provisions of the theory of scientific knowledge; humanistic philosophy; systems theory; dialectical theory about the general connection, interdependence and integrity of the phenomena of objective reality; the unity of consciousness and activity in the formation and development; provisions of pedagogical science regarding the formation of the personality, its professional development, taking into account the features of future professional activity.
Research methods:

- *Theoretical*: methods of synthesis, generalization, theoretical analysis, systematization of empirical and theoretical knowledge to determine the state of research on the problem of forming socio-cultural competence in students using modern information technologies; problem-target analysis and structural-functional method to clarify the structure and content of socio-cultural competence as a pedagogical phenomenon.
- *Empirical*: interviews, questionnaires, pedagogical observation, diagnostic tasks, pedagogical experiment to determine the levels of formation of socio-cultural competence in students using modern information technologies and verify the effectiveness of justified specific pedagogical conditions.
- *Statistical*: for qualitative and quantitative analysis of empirical data – methods of descriptive statistics; application of the Pearson statistical criterion (χ^2) for comparative analysis of experimental and control groups, studying indicators among students.

The reliability and validity of the results obtained, the objectivity of their assessment were ensured by the methodological soundness of the initial positions and the qualimetric mechanism for assessing the quality

under study, the use of a complex of complementary research methods, and the involvement of a group of respondents from a higher educational institution in the analysis of its results.

To assess the homogeneity of experimental and control data collection, statistical processing was carried out using MS Excel and SPSS (Statistical Package for Social Science) programs.

In our article, we used quantitative methods of data analysis. This group of empirical research methods includes methods of obtaining information about the object under study that allow identifying its quantitative characteristics.

The implementation of the pedagogical experiment was carried out in three stages: preparatory, main, and final.

At the preparatory stage, the purpose and objectives of the study were determined, the experimental plan was developed, methods of measurement and processing of results were identified, control and experimental groups were selected, and their homogeneity was checked.

At the main stage, an experiment was conducted. The experience of forming sociocultural competence of students was conducted, generalized, and studied.

It was found that the experimental and control groups do not differ significantly from each other in terms of the level of formation of sociocultural competence. According to the results of the ascertaining experiment, a conclusion was made about the insufficiently formed sociocultural competence of students studying in higher educational institutions.

Innovative interactive classes were held with a predominance of problem-search situations, art actions, debates, brain-rings, art trainings, etc., which positively influenced the formation of several competencies in students: creative, communicative and self-educational, which involves the perception of future professional activity as an integral part of one's life and the student's mastery of the experience of independent creative activity.

At the final stage, the results of the experiment were analyzed, their reliability was confirmed, and conclusions were drawn about the pedagogical effect of the experiment.

The formative stage of the study was devoted to experimental work, during which the ideas of activity and systemic approaches to solving the problem of forming socio-cultural competence in students using modern information technologies were tested and developed; a methodology for forming socio-cultural competence of future specialists was created and pedagogical conditions for the formation of this competence were developed and the effectiveness of pedagogical conditions in the formative experiment was determined.
To organize the experimental work, students were divided into two groups: a control group (CG) – 43 students and an experimental group (EG) – 42 students.

The structure of socio-cultural competence consists of components: cognitive, creative, and value. The criteria were determined: cognitive, emotional-semantic, value, and levels (high, medium, low) of the formation of socio-cultural competence in students.

It was found that the experimental and control groups do not differ significantly from each other in terms of the level of formation of socio-cultural competence.

Based on the results of the ascertaining experiment, it was concluded that the socio-cultural competence of students studying in higher education is insufficiently formed.

Such results are explained by the lack of developed pedagogical conditions and methods for the formation of sociocultural competence of students, a lack of understanding of the importance of the issue of the formation of sociocultural competence in students for successful life and further personal development. Therefore, we developed pedagogical conditions and methods for the formation of sociocultural competence of students.

We conducted a statistical analysis of the results to increase the reliability of the conclusions at the formative stage of the experiment.

To clarify the presence of a significant difference in the results of the control and experimental groups, that is, the effect of the developed method for the formation of sociocultural competence of future specialists and the development of pedagogical conditions for the formation of this competence and to determine the effectiveness of pedagogical conditions in the formative experiment, the Pearson criterion was used – χ^2 Chi-square method.

It is concluded that both the traditional training system and the proposed methodology for the formation of socio-cultural competence of future specialists and the development of pedagogical conditions for the formation of this competence have a positive impact on the level of formation of socio-cultural competence of students using modern information technologies. However, the effectiveness of the proposed integrative methodology and pedagogical conditions based on the holographic approach to the formation of students' socio-cultural competence is confirmed in the control section of the formative stage of the experiment by a significant difference between the EG and CG.

Thus, the results of the control group and the experimental group regarding the level of formation of socio-cultural competence of students using modern information technologies are a consequence not of the influence of random factors, but of the action of pedagogical conditions and methods.

Results and Discussion

Content and levels of socio-cultural competence. The task of the algorithmized methodology for the formation of socio-cultural competence in future specialists.

A component of the general cultural competence of the individual is socio-cultural competence. Acquired and formed throughout life, socio-cultural competence creates favorable conditions for successful life and functioning in the existing labor market. From the point of view of competitiveness, employment, career, and socio-cultural competence are becoming increasingly significant. The mission of providing an opportunity for a person to acquire competencies is pursued by higher education institutions, which is necessary for the successful integration of a person into the social environment, professional life, and meeting the demand of the labor market (Ieva, 2015).

Sociocultural competence of future specialists is the ability to implement in the process of learning skills, abilities, and knowledge acquired in the process of solving specific professional tasks for intercultural communication in the context of the phenomenon of sociocultural interaction when a person acts as a person, consciously and actively oriented towards joint activities with various representatives of society. And respect for the rights of another person, humanistic value orientations, creative and practical attitude to the surrounding world, and affairs lie at the heart of such activities. Therefore, the sociocultural competence of a future specialist is their ability to implement acquired skills in the process of obtaining knowledge, abilities, and skills (Colorado-Aguilar & Edel-Navarro, 2015).

Let us characterize the levels of sociocultural competence, characterized by systematicity:

- *Micro level of sociocultural competence* (individual level of interaction) – the level of interaction of an individual with information. This level includes the individual and typological features of each teacher due to psychophysical characteristics.
- *Midi level of sociocultural competence* (group level of interaction) – includes the characteristics of social behavior that are necessary for continuous professional activity and the organization of effective educational activities.
- *Macro level of sociocultural competence* – (level of interaction between a person and society, a person and a person) – an organizational level that characterizes the sociocultural existing mechanisms for increasing the effectiveness of a specialist's professional activity (Campos Bandrés & Marco Sisamón, 2021).

The existence of such a component as sociocultural competence has the following significant advantages:

1. Provides an opportunity to determine and evaluate indicators that characterize the effectiveness of a person's professional activity, rather than determining the psychophysiological qualities of specialists.
2. Provides an opportunity to identify an insufficient level of professional development and training of future specialists, the quality of professional formation, and develop a support program for the formation of sociocultural competence in students using modern information technologies.

The structure and content of sociocultural competence of future specialists is determined through such criteria of educational tasks and goals as critical thinking, mobility of knowledge, formation of skills and abilities to apply theoretical material in practice (flexibility). Mainly, information components fill knowledge according to the criterion of mobility: recognition, depth of memorization, understanding, reproduction, and information search.

The tasks of the algorithmic methodology for the formation of sociocultural competence in future specialists are to stimulate the individual's ability to think critically, interpret facts at a basic level, apply the skills of synthesis, analysis, and evaluation of new material, clearly and express thoughts, and use information search methods (Monteiro & Façanha, 2025).

Formation of socio-cultural competence in students using modern information technologies. Main stages in working with Internet resources.

The use of information technologies allows to use of visual, auditory, and kinesthetic channels of human perception of information in the educational process of higher education, which significantly increases the volume of students' assimilation of the material.

A significant advantage of using modern information technologies in higher education is an increase in the share of independent group work and individual work of students, increasing interest and cognitive activity in the assimilation of professional material, and the integration of virtual means of communication: blogs, audio and video chats, forums, teleconferences, electronic audio mail into the educational process of higher education, will contribute to the improvement of professional skills and will serve to expand the passive and active vocabulary of the student, will contribute to an increase in the volume of creative and practical works of a research and search nature.

The development of individual educational trajectories of students is facilitated by Internet technologies.

The role of the teacher can focus on the selection of authentic virtual sources recommended for use.

Even though the world wide web is an inexhaustible bank of professional knowledge, providing an opportunity to compensate for the lack of interaction and communication through a large number of telecommunication systems that operate in offline and online modes, the methodology for using computer technologies in the formation of sociocultural competence in students is currently, unfortunately, not yet systematically developed (Miyer et al., 2021).

In the higher education system, almost all changes occur with the assistance of Internet technologies, because they help to transform the outdated method of learning into an interactive and more flexible course of mastering knowledge. Internet capabilities have a great impact on the effectiveness of today's education, because it is through their introduction into the educational process that the teacher has the opportunity to improve the organization of the educational process as a whole by introducing the latest methods. During training, to process the course material, the student can turn to numerous available information sources.

The impetus for transformations in the field of education was the rapid development of Internet technologies, creating new requirements for the educational system and representatives of society.

Therefore, it is possible to trace the trend towards the merger of information tools for learning and educational tools for learning.

Let's reveal the stages in working with Internet resources:

- Familiarization with the available material, that is, a review of available web resources to gain confidence in the skills of processing professional information and adaptation to the Internet network.
- Search, using web resources, for the necessary material to meet the criteria of the given goal.
- Exchange of opinions on educational information and communication with other users of Internet resources.
- Introduction to the educational process of higher education of educational electronic resources, which should precede the preparation and selection of appropriate sources of information for students.
- Development of innovative exercises based on selected Internet resources (Camacho Vásquez et al., 2023). The use of information technologies in the process of professional training of students opens up wide opportunities for the development of socio-cultural competence of future specialists, deepening knowledge (Colás-Bravo et al., 2019).

Multimedia tools are one of the most important components of information and communication technologies. Their use makes it possible to diversify and expand the program of studying professional disciplines (de León Sigg et al., 2023).

A source of additional information in the formation of socio-cultural competence in students using modern information technologies is online resources, a means of repeating and assimilating the studied professional material. This is an integral component of a student's professional training (participation in online conferences, correspondence, webinars, seminars, etc.) (Leal Uhlig et al., 2023).

The importance of Web technologies as an element of virtual reality in the formation of socio-cultural competence in students. The project method is an active method of forming socio-cultural competence in students.

In the context of increasing the role of virtual communication, it is necessary to review the forms, content, and means of training students and forming socio-cultural competence in them. The development of information technologies has enabled the emergence of new innovative learning technologies based on Web technologies as an element of virtual reality.

Educational Web technologies are a complex of hardware and software tools, information and communication technologies, and Internet services that implement learning strategies, pedagogical principles, management, and organization of students' educational activities.

Thanks to Web technologies, virtual reality arises, which becomes a new means (socio-cultural, psycho-physiological, technological) of existence in the human world, forming a new type of pedagogical technology.

The virtual environment in which a student's daily life takes place plays a significant role in the professional activities of a modern specialist.

The activities of professional virtual communities correspond to the realities of the existence of an information society, which allows for a new type of professional communication, where virtuality becomes the main feature.

Educational Web technologies help create information resources and exchange them, and not only receive the necessary material from the Internet.

In the modern educational process of higher education, new formats of learning based on:

- Information technologies (Web-based learning, distance learning, blended learning, mobile learning, etc.).
- Personally oriented technologies (gamification, personalization, etc.).
- Informal technologies (challenging, storytelling), etc. (Ninamango Santos et al., 2023).

Working with Web technologies develops students' skills related to mental operations: synthesis, analysis, comparison, semantic and verbal prediction, abstraction, comparison, etc. In the process of working with educational Web technologies, a favorable atmosphere for learning is created, socio-cultural competence is formed in students, psychological and social qualities are developed, and the ability to work in a team and self-confidence increase.

The effectiveness of learning and the formation of socio-cultural competence in students increases due to the creation of favorable conditions for mastering professional disciplines and increasing interest in learning.

The use of educational Web technologies, compared to traditional face-to-face learning, allows you to implement an effective learning management system for collecting information about the educational process and professional training.

Five types of Web materials were created specifically for education: multimedia scrapbook, treasure hunt, hotlist, subject sampler, and webquest (Cisneros-Barahona et al., 2023).

For the formation of socio-cultural competence in students, a web quest is of great importance – a specially organized type of research activity, an educational website on the Internet, in which all the information with which students work or part of it is located on different websites. Web quests cover: a topic, an educational subject, a separate problem, and can be interdisciplinary.

There are two types of web quests:

1. Short-term web quests are designed to be completed within several lessons and have the goal of expanding knowledge and integrating it.
2. Long-term web quests are aimed at expanding and multiplying the knowledge obtained from information sources.

Publication of students' works in the form of websites or web pages can be the result of working with a web quest (on the Internet or locally), portfolios, or presentation applications.

When forming socio-cultural competence, web quests are created for students to use their time more effectively, to apply the information received for practical purposes, and to develop the skills of analysis, critical thinking, information evaluation, and synthesis (Mateus & Quiroz, 2021).

The integration of web-quests into the educational process of higher education will allow the implementation of methodological principles of learning and general didactic principles of the educational process: the principle of interactivity, the principle of autonomy, the principle of authenticity, etc. (Chumpitaz Campos & Lomba-Portela, 2024).

One of the active methods of forming socio-cultural competence of students is the project method. Its purpose is to teach students to practically apply the acquired knowledge, to stimulate their interest in knowledge, and to solve specific problems in professional activities. The project method can be implemented using new information technologies: electronic databases, computer telecommunications, interactive television, virtual libraries, etc. (Isoda et al, 2021).

A feature of the project method is learning through appropriate, active student activity, corresponding to their personal interests. The basis of the project method is the development of: the ability to independently construct their knowledge, cognitive skills of students, critical and creative thinking, and orientation in the information space. The project method allows students to broaden their horizons, gaining experience from its practical use, and to understand each other during the defense of projects. The project method allows solving the problems of developing and forming intellectual skills of creative and critical thinking, which will contribute to the development of personality, professional growth of students, and independence. The project method allows, with the obligatory presentation of the results obtained, to solve the problem as a result of independent actions of students and includes a set of search, problem, and research methods, creative in their very essence (Camacho Vásquez et al., 2023).

Methodology and organization of experimental work.

The study was conducted with the set goal in two stages.
The search stage was the ascertaining stage. It is connected with the analysis of practical work experience and theoretical sources regarding the formation of socio-cultural competence in students using modern information technologies. At the same time, an ascertaining experiment was conducted, and the experience of the formation of socio-cultural competence of students was generalized and studied.

The formative stage of the study was devoted to experimental work, during which the ideas of activity and systemic approaches to solving the problem of forming socio-cultural competence in students using modern information technologies were tested and developed; the creation of a methodology for forming socio-cultural competence of future specialists and the development of pedagogical conditions for the formation of this competence and determining the effectiveness of pedagogical conditions in the formative experiment.

To organize experimental work, students were divided into two groups: control group (CG) – 43 students and experimental group (EG) – 42 students.

The structure of sociocultural competence consists of components: cognitive, creative, and value. The criteria are determined: cognitive, emotional-semantic, value, and levels (high, medium, low) of sociocultural competence formation in students.

It was found that the experimental and control groups do not differ significantly from each other in terms of the level of sociocultural competence formation. Thus:

- 10% of EG students and 10% of CG students revealed a high level of sociocultural competence formation.
- 38% of EG students and 37% of CG students revealed an average level of sociocultural competence formation.
- 52% of EG students and 53% of CG students revealed a low level of sociocultural competence formation.

According to the results of the ascertaining experiment, it was concluded that the sociocultural competence of students studying in higher education is insufficiently formed.

Such results are explained by the lack of developed pedagogical conditions and methods for the formation of socio-cultural competence of students, a lack of understanding of the importance of the issue of the formation of socio-cultural competence in students for successful life and further personal development.

Therefore, we developed pedagogical conditions and methods for the formation of socio-cultural competence of students.

The first condition was of a content nature, which contributed to the development and isolation of a cross-sectoral content idea of an innovative methodology that highlights the basis of productive activity – the relationship between the social and cultural, implements cross-subject connections in the methodology of professional special courses using modern information technologies. The first condition had the following forms of organization: innovative interactive classes with a predominance of problem-search situations, art actions, debates, brain rings, art trainings, etc. The content of this methodology had a positive impact on the formation of several competencies in students: creative, communicative, and self-educational, which involves the perception of future professional activity as an integral part of one's life and the student's mastery of the experience of independent creative activity.

The tasks of the methodology include:

- Formation of skills for the practical application of acquired knowledge of professional cultural activity in personal activity (participation in debates and discussions using modern information technologies, reasoned speech, etc.).
- To predict the assessment of any phenomenon of a student's life from a cultural point of view, the formation of systems thinking skills.
- Implementation of a personal approach for all participants in the educational process as a factor of expressive communication.

The implementation of the substantive, first condition is possible when implementing the second pedagogical condition, methodological, which includes in its activities the implementation of an integrative methodology for the formation of socio-cultural competence in students using modern information technologies, which helps to integrate a set of didactic and educational methods.

The second pedagogical condition had the following forms of organization: binary integrated classes, connecting innovative events in the form of brain rings, debates, conferences using modern information technologies, pedagogical trainings, etc.

The specificity of the methodology in the process of expressive life activity of the student consisted in the transformation of the multidimensionality of the educational process based on the understanding of socioculture. The methodology implemented the relationship of didactic and educational forms and methods, which were integrated based on the holographic approach. The holographic approach in pedagogical science is proposed within the framework of vitagenic education and is formulated as a process of volumetric multidimensional disclosure of the content and states of the phenomenon under study. The integrated methodology, by the purpose of the work, has a specific feature:

- Promotes the semantically meaningful activity of the student, the subordination and perception of educational information.
- Contains the variability of the content volume of the lesson.
- In the context of cultural and creative human expressive activity is aimed at multi-subject integration, to demonstrate to students the process of multidimensionality of knowledge.

Based on the holographic approach, the goal of such a methodology is the emergence of a hologram effect in the educational process, when the topic of the academic discipline appears from several positions “stereoscopically”.

The integration of educational and didactic educational established methods was determined by the use of the holographic approach:

- Methods of orientation and stimulation of emotional and sensory attitude to the professional activity of students.
- Methods of stimulating dialogical behavior using modern information technologies.
- Methods of forming social behavior.
- Methods of transforming communication and professional activity using modern information technologies.

Taking into account the holographic approach, these methods were applied, which affected their organizational forms.

The implementation of such an integrative methodology requires restructuring the activities of a teacher of a higher educational institution, who performs new functions in the educational process. Therefore, the third pedagogical condition is the interpretative pedagogical style of influence on the student.

The third pedagogical condition is a form of organization of the educational process – the construction of an interpretative pedagogical style, which is based on innovative management of students' activities using modern information technologies and stimulating them to active participation.

The third pedagogical condition had the following forms of organization: classes of "free choice" of the student, pedagogical trainings that included conversations using modern information technologies, open questions, and the creation of intrigue.

The above pedagogical conditions make the organization of the process of forming students' socio-cultural competence using modern information technologies possible and effective.

A formative stage was conducted for experimental testing of pedagogical conditions and methods for forming students' socio-cultural competence using modern information technologies.

Strict adherence to the developed pedagogical conditions ensures the formation of students' sociocultural competence in cognitive, emotional qualities (associativity, divergent and heuristic thinking, analytical and generalizing thinking), communicative qualities (setting tasks, joint decision and partnership with the teacher, dialogic orientation) and activity qualities (search for optimal actions, problem formulation, presentation in society, exchange of ideas), which can contribute to productive personal social activity in professional activity.

The tasks of the experiment include:

- Preparing students for experimenting, for a conscious attitude to the application of the methodology.
- Training teachers-experimenters.
- Creating innovative pedagogical conditions for implementing the methodology for forming students' sociocultural competence using modern information technologies.
- Ensuring students' sign-symbolic interpretation of educational information.
- Conducting control sections.

Analysis of the results of an experimental study of the effectiveness of pedagogical conditions and methods for forming students' sociocultural competence using modern information technologies.

The educational process in the control groups took place within the educational standardized requirements of the program of higher education institutions. In the experimental groups, training was carried out using the integrative methodology proposed by us based on the developed pedagogical conditions.

Results of the cognitive criterion. When measuring the indicators of the cognitive criterion, the analysis of the results showed that in the EG students realized the importance of studying professional activity, understanding sociocultural competence, its importance for life, because sociocultural competence helps not only in the development of a person's fantasy and imagination, but also develops the desire to communicate and understand another person.

Students from the CG also demonstrated a desire for innovative acquisition of professional knowledge, but their professional orientation remained poorly expressed and unstable.

The difference between EG and CG reflects these results (Fig. 1):

- A high level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 26% and CG students, 12% of students.
- An average level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 55% and CG students, 49%.
- A low level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 19% and CG students, 39% of students.

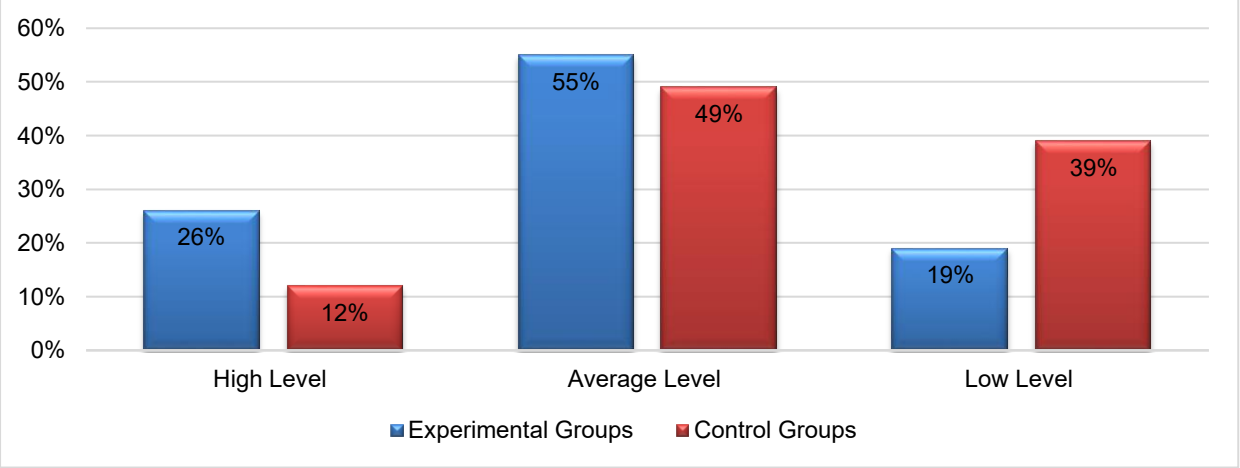

Fig. 1. Comparison of socio-cultural competence levels (cognitive criterion).

Results of the emotional-semantic criterion. Analysis of the indicators of students' ability to meaningful interpretation indicates the activation of EG students' thinking activity through flexibility of thinking, speed of memorization, originality of presentation of material, intensive process of establishing semantic connections with other branches of knowledge, associative transformation of social meanings (Fig. 2):

- A high level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 30% and CG, 11% of students.
- An average level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 53% and CG students, 46%.
- A low level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 17% and CG, 43% of students.

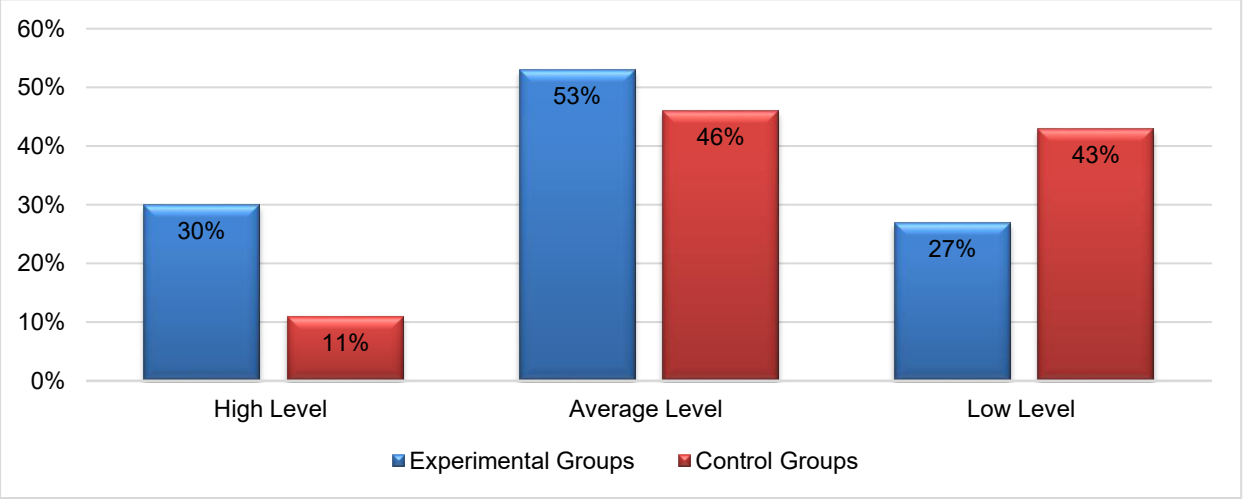

Fig. 2. Comparison of socio-cultural competence levels (emotional-semantic criterion).

Results of the value criterion. Analysis of the results and observation of students' reactions indicated a significant shift in the formation of students' socio-cultural competence using modern information technologies (Fig. 3):

- A high level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 21% and CG students, 13% of students.
- An average level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 51% and CG students, 41%.
- A low level of formation of students' socio-cultural competence using modern information technologies was shown by EG students, 28% and CG students, 46% of students.

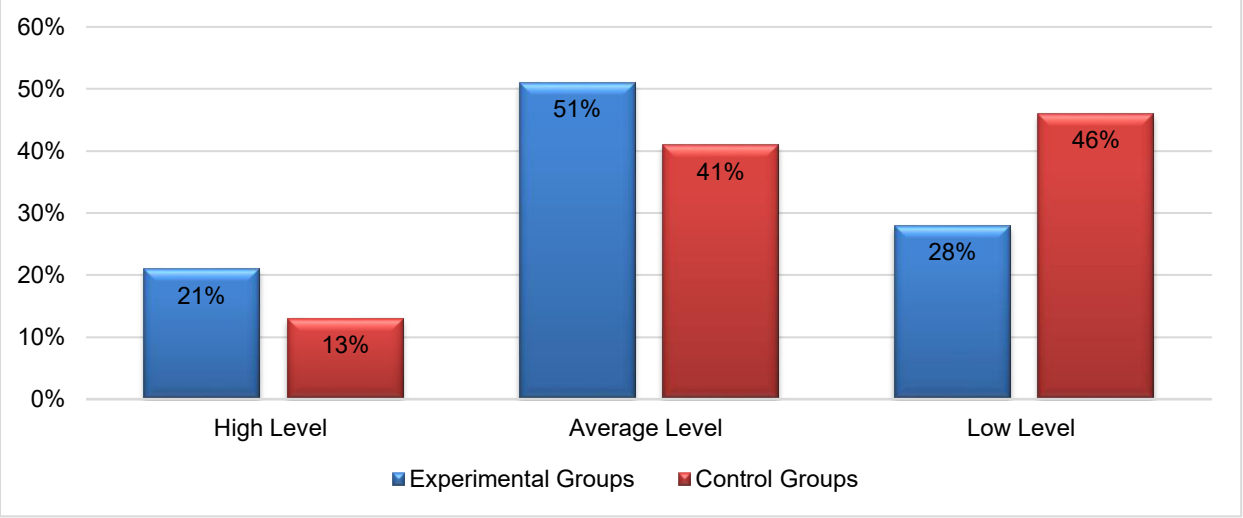

Fig. 3. Comparison of socio-cultural competence levels (value criterion).

Among students of the experimental groups involved in the experiment, the analysis of the research results indicates the detection of positive dynamics in the state of formation of students' socio-cultural competence using modern information technologies.

We conducted a statistical analysis of the results to increase the reliability of the conclusions at the formative stage of the experiment.

To clarify the presence of a significant difference in the results of the control and experimental groups, that is, the consequence of the action of the developed methodology for the formation of socio-cultural competence of future specialists and the development of pedagogical conditions for the formation of this competence and the determination of the effectiveness of pedagogical conditions in the formative experiment, the Pearson criterion was used – χ^2 method Chi-square.

Between the reliability of the EG data, the level of probability at the end and beginning of the formative stage of the experiment, $p \leq 0.05$ $\chi^2_{crit.}=5.991$, $\chi^2_{emp.}= 31.700$.

At the end of the formative stage of the experiment, the level of probability between the EG and CG data – $p \leq 0.05$ $\chi^2_{crit.}=5.991$, $\chi^2_{emp.}= 15.979$.

Let us present comparative results of the levels of formation of socio-cultural competence of students using modern information technologies (Fig. 4).

EG showed the following results:

- The number of students with a high level of formation of socio-cultural competence using modern information technologies increased by 17%.
- The number of students with an average level of formation of socio-cultural competence using modern information technologies increased by 16%.
- The number of students with a low level of formation of socio-cultural competence using modern information technologies decreased significantly, by 32%.

CG students did not have such pronounced positive changes. CG showed the following results:

- The number of students with a high level of formation of socio-cultural competence increased by 5%.
- The number of students with an average level of formation of socio-cultural competence increased by 7%.
- The number of students with a low level of formation of socio-cultural competence decreased by 12%.

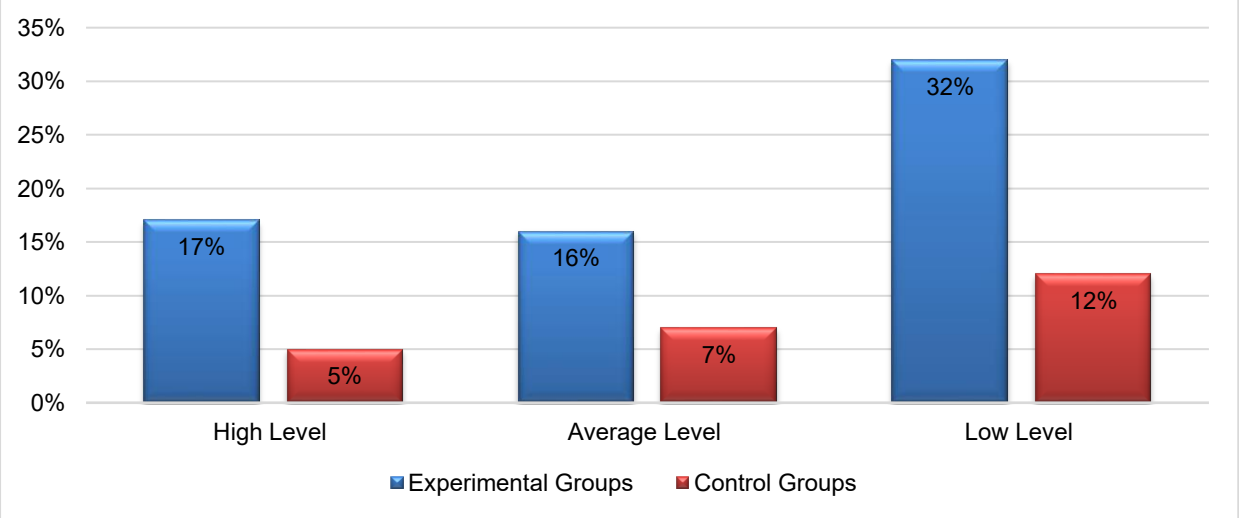

Fig. 4. Comparative Analysis of Socio-Cultural Competence Formation.

It is concluded that both the traditional training system and the proposed methodology for the formation of socio-cultural competence of future specialists and the development of pedagogical conditions for the formation of this competence have a positive impact on the level of formation of socio-cultural competence of students using modern information technologies. However, the effectiveness of the proposed integrative methodology and pedagogical conditions based on the holographic approach to the formation of socio-cultural competence of students, which is confirmed in the control section of the formative stage of the experiment by a significant difference between the EG and CG.

Thus, the results of the control group and the experimental group regarding the level of formation of socio-cultural competence of students using modern information technologies are a consequence not of the influence of random factors, but of the action of pedagogical conditions and methodology.

The positive impact of the formative integrative methodology and pedagogical conditions is evidenced by qualitative and quantitative changes in students of the experimental groups, when revealed by the method of comparing the diagnostic results at the stages of the experiments, ascertaining, and control. This makes it possible to draw conclusions and describe the prospects for further research.

Conclusions

The content and levels of socio-cultural competence are revealed. The task of an algorithmic methodology for the formation of socio-cultural competence in future specialists is set. The ways of forming socio-cultural competence in students using modern information technologies and the main stages in working with Internet resources are revealed. Multimedia tools are singled out as one of the most important components of information and communication technologies. Online resources are presented as a source of additional information in the formation of socio-cultural competence in students using modern information technologies. The importance of Web technologies as an element of virtual reality in the formation of socio-cultural competence in students is proven. The project method is presented as an active method for the formation of socio-cultural competence in students. Web quests are of great importance for the formation of socio-cultural competence in students.

The study was conducted with the set goal – the formation of socio-cultural competence in students using modern information technologies – in two stages.

The search stage was the ascertaining stage. It is connected with the analysis of practical experience and theoretical sources on the formation of socio-cultural competence in students using modern information technologies. At the same time, an ascertaining experiment was conducted, and the experience of the formation of socio-cultural competence of students was generalized and studied.

The formative stage of the study was devoted to experimental work, during which the ideas of activity and systemic approaches to solving the problem of forming socio-cultural competence in students using modern information technologies were tested and developed; the creation of a methodology for the formation of socio-cultural competence of future specialists and the development of pedagogical conditions for the formation of this competence and the determination of the effectiveness of pedagogical conditions in the formative experiment.

To organize the experimental work, students were divided into two groups: control group (CG) – 43 students and experimental group (EG) – 42 students.

The structure of socio-cultural competence consists of components: cognitive, creative, and value. The criteria were determined: cognitive, emotional-semantic, value, and levels (high, medium, low) of sociocultural competence formation in students.

It was found that the experimental and control groups do not differ significantly from each other in terms of the level of sociocultural competence formation.

According to the results of the ascertaining experiment, it was concluded that the sociocultural competence of students studying in higher education is not sufficiently formed.

Such results are explained by the lack of developed pedagogical conditions and methods for the formation of sociocultural competence of students, a lack of understanding of the importance of the issue of the formation of sociocultural competence in students for successful life and further personal development. Therefore, we developed pedagogical conditions and methods for the formation of sociocultural competence of students.

We conducted a statistical analysis of the results to increase the reliability of the conclusions at the formative stage of the experiment.

To clarify the presence of a significant difference in the results of the control and experimental groups, that is, the effect of the developed methodology for the formation of socio-cultural competence of future specialists and the development of pedagogical conditions for the formation of this competence and the determination of the effectiveness of pedagogical conditions in the formative experiment, the Pearson criterion was used – χ^2 method Chi-square.

It was concluded that both the traditional training system and the proposed methodology for the formation of socio-cultural competence of future specialists and the development of pedagogical conditions for the formation of this competence have a positive impact on the level of formation of socio-cultural competence of students using modern information technologies. However, the effectiveness of the proposed integrative methodology and pedagogical conditions based on the holographic approach to the formation of socio-cultural competence of students, which is confirmed in the control section of the formative stage of the experiment by a significant difference between the EG and CG.

Thus, the results of the control group and the experimental group regarding the level of formation of socio-cultural competence of students using modern information technologies are the result not of the influence of random factors, but of the action of pedagogical conditions and methods.

We see prospects for further research in the development of tasks for the formation of socio-cultural competence and a set of exercises for future specialists.

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