Digital Humanities in the Concept of Training Specialists in Information, Library and Archival Science

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Abstract

Objective processes of radical modernization of the activities of information and analytical structures, libraries, and archives determine the training of a modern specialist in Digital Humanities. Their role as scientific, information-analytical, and educational centers is growing, which provides an opportunity to quickly and fully use information resources, conduct information searches using information technologies, systems, and networks, and enter the world of scientific and educational space. The research aims to study the evolution of training specialists in the Information, Library and Archival Science (ILAS) specialty toward Digital Humanities at the Lviv Polytechnic. The results. The training of specialists in the ILAS specialty at the Lviv Polytechnic is adapted to the modern needs of the formation of a new generation of personnel in information activities. It ensures the penetration of digital technologies into the administrative, socio-economic, and humanitarian spheres of society and strengthens the Ukrainian information market. The education of bachelor's specialists in the ILAS specialty has gone through a long evolutionary path from a culture-centric interpretation of the training content to a hybrid concept of "Education and practice toward Digital Humanities ", which is based on the requirements of national standards in Ukraine. A system of program competencies and student learning outcomes that form a conceptual model of the abilities of future specialists provided the transformation of the training content; a system of educational components embodying the practical implementation of this conceptual model; academic courses that are a means of acquiring theoretical knowledge and practical skills in the specialty. Focusing the training content on mastering the theory and practice of information-analytical, information-technological, and social-communication activities ensures the formation of a modern specialist who can apply the technologies of Digital Humanities to the activity of business, authorities, and management. Evolutionary changes in the concept of training specialists in the ILAS specialty at the Lviv Polytechnic correspond to the main trends in the world's leading universities.

Keywords

Digital Humanities, Information, Library and Archival Science, Library and Information Science, scientific and technical information, scientific and technical library, educational work, educational program, program competencies, program learning outcomes, curriculum, educational components, course, quality of education

1. Introduction

One of the essential features of the information society is the fundamental modernization of the activities of institutions in the documentation and information sphere to implement network information

technologies. It creates scientific and technical prerequisites for including information and analytical centers, libraries, and archives in the global information space due to the informatization of society. Remote access to information and the use of local networks when working with databases and other resources (electronic publications, electronic catalogs) is a challenge and a need for modern society. The role of libraries and other information-analytical institutions as scientific, consulting, and educational information centers, which provide an opportunity to rapidly and thoroughly use information resources, enter the world's scientific and educational space, and conduct information searches using information technologies, systems and networks, is growing.

Introducing the latest information technologies and improving of means of documentation and distribution of information leads to the formation of qualitatively new characteristics of social communication:

- the need for information, comprehensively covering all types of human activity, is one of the integrated human needs;
- document communication is expanding in all spheres of social life;
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- document communication is expanding in all spheres of social life;
- document resources of society are increasing;
- flows of financial, technical and economic, technological, production and other information are unfolding, which gives rise to new forms of use of documentary information;
- the information infrastructure is expanding, which includes scientific and technical information, reference and information services of the state and local government system, book publishing and book trading enterprises, archives, patent and commercial services;
- implemented electronic document circulation ensures the circulation of documents in the domestic and international information space, at the vertical and horizontal levels;
- electronic protection of documents is needed.

These factors gave a new impetus to research problems related to information provision in various spheres of human activity. The spread of information services was considered as one of the main resources that determine the socio-economic and technological status of the state.

In modern conditions, the documentation of managerial activities has gained the features of a high-tech production process: organizational, informational, analytical, legal, retrospective, and predictive. In the information society, information has become a dominant value and a strategic asset. Generation, processing, and transmission of information are fundamental sources of productivity and power [1, p.12]. The concept of the network society (virtual society, according to A. Bal) formulated by M. Castells assumes that the core of the new society is a new communication organization. It will be based not only on information but also on the network logic of the basic structure of society. In this way, a network type of social organization is being formed as a new one. Its main component is computerized information lines of communication that permeate all spheres of society [1, p. 293]. According to M. Castells, the social structure is formed on a global scale. It gains the features of a society in which the most important feature is not even the dominance of information or knowledge, but a change toward their use. As a result, the main role in the life of people and society is acquired by global network structures that displace former forms of personal and material dependence [1, p. 293]. In a transformational society, radical structural changes in social communication are taking place:

- dominance of functions and processes organized according to the principle of networks;
- rigid, vertically oriented social structures are replaced by flexible, horizontal networks through which information resources are exchanged.

Global informatization and computerization of society, creation of banks and databases within general information systems and networks, management consulting, and information management - these aspects of information activity required a new type of specialists. They must have the ability not only to search, process, store, and ensure the use of industry information on traditional paper and electronic media but also to generate new knowledge. After all, the success of firms in the market primarily depends on the master's level of new information and new knowledge. Such trends determined the processes of transformation of higher education in Ukraine toward its orientation

towards international educational standards, expansion of the spectrum of specialties aimed at training personnel for information activities, documentation and information support of management activities.

Thus, digital technologies have profoundly changed the essence of information, library, and archival activity, which determines the direction of modernization of the training content in the specialty "Information, library and archival science".

2. Related Works

Digitization is organically connected with the phenomenon of openness of knowledge, affects state and institutional policy in the sphere of higher education, and forms a technological platform for derived scientific concepts - open access to information, open education, and open science. The digital representation of data has changed how research is conducted and its results are stored, published, and transmitted.

In the era of big data, it becomes important for Library and Information Science (LIS) specialists to work with library management systems, identify user information behavior, and perform analytical tasks: intellectual data analysis, text analysis, knowledge analysis and classification, and information audit. Success depends on the ability to conduct in-depth analysis of data and text to possess information management technologies. The competencies and practical experience of LIS specialists go beyond information literacy and knowledge classification. Possessing the competencies of information and analytical work allows them to improve the management of institutions and learning management systems (LMS) with the help of understanding user-generated content (UGC). UGC library can serve as a source of insight into library management processes.

2.1. Training content of LIS educational programs

Comparative studies of accredited LIS programs are few, although they examine similarities, differences, and trends in the development of professional education in the conditions of a globalized, technology-oriented knowledge economy. A comparative study of 63 programs of the American Library Association (ALA) and 32 programs of the Chartered Institute of Library and Information Professionals (CILIP) was conducted to direct potential students to the choice of various LIS educational programs. Based on the publicly available websites of these programs, authors investigated the following parameters: title of the program, title of the academic unit offering the program, credit hours, required courses, and learning outcomes for the various programs. It was found that most of the programs keep the keyword "Library" in the title, but it is absent in the titles of the educational units that offer them. Most ALA and CILIP programs are semester-long and involve the study of research methods, internships, and practical experience, combined with a study of traditional library and information technology courses. E-portfolios have replaced comprehensive exams among ALA programs, but dissertation writing remains the final requirement for CILIP [2].

The current state of post-graduate archival education in North America is studied based on 65 courses from archival higher education programs. The compliance of the programs with the professional standards outlined in the Guidelines for a Graduate Program in Archival Studies (GPAS) of 2016 was examined. The following research questions were considered:
- types of postgraduate archival education programs;
- types of courses studied by post-graduate students from archival programs;
- correspondence of archival program courses to GPAS requirements;
- consequences of program compliance or non-compliance with GPAS requirements.

There is a trend towards the opening of postgraduate archival education programs based on LIS programs, especially under the auspices of iSchools. A wide variety of postgraduate archival education programs and courses combinations have been identified, calling into question the general utility of the GPAS. It is necessary to find a more flexible approach to getting postgraduate archival education [3].

In the content of LIS education, information organization (IO) and information retrieval (IR) are fundamental and conceptually interrelated spheres of study. They are included in the main curriculum through special or combined courses. According to the development trends in education, the main topics

of IO and IR form the core of LIS. Using content analysis, the curricula of 58 IO and IR courses in 38 different ALA-accredited LIS programs were studied. Descriptions of courses and topics are evaluated using the ISO 5127 glossary as an analytical framework [4]. Three main types of courses were identified:

- special IO courses;
- courses related to IR in the context of reference services;
- combined courses that cover IO and IR alongside other fundamental topics.

Special courses little use topics from other subject areas, but combined courses use topics from both IO and IR. Among all courses, the prevalence of topics related to access, classification, databases, and metadata suggests a common area of intersection between IO and IR. The content of IO and IR shows a wider distribution in the core curriculum, which shows their continued relevance [5].

A group of undergraduate and postgraduate educational programs in the LIS specialty was investigated in terms of compliance with openness to knowledge, development of the potential of open knowledge, and improvement of curricula. The research was conducted in the following alternative aspects:

- presence in open access (OA), open education (OE), and open science (OSC) programs;
- compliance with OA, OSC, OE policies;
- consideration of national/federal mandates, policies, or regulations regarding OA, OSC, and OE;
- participation in informal educational programs.

It was found that LIS schools do not provide formal training for openness skills and competencies, but their libraries offer different training on this issue [6].

Response strategies of LIS schools to the future labor market are investigated in determining potential employers and competitors in the information space. The method of interviews with teachers of LIS departments, and thematic analysis of data on various aspects of the labor market was used. It has been established that libraries will keep their position in the traditional labor market for several years to come. However, a non-traditional labor market has emerged, which is characterized by new job titles and new functions. These innovations directly affect the future direction of education, and require updating and updating LIS educational programs [7].

2.2. Competencies of LIS students

A systematic analysis and audit of academic and public libraries was performed to determine the relevance of the competencies of students in LIS training programs regarding data analysis, intellectual text analysis, and to formulate practical ideas and solutions for improving the flexibility of library information services. Authors use the method of the living laboratory to provide an opportunity to apply technological innovations and tools for conducting research on LIS, as well as management, education, humanities, and social sciences. The method makes it possible to analyze publicly available information thanks to system audits. The level of efficiency of the online library was checked and a basic information audit was conducted. Gaps in LIS teaching skills that can contribute to library information management processes have been identified. Competencies in data mining, text analysis, and analytics are required to explore large data sets stored in various library repositories. It has been established that without retraining librarians and without incorporating analytical programming into the LIS curriculum, libraries cannot take advantage of these methods. Library training must fill the gaps in LIS training by incorporating courses into data mining, data analysis, text analysis, and processing into the curriculum. These courses will enable graduates to help library managers make informed decisions based on user-generated content (UGC), LMS auditing, and information auditing [8].

The result of the analysis of the experimental training programs was the development of the competencies structure of practice managers and internships in the subject area of LIS. The Constructivist Grounded Theory approach was used for data collection and analysis. A survey of specialists in LIS, as well as students, revealed a set of necessary competencies for practice managers. Qualitative data analysis software NVivo 12 pro was used to support coding methods, category development, and data analysis. The competencies structure of the head of practice in LIS is proposed, which covers five interrelated components: interactive, managerial, pedagogical, professional, and

technological. The framework helps to differentiate the potential and actual competencies required for the practical management of LIS practice. The development of the framework has methodological, theoretical, managerial, and academic significance [9].

LIS programs do not sufficiently provide for the acquisition of competencies that show the formation of such soft skills in students as oral and written communication skills, customer service, and flexibility. A nationwide survey of students found teachers include a range of soft communication skills in their courses, but mostly use passive rather than active learning methods. Library and information employers value developed intra- and interpersonal communication skills. Competencies that indicate the presence of soft skills in students should be foreseen during the development of courses and curricula [10].

To analyze changes in the profile of digital competencies, graduates of information and library studies completed the DigComp self-assessment questionnaire at Masaryk University in the Czech Republic. The diachronic analysis covered data for three academic years during 2018–2020. According to the students, they have insufficient training as highly qualified information specialists. The profile of competencies declared in compulsory educational programs did not change. Students did not independently gain individual competencies under new technological changes. Their competencies are strong in the areas of information literacy, data analysis, communication and collaboration, technical problem-solving, and digital technologies. Programming is the weakest competency. The educational program needs innovations to prepare digitally competent information workers [11].

Competencies in the training of librarians and information scientists are undergoing significant changes because of integrating new ideas and ICT services with the technologies of traditional library science, as well as because of the improvement of pedagogical and educational methods. However, there needs to be a clear formulation of criteria for ICT-based professional qualifications or experience levels. Advances in ICT have influenced the training content, professions, and career trajectories in libraries and the digital industry in India [12].

Global changes in digital technologies have actualized the need and opportunities for studying digital preservation processes. The digital preservation curriculum taught in library schools at the higher education level was studied. A significant increase in the role and interest in the study of digital preservation technologies in universities has been demonstrated. The educational activity needs greater integration and deepening of technological courses, and development of training content on ethical issues [13].

A pilot project to develop and test a sped-up learning program improves the ability of LIS students to work under time constraints. Two groups of students take part in the experiment: a control group that does not train for speed, and an experimental group that performs exercises for learning speed. Survey feedback suggests that speed training helps students learn faster. Students have a positive attitude to speed training. It is proposed to include speed training exercises in the LIS educational program [14].

Sun Yat-Sen University Library (China) develops various Library User Education (LUE) programs. Testing these programs helps improve library services to support the academic success of LIS students. Data from LIS students and non-LIS students are compared to explore unique characteristics. It was found that the LIS student group gave more importance to the importance of LUE programs, but they rated certain aspects of the professional competencies of practicing librarians as low [15].

2.3. LIS in the context of professionalization and information literacy training

The key task of studying the basics of information literacy for graduate students in LIS or management is to determine the components of the information literacy curriculum. The study focuses on developing a contextual and comprehensive information literacy training system for information professionals. Scientists and practitioners have reached a consensus on the sections of the information literacy course: computer, research, critical, informational, subject-specific knowledge; and copyright literacy in line with study and communication skills. Computer, research, and critical literacy are critical components of an information literacy curriculum for graduate students. [16].

LIS research has declined, as evidenced by the disappearance of these level courses at various universities. LIS research needs to find new scenarios to avoid obsolescence in a world in which information is constantly changing. The intelligence manager and intelligence analyst profile can lead to new areas of study and research, as well as new professional careers. Researched list of courses that

are taught in LIS specialty at Spanish universities and formed competencies for career growth in Intelligence Professional and Intelligence Analyst. A detailed analysis of the content of the LIS curricula taught in Spain shows the possibility of their adaptation to the subject area of intelligence. A significant list of courses that can create a new professional profile in the subject area of LIS – Intelligence Professional – has been established. Academic LIS-related courses have been taught in undergraduate journalism courses in Spanish public universities since the 1970s. After the adaptation of university education to the European Higher Education Area, the number of LIS courses, as well as the number of hours for their study, especially of a basic and compulsory nature, decreased at journalism faculties. Currently, at the national level, there is significant variation in LIS course offerings in undergraduate journalism. In different universities, 1-3 courses, with different study hours, their nature, and the academic year in which they are planned [17].

State institutes for the training and professional development of teachers are entrusted with the function of professionalizing school leaders regarding digitalization. The management paradigm of LIS compliance with the tasks of schools in the subject area of development and digitalization has two aspects of implementation:

- determination of the successful content and organization of training of school leaders for the formation of competencies related to digitalization;
- analysis of management processes and implementation of successful school development related to digitization and its dissemination in the education system.

Decision-making regarding digitalization and the logic of actions of state institutes of training and professional development of teachers is influenced by the position of both the government and school management. Control and coordination of actions of all project participants is a component of the overall process of development and implementation of effective professionalization related to digitalization [18].

2.4. Early Stages of LIS Training Program Development

The study of the compliance of Information Literacy (IL) education in 30 university-based library schools in Nigeria with international and national standards in LIS is based on an analysis of departmental documents, LIS curriculum manuals, and a survey of teachers. It was found that implementing the "information literacy" as a separate course will be hindered by the lack of IL laboratories in most LIS departments, where students could gain practical skills. There is a need to formulate a policy on integrating IL courses into the school system and ensure the implementation of this policy [19].

A powerful infrastructure of information and communication technologies is confidently penetrating the countries of South Asia. However, the library and information sector of the Republic of Maldives, which originated over seven decades ago, has not yet gone beyond the initial phase of development. For its development, state bodies must understand and solve difficulties through cooperation with employers of library and information structures, educational institutions, scientists, and teachers in LIS. Such tasks are also relevant for other developing countries [20].

The comprehensive conceptual model of Massive Open Online Courses (MOOC) was developed based on the project of open online courses for specialists in LIS. Problems and prospects of MOOC implementation, involvement of students in training, as well as the elimination of barriers to its implementation in India are analyzed [21].

A study of the process and status of accreditation of LIS training and qualifications in Zimbabwe shows a need for support for the profession from LIS curriculum developers, library associations, and society. Society encourages library and information professionals to gain qualifications under the requirements of the labor market and technological innovations. It is recommended to adhere to international accreditation practices, principles and standards, which make it possible to train qualified, versatile LIS specialists [22].

Fourteen LIS schools operate in Pakistan, of which seven teach at the Bachelor's level (BS-LIS). However, the oldest LIS schools do not offer a BS-LIS program. A comparison of the undergraduate LIS curriculum with the curriculum developed by the Higher Education Commission of Pakistan (HEC) shows that most of these schools follow the HEC guidelines. The HEC is currently demanding a review

and update of the LIS curriculum and ensuring compatibility of the university's BS-LIS program with the HEC curriculum. The unification of the LIS curriculum at the national level will help to develop a marketable curriculum for librarians, and will also help professional organizations in accreditation in international organizations [23].

LIS education in Arunachal Pradesh (India) is concentrated in a few private universities. Government organizations do not offer training in LIS. The government of Arunachal Pradesh, Rajiv Gandhi University, Library Association need assistance to ensure sustainable and quality education in LIS [24].

A pilot research project examines the competencies students gain while studying for the Master of Science in LIS at Maharshi Dayanand University (MDU), Rohtak, Haryana. Using the questionnaire method, it was found that most of them work in public, private, and special libraries. Most of the students are satisfied with the knowledge and skills they have gained in the LIS curriculum at MDU Rohtak [25].

2.5. Socio-demographic and pedagogical aspects of LIS education

Social justice and advocacy of inclusion, leadership, and diversity in information organizations has been a component of teaching pedagogy at the LIS Academy of the University of Alabama since 2019. Until recently, American LIS education has not embraced the principles of social justice and their application to teaching, learning, and research. The obstacle was the cultural inertia of outdated concepts, only Anglo-/Eurocentric research roots, privileged position of post-positivist paradigms. Innovative pedagogy in the LIS classroom involves adherence to the principles of social justice, diversity and inclusion, open education, and science. Innovation involves communicating to the community about student learning outcomes, assignment requirements, student assessment, and course opportunities and challenges. At the LIS Academy, student course projects integrate the contexts of social justice, learning, scholarship, access, and diversity in education, disrupt traditional pedagogy, and promote critical information activism [26].

The purpose of surveying LIS students at the University of North Bengal (India) is to study the dependence of competencies (knowledge, skills) in digital literacy (DL) on various socio-demographic criteria. It was established that the ability to decide the level of DL depends on gender orientation and place of residence [27].

Thus, the main directions of scientific research on the organization of educational work in the LIS specialty include:
- the content of LIS education programs;
- students' competencies in LIS;
- LIS in the context of professionalization, training in information and library literacy;
- experience in the initial stages of formation of LIS education;
- socio-demographic and pedagogical aspects of LIS education.

The synchronous slice of publishing activity shows that the problem of students' competencies, which they gain thanks to studying in the LIS specialty, reveals the highest level of productivity. Acquired competencies and learning outcomes of students are the core and essence of educational programs. It is indicative that the scientific professional community shows considerable interest in the experience of educational institutions that are in the initial stages of developing LIS education. The participation of universities in the scientific discourse about positive trends, even with low achievements, in the study of LIS contributes to their integration into the world's scientific and educational space (Fig. 1).

The system of implementing LIS educational programs is heterogeneous and has its own characteristics in different countries. Institutions offer education, according to LIS programs at various educational levels: bachelor's and master's levels in the structure of universities, library and information schools, and form of postgraduate education.

The general trends in the development of educational work in the LIS specialty include:
- the quality of education under LIS programs is evaluated depending on compliance with international and national standards in LIS;

- the scientific, educational, and practical sphere of LIS needs approximation, adaptation, and satisfaction of pragmatic needs of various areas of social life with wide use of information, information, and analytical technologies;
- the LIS program is basic for post-graduate education in issues of digitization, information literacy for specialists in archival activity, management, and other specialties of the humanitarian and socio-economic profile;
- the prestige and popularity of the special subject area of LIS largely depends on the departure from traditional ideas about its social role; libraries should gain the dominant status of information and analytical centers;
- innovative pedagogy in the subject area of LIS involves compliance with the principles of social justice, diversity and inclusion, open education, and science.
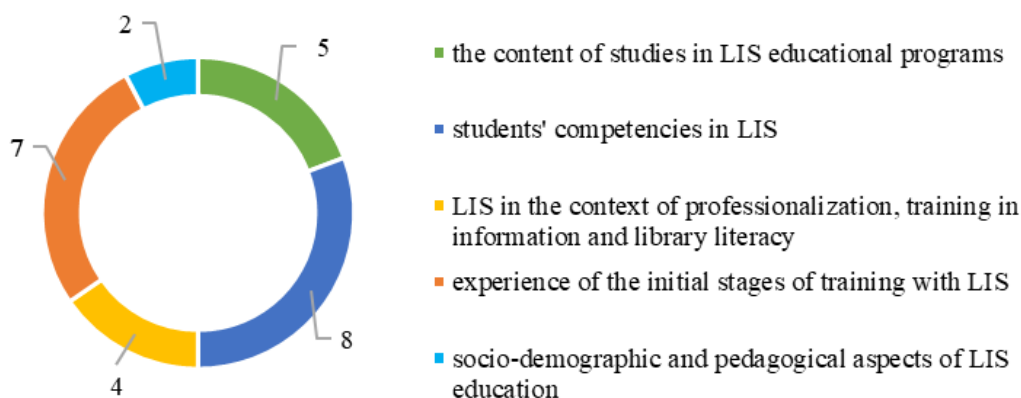
Figure 1: Publishing activity on LIS issues

Competencies of LIS specialists in the implementation of information management are formed by a complex of such educational courses as analytical programming, intelligent data analysis, text analysis and analytics, and digital preservation. The courses in information organization and information search are fundamental and conceptually interconnected with the satisfaction of the information needs of specialists in any subject area. They are necessary for researching the arrays of large data stored in the repositories of various libraries, making informed decisions based on user content, and auditing information.

3. Methodology

The article aims to study the evolution of the training concept specialists in the Information, Library and Archival Science (ILAS) specialty toward Digital Humanities (DH) at the Lviv Polytechnic National University (LPNU).

It is necessary to perform the following tasks:
- to establish the main directions of scientific research on development trends and organization of educational work in the ILAS specialty;
- to establish the evolution stages of the training content in the ILAS specialty from a culture-centric interpretation to the concept of education toward DH at the LPNU;
- to determine conceptual changes in the training content in ILAS specialty in terms of program competencies and learning outcomes, as well as educational courses derived from them, and practical training.

The object of the research is the training content defined in the educational programs "Documentation Science and Information Activity" (DSIA), "Information, library and archival science" (ILAS), and "Social Communication and Information Activity" (SCIA) for the first (bachelor's) level of higher education at the LPNU.

The scientific novelty of the study comprises establishing the evolution of training content in the ILAS specialty from a culture-centric interpretation to a hybrid concept toward DH.

Calculation of proportionality of profile, non-profile, redundant courses.

The dynamic of hybridization of the training concept in ILAS specialty from culture-centric to DH during 2000-2023 is established based on comparative calculations of the number of courses that have different thematic orientations: information-analytical, information-technological, and social-communication. The research was carried out based on a comparative analysis of educational and professional programs toward the preparation of the DSIA, and then in the ILAS specialty, approved in 2004, 2016, and 2019, as well as curricula for preparing students of 2008, 2018, and 2022 entry years.

Clarification of the conceptual and terminological apparatus.

The concept of an educational course as a functional unit of the educational process was used in the following meanings:

- completed pedagogically adapted system of concepts as a system of knowledge, and spiritual values, which ensures the formation of integrated competencies, general; and professional competencies, as well as the achievement of specified learning outcomes;
- unit of measurement.

The concept of "educational course" was interpreted as a unit of measurement:

- separate course or its part, which is taught during one semester;
- each of the course's parts taught in different semesters;
- course regardless of the number of credits for its study;
- course regardless of the form of knowledge quality control.

Non-profile courses are interpreted as those outside the conceptual framework of information and communication disciplines and are not included in the 2022 curriculum for entering students in the "Cycle of General Training" section.

Redundant courses are interpreted as duplicating courses already existing in the initial curriculum or increasing the number of credits provided for students studying a certain course from the curriculum of 2022.

4. Results

4.1. Scientific and technical prerequisites for the development of Digital Humanities technologies in the Information, Library and Archival Science specialty

In the structure of higher education in Ukraine, the direction of training 6.020105 "Documentation Science and Information Activity" (DSIA) of the subject area 0201 "Culture" appeared in the late 1990s - early 2000s. New in the educational space, the training direction of DSIA is becoming an organic component of the DH subject area. However, the culture-centric concept of its development has kept its position in the scientific and educational activity of universities for a long time [28].

In the conditions of the information society, social, communication, and information activities receive a powerful push for development thanks to the global spread of computer and information technologies. The concept of the content of the training of specialists toward "Documentation Science and Information Activity" considers the needs of a new generation of specialists toward information activities, strengthening the Ukrainian information market. In Ukraine, the problems of the system of social and communication sciences traditionally are developed on a humanitarian basis: the scientific and methodological base of bibliography and library science. Several factors determine the updating of the information-analytical and technological components in the professional profile of specialists:

- spread of science-intensive technologies;
- transformation of documentation and information provision of all spheres of social activity into a direct productive force;
- dissemination of information and computer technologies in all spheres of intellectual activity – scientific, technical, managerial, economic, and cultural.

The growing importance of information in the economy and social life determines the need for specialists in this profile. The processes of collecting, processing, and storing information both as traditional paper documents and in electronic format, creating banks and databases within unified

information systems, and management consulting become the technological basis for forming an independent field of activity that requires special training.

Integration into digital technologies gives the direction of documentation and information new qualitative and quantitative characteristics. The influence of information and computer technologies on the document subsystem of social communications causes fundamental changes in the management and activities of libraries and archives. Such realities as electronic management, electronic document circulation, electronic archives, digitization of archive collections, implementation of paperless technology, personnel management, increasing the number of documents in the organization, increasing the unification and standardization of documents, qualitative changes in technological documentation, the need for legal regulation of electronic documentation, development document studies as a science, improvement of the normative and methodological base [29].

4.2. Formation of the "Documentation Science and Information Activity" training direction at the Lviv Polytechnic (2000-2011)

Lviv Polytechnic National University became one of the first institutions of higher education in Ukraine, where the training of specialists in "Documentation Science and Information Activity" began [30].

The opening in Ukraine of the DSIA direction caused the clarification of several conceptual issues, which consider its subject area: objects of study and activity; learning goals; theoretical content of the subject area; methods, techniques, and technologies that students must master; tools and equipment necessary for learning theoretical knowledge and mastering practical skills.

The need for regulation of the training content at the state level has existed since the beginning of the training of specialists in this specialty in Ukraine. Universities form their own concepts of the training content toward documentation and information, which were a reflection of theoretical developments in librarianship, archival science, and a routine library and archival practice established in previous decades. There was a contradiction between, on the one hand, the archaic interpretation by scientists and practitioners of the public purpose and functions of institutions in the documentation sphere and their practical implementation and, on the other hand, the trends of global informatization.

Because of the absence of an industry standard regarding the generalized object of activity - the technological processes of documentation, preservation, document circulation, analytical and synthetic processing of information and its use - the understanding of the training content, which is directly and primarily revealed in the list of educational courses, becomes of fundamental importance.

In 2004, in standardization activities, the scientific community of document experts developed a recommended list of compulsory courses (distributed as a manuscript). Researchers consider this list as a basis for the further development and approval of the industry standard for the bachelor's level in DSIA [31]. The project involved training for 4 years. The training time was 7,830 hours (145 credits, 1 credit is 54 hours) for teaching compulsory and elective courses. Among the compulsory courses, 3 cycles are distinguished:
- cycle of humanitarian and socio-economic training (14 courses);
- cycle of socio-economic and natural science training (12 courses);
- cycle of professional and practical training (25 courses).

Of the total time, 5,562 hours (103 credits) are assigned to the study of compulsory courses, constituting 71% of the total time. Elective courses are divided into two types of educational components: a) courses from other educational programs offered by the university; and b) courses according to the DSIA profile. The courses chosen by the university prevail in terms of hours - 1,620 hours (30 credits) compared to courses of the student's choice - 648 hours (12 credits).

Analysis of the list of educational courses based on the profile makes it possible to note the following trends:
- inclusion in the cycle of humanitarian and socio-economic training of courses that form the basic educational level of students; they also appear in modern educational programs ("History of Ukraine", "Philosophy", "Ukrainian language of professional orientation", "Legal studies", "Political science", "Foreign language of professional orientation");

- wide inclusion of professional courses of the traditional humanitarian direction ("Document studies", "Clerical management", "Analytical and synthetic information processing", "Archival studies", "Management document studies", "Document support for the activities of institutions");
- wide inclusion of information and computer courses ("Applied software", "Internet technologies and resources", "Computer networks and telecommunications", "Database management systems");
- almost absence of courses in the sphere of communication, except for the course "Ethics and psychology of business communication";
- application of a hybrid interpretation of traditional humanitarian courses ("Electronic document management", "Information management", "Computer technologies in office management", "Marketing of information products and services");
- preservation of a high level of non-profile courses (16 courses out of 51 included in the list), which shows the interpretation of the specialty as a field that requires a high level of knowledge universality ("Religious Studies", "Psychology", "Sociology", "Economic Theory", "Higher Mathematics" ", "Fundamentals of management", "Fundamentals of marketing", "Ecology", "Administrative labor law", "Economic law", "Patent science", "Standardization and certification") (Table 1).

Table 1
Profile of compulsory courses for the training of specialists in DSIA (according to the recommended list of compulsory courses, 2004)

Type of course	Number of courses			
	Profile	Redundant	Non-profile	sum
Cycle of humanitarian and socio-economic training	7	-	7	14
Cycle of natural and scientific training	8	-	4	12
Cycle of professional and practical training	20	-	5	25
sum	35		16	51

However, in our opinion, such a significant content of non-profile courses shows the uncertainty of the generalized object of the bachelor's activity, the essence of the specialty, which involves the possession of certain theoretical knowledge and practical skills.

Educational and Professional Program (EPP), approved by the decision of the Scientific and Methodological Council of the LPNU in 2004. EPP functions as temporary norms until implementing the State industry standard. This is the first in the university EPP of a bachelor's level in the professional subject area 0201 "Culture". The normative term of study is 4 years. The training time for bachelors is 8,046 hours (149 credits, 1 credit = 54 hours), of which 5,832 hours (108 credits) are designated for compulsory courses, for elective courses of the university – 1,836 hours (34 credits), for courses of the student's choice – 378 hours (7 credits).

The analysis of the EPP of bachelor's training in LPNU (2004) based on the profile of educational courses for the training of specialists toward DSIA shows the existence of certain difficulties in the organization of the educational process:
- lack of a coherent and well-founded educational concept of training specialists;
- insufficient staffing, considering the educational specificity of the specialty.

This is evidenced by such factors as the high content of redundant (doublet) and non-specialized courses in all sections of the curriculum: among compulsory courses – 19, among elective courses – 9. Thus, the redundancy and non-specificity of educational courses is 48% (28 out of 58 courses provided for in the EPP) (Table 2).

Thus, among the compulsory courses included in the cycle of humanitarian and socio-economic training are: "Religious Studies", "Fundamentals of Economic Theory", "Sociology", "Fundamentals of Ecology"; to the cycle of professional and practical training: "Industrial aesthetics", "Modern problems of natural scientific technologies", "Modern technologies of leading industries", "Metrology, standardization, certification and accreditation", "Entrepreneurship and management". Among the

variable courses chosen by higher education institutions and chosen by students: "Ethnography of Ukraine", "International relations", "Macroeconomics", "Microeconomics", "New history of the countries of Western Europe".

Table 2
Profile of educational courses for the training of specialists in DSIA (according to the EPP of bachelor's level, 2004)

	Type of course	Number of courses		
		Profile	Non-profile, Redundant	sum
1	Compulsory courses			
1.1	Cycle of humanitarian and socio-economic training	7	7	14
1.2	Cycle of natural and scientific training	6	2	8
1.3	Cycle of professional and practical training	9	10	19
2	Variable courses			
2.1.	Elective courses of the university	7	8	15
2.2.	Courses of the students' choice	1	1	2
	sum	30	28	58

The unreasonable breadth of interpretation of the training content is preserved in the curricula of the following years. This state continues to be determined by objective and subjective reasons:
- lack of an educational standard of higher education;
- absence of a formed scientific school and educational tradition of training specialists toward documentation and information activity for the activities of institutions.

A high content of redundant (duplicate) and non-profile courses continues to be characteristic of all sections of the 2008 curriculum for students' admission. This is evidenced by the curriculum of basic higher education in DSIA for the bachelor's level, approved by the Scientific and Methodological Council of the LPNU (Table 3).

Table 3
Profile of educational courses, included in the curriculum in DSIA for the bachelor's level (according to the curriculum of 2008 entering year)

	Type of course	Number of courses		
		Profile	Non-profile, Redundant	sum
1.	Compulsory courses			
1.1.	Cycle of humanitarian and socio-economic training	8	7	15
1.2.	Cycle of natural and scientific training	11	5	16
1.3.	Cycle of professional and practical training	12	10	22
2.	Variable courses			
2.1.	Elective courses of the university			
2.2.	Cycle of humanitarian and socio-economic training	-	2	2
2.3.	Cycle of natural and scientific training	2	1	3
2.4.	Cycle of professional and practical training	9	6	15
2.5.	Courses of the student's choice	3		3
	sum	45	31	76

The imbalance in the thematic structure of courses is exacerbated by the emergence of new non-profile courses: "Problems of innovative development and technology transfer", "Cultural Studies". The volumes of the courses: "Foreign language", "Business foreign language", "Second business foreign

language", "Second foreign language (Latin)" have significantly increased, which gained 1 part each and were taught additionally for 1 semester more.

Despite the indicated "problems of growth", during the educational work on the training of young specialists toward DSIA, the scientific and pedagogical staff of the LPNU actively include in the content of training educational components that correspond to the trends in the development of information and analytical, computer, social communication sciences, as well as considering the global experience of training LIS specialists.

The generalized object of activity of specialists of a broad profile who could work in institutions of all areas and forms of ownership, in state administration bodies of all levels, were:

- technological processes of documenting management activities;
- preservation of documentation;
- provision of document circulation;
- analytical and synthetic processing of information and its use.

The training content was formed by two main, closely related components:

- documentary activity, which studied the document as a source of information;
- information activity, which studied information technologies and computer equipment, information services, Internet technologies, information systems, and databases.

The sectoral breadth of professional activity in various spheres of managerial activity is evidenced by the National Classification of Professions of Ukraine DK 003:2010 (until then - DK 003:2005), according to which a specialist trained at the LPNU can hold the following positions:

- technical specialists toward management (secretaries of administrative bodies, court secretaries, executors, and administrators);
- assistant managers of enterprises, institutions and organizations; assistant managers of production and other main divisions; assistant managers of small enterprises;
- organizers of record keeping (state institutions, types of economic activity, judicial system [32].

The practical professional activity of a specialist in document science and information activities in primary positions is determined by the ability to perform the following functions:

- implement general functions that ensure coordination of internal management activities between the manager and the enterprise, institution, or organization;
- make operational decisions within the limits of their competencies;
- provide functional and informational preparation for decision-making;
- select and process information for the manager;
- prepare special documentation: organizational, administrative, commercial;
- perform analytical and synthetic processing of documents;
- organize and regulate the manager's activities;
- organize document flow;
- produce and manage information using automated document and information systems.

The basis of the training model for specialists in document studies and information activity is the acquisition by the graduate of fundamental knowledge as an information analyst, manager of information and analysis, assistant analyst, and technologist of automated processing of data flows [33].

A qualified specialist trained in the DSIA direction is able to perform a wide range of professional activities with documents, from their creation and standardization to the development and maintenance of various automated systems for the analytical and synthetic processing of documents. Toward information activities, he could be an information manager, assistant analyst, and developer of databases of scientific and business information [31]. Graduates of the LPNU have knowledge of the organization and analysis of information, and technologies of its processing, and are familiar with the features of the main analytical services, genres, and types of analytical products and services. They are ready to work with information resources, search in databases, and the Internet [30].

Since 2004, after receiving a bachelor's qualification, students have educational prospects to continue their studies toward DSIA at the specialist's level. In the activity of a real firm, which organizes a clear internal division of labor and builds a technological chain, a graduate of Lviv Polytechnic finds his application in the chain of search, analytical processing of information, and creation of new information products.

The training of specialists toward DSIA at the Lviv Polytechnic at the Department of History, Theory and Practice of Culture has several positive aspects.

The scientific, educational, and practical characteristics of the specialty determine, develop, and approve it in the professional space as an integrated type of labor activity that organically combines documentary science with information and computer technologies.

The authority of the Lviv Polytechnic National University in the market of providing educational services, in the labor market, and the high quality of training of young specialists toward DSIA led to consistently high numbers of entrants to study. From 2000 to 2010, the Lviv Polytechnic trained about 1,000 specialists of the bachelor's and specialist's levels who obtained higher education on a permanent and part-time basis (Fig. 2).
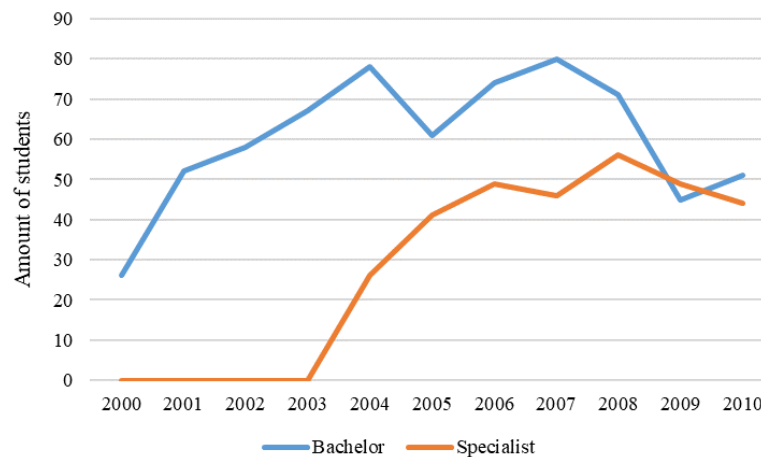
Figure 2: Number of entrants toward DSIA on bachelor's, specialist's level (2000-2010)

The spheres of employment of LPNU graduates are diverse. Stakeholders are organizations, institutions, state-owned and private firms of a wide variety of areas, state authorities and local governments, institutions of science, education, culture, and health care [34]. Such universality of the employment profile is based on the specifics of the content of training in DSIA.

The experience of training specialists and their employment has proven that the segment on the labor market related to documentation, information and analytical support of management activities in the business sphere is needed in the social distribution of labor and has prospects for development. The social importance of studying in a specialty can also be seen in the students' acquisition of competencies that would open the prospects of professional and social adaptation to the diverse, new needs of the labor market for graduates.

At the same time, difficulties were inherent in the training of specialists toward DSIA at the Department of History, Theory and Practice of Culture, which were both at national and university levels:

- lack of industry standard of higher education in the specialty;
- weak coordination of educational activities between graduate departments of domestic and foreign universities;
- insufficient organizational support for the formation of a scientific school and an educational concept for the training of specialists because of the lack of a specialized department at the LPNU.

4.3. Modernization of the training content in the ILAS specialty (2011-2018)

In 2011, LPNU established the specialized graduate Department of Social Communications and Information Activities (SCIA). The department offered training for specialists in DSIA at the bachelor's and specialist's levels until 2014, and at the master's level from 2013. The licensing of educational services for master's level training in DSIA at LPNU in 2012 significantly boosted the department's educational activities. However, after obtaining the master's level license, the training of specialists was discontinued.

From 2011 to 2018, the actualization of the training content toward DSIA was the core of the organization of the educational process. The scale of transformations of the educational activity of the SCIA department allows us to affirm the implementation of the educational program of the DSIA as a single idea - an educational concept, which we will call "Education and practice toward Digital Humanities".

The main idea of the concept "Education and practice toward Digital Humanities" is the modernization of the training content toward the preparation of DSIA for students to gain theoretical knowledge and practical skills regarding the effective application of modern information and communication technologies in traditionally humanitarian socio-cultural spheres of public life.

The proposed concept of specialist training is embodied in several normative documents of the LPNU – educational and professional programs, curricula, and work curricula. They provide for the active study of modern information technologies during the training of future computer scientists, analysts, librarians, and archivists. The program results of the study make the graduates of the department active players in the modernization of the functions of information institutions, libraries, and archives, which are currently experiencing a significant crisis because of the de-actualization of some of their traditional functions. Possession of information, information-analytical, and socio-communication technologies makes young specialists leaders of humanitarian, social, and business institutions in the global information space. Informatics provides a modern impetus to institutions for institutional use by society.

Prospects for the development and improvement of the educational process toward preparing DSIA under the educational concept "Education and practice toward Digital Humanities" provided for the following main tasks:

- to update the training content in correlation with the real practical needs of the business sphere of social life;
- to update and introduce modern, creative courses related to computer, information, and social communication technologies into the curriculum;
- to give qualifying bachelor theses a pragmatic character, to implement them as real projects of informatization of the activities of institutions;
- to organize the educational and scientific work of students as an individual trajectory of the formation of a specialist based on the study of compulsory and elective courses.

In 2016, the normative consolidation of the specialty 029 "Information, Library, and Archival Science" of the subject area 02 "Culture and art" contributed to the objectification of the objects of the subject area: the activities of libraries, archives, documentation, and information structures of institutions that ensure the creation, distribution, accumulation, storage, archiving, access to information and knowledge in any formats. The subject area also includes the study of theories, processes, technologies, and standards that contribute to the formation, maintenance, and use of information resources of institutions.

Modernization of the training of specialists in the specialty "Information, Library, and Archive Science" (ILAS) required the further development of methodological bases that will allow updating the content of training, synchronizing it with the development of modern digital technologies. Adherence to such educational trends increases the quality and competitiveness of young professionals and brings the content and quality of education closer to world standards.

A comparison of the composition of the courses included in the initial plans for the 2008 and 2018 entry years shows the implementation of the concept of the educational program. We record the lowest level of transitional courses from the previous curricula in the cycle of general training, which, of course, is connected with the need to study humanitarian and social courses that form the worldview competencies of young professionals. The figures eloquently testify to the scale of the fundamental transformation of the training content: of the 76 courses that were in the 2008 curriculum, only 24 remained in the 2018 curriculum, and the rest were removed.

Thus, implementing the educational concept of "Education toward the practice of Digital Humanities", the SCIA department introduced 45 new academic courses (64%), updated and updated 25 transitional courses: "Design of databases", "Applied computer technologies", "Technologies of competitive information intelligence", "Technologies of the layout of information materials",

"Organization of exhibition activities", "Social and communication technologies", "Information management" (Fig. 3).
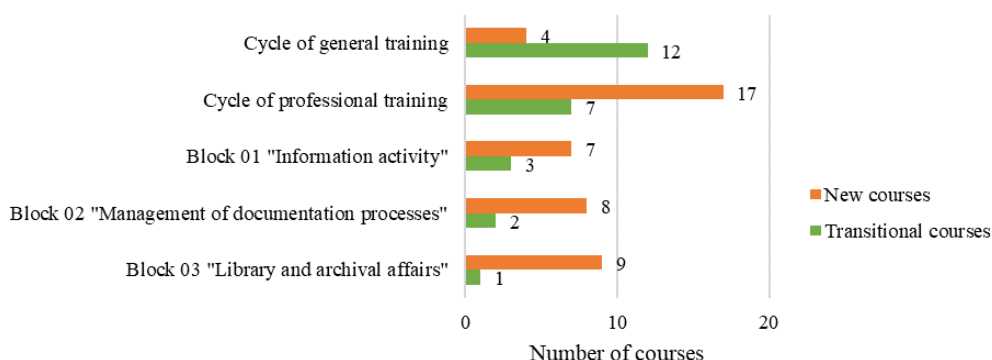

Figure 3: Dynamics of updating courses in ILAS specialty for the bachelor's level (curriculum for the 2018 entry year)

The number of coursework has significantly increased - from 8 courses, including: "Office computer networks", "Database management systems", "Modern software", "Social and communication technologies", "Information search technologies", " Information management", and "Documentology".

Considerable attention is paid to implementing the personal educational trajectories of students in terms of the formation of specializations that students can choose. There are three blocks within which professional courses of specializations of the student's choice are grouped: "Information activities", "Management of documentation processes", and "Library and archival activity". It is significant that the SCIA department offers students to study mostly new courses in the elective blocks, especially in the "Library and Archive Affairs" block. Among them are the following courses: "Marketing of information products and services", "Web design", "Development of specialized sites", "Organization of a PR campaign", "Modeling of social information exchange", "Technologies of electronic libraries and archives", "Library management and archival institutions". Students describe practical projects in coursework, which is provided in each of the elective blocks.

Innovative, creative approaches, which the SCIA department implements both in terms of the content of training in the ILAS specialty and in terms of the forms and methods of training. The wide use of computer technology in the educational process ensured the LPNU's competitive position in accepting applicants not only from the west of Ukraine but also from other regions of Ukraine. The creation of the image of the SCIA department, which provides modern and competitive training for students at the bachelor's level, determined the positive dynamics of recruitment to study in the ILAS specialty (Fig. 4).
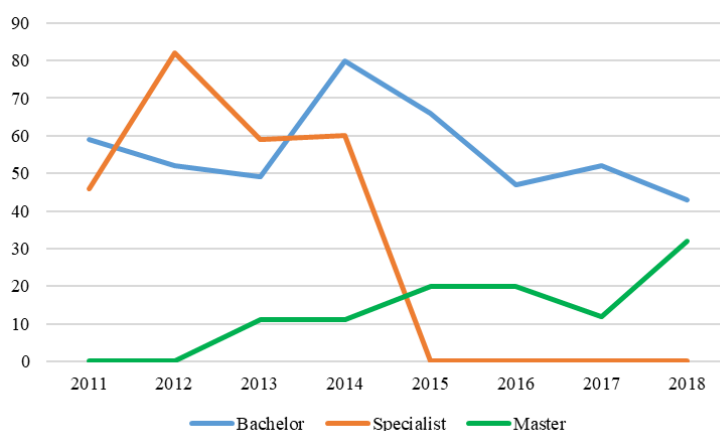
Figure 4: Number of entrants on the ILAS specialty at bachelor's, specialist's, master's levels (2011-2018)

In 2011-2018, over 800 students received bachelor's, specialist's, and master's levels in ILAS. Possession of information, information-analytical, and socio-communication technologies makes graduates qualified leaders of humanitarian, social, and business institutions in the global information space.

4.4. Training of higher education applicants under the educational program "Social Communications and Information Activities" (2019-2023)

A significant step towards improving the quality of educational activity is the adoption of higher education standards in the ILAS specialty, which determines the state requirements for the education of students and state guarantees regarding their achievement. Normative provision of educational activity in the specialty of ILAS is carried out by the Standards of Higher Education of Ukraine, the development of which is entrusted to the Scientific and Methodological Commission for Culture and Art (sub-commission "Information, Library and Archive Affairs") of the higher education sector of the Scientific and Methodological Council of the Ministry of Education and Science of Ukraine. In the course of 2018-2021, the system of standards of higher education in Ukraine was created and put into effect, specialty 029 "Information, library and archival science", subject area 02 "Culture and art" for the first (bachelor's), second (master's) and third (educational and scientific) levels. The standards aim to meet the modern needs and requirements of the market of educational services and the labor market.

Essential components of the development of the national standard for the specialty of ILAS are the formation of a single conceptual and problematic subject area of documentary support of business activity using advanced network technology. The concept of standards is based on a competency-based approach, which provides students with the acquisition of a system of interrelated competencies and the achievement of program results based on them - knowledge, skills, communication, and business qualities. The competencies system determines the modern training content. The system of competencies dynamically combines knowledge, abilities, skills, ways of thinking, views, values, and other personal qualities, which form a person's ability to conduct professional and further educational activities [35].

The standards of higher education in the ILAS specialty have gained the status of national normative acts thanks to professional communication and close cooperation between the scientific, educational, and professional communities. It embodied this in the interaction of leading organizations, educational institutions, scientific centers and communities in the ILAS specialty. A wide range of scientists and practitioners are involved in the development, discussion, and scientific examination: scientific and pedagogical staff of graduate departments of higher education institutions of Ukraine, members of the Ukrainian Association of Documentary Experts, the Union of Archivists of Ukraine, and the Ukrainian Library Association. The standard is considered by the Federation of Employers of Ukraine and the Ministry of Culture of Ukraine.

The standards for the ILAS specialty are based on philosophical principles, on the competent approach to determining the requirements for a specialist, which is the basis of the Bologna Process and the International Project of the European Commission "Harmonization of Educational Structures in Europe" [35].

The adoption of national standards of higher education in the ILAS specialty, as well as the involvement of many Ukrainian universities in the training of ILAS specialists, created prerequisites for the development of specialization in educational programs.

The need to introduce a new educational program "Social Communications and Information Activities" at the LPNU based on the ILAS specialty is based on the understanding of the relevance, social importance, and demand for young professionals who possess social communication and information technologies. The labor market's need for such specialists is determined by the universal nature of the use of modern information technologies in all spheres of social life.

The purpose of introducing the educational program "Social Communications and Information Activities" is to increase the competitiveness of LPNU in the market of educational services of Ukraine and to increase the satisfaction of the educational needs of students of LPNU in the labor market.

The reasoning behind introducing the new educational program "Social Communications and Information Activities" is based on the basic results of the SCIA department's activities:

1. The educational and research work of the SCIA department in previous years goes beyond the issues of library and archival affairs, even considering the processes of informatization of these specific spheres of social life. In order to train highly qualified specialists in the ILAS specialty, the SCIA department implements the concept of "Education and practice toward Digital Humanities" based on the educational and professional program in the ILAS specialty. It is characterized by a distinct emphasis on teaching social, communication, and informational courses. Educational courses cover the entire spectrum of the life cycle of information - technologies for creating, collecting, receiving, storing, using, and distributing information in society.

2. The scientific and personnel potential of the SCIA department, educational-methodical and material-technical support, are focused on training specialists in social communications and information activities. Scientific research of the department at the level of doctoral and candidate theses of teachers, at the level of master's and bachelor's qualifications, and coursework of students is directly related to the development of information and communication technologies, with the formation, positioning, and identification of information in social environments of the Internet. The department has significant achievements in scientific work on information and communication technologies. The department's computer laboratories are equipped with licensed software aimed at implementing educational programs.

3. The innovative approach of the SCIA department to the training of specialists considers the trends in the development of information and communication processes, the actualization of communication interaction in the global information space, the growth of social importance, and the potential resources of the virtual environment for searching, saving, presenting and processing information.

4. The validity and relevance of the social, communication and informational approach to interpreting the content of studies in the specialty "Information, library and archival affairs" are evidenced by the results of admission campaigns throughout the entire period of activity of the SCIA department. LPNU has strong admission rates for this specialty in conditions of high competition in the market of educational services.

5. The state of the educational services market among applicants shows that career guidance priorities are based on an understanding of the relevance and social importance of social communications and information activities. It is determined by the universal nature of the use of modern communication and information technologies to meet information needs in all spheres of social life.

In Ukraine, specialty 029 ILAS is licensed for 49 universities and their 17 branches [36]. A wide range of universities makes it possible to cover all applicants for studies in the documentation and information specialty. The localization of universities that train specialists in the ILAS specialty indicates that professional training is conducted in all regions of Ukraine (Fig. 5).

LPNU is in competition: in the western region of Ukraine with 18 universities in Ivano-Frankivsk, Mukachevo, Ostroh, Rivne, Ternopil, Chernivtsi, and Dubno. In Lviv alone, 5 universities work with students of higher education in the ILAS specialty: LPNU, Lviv National Academy of Arts, Lviv National University named after I. Franka, Ukrainian Academy of Printing, Lviv Faculty of Kyiv National University of Culture and Arts.

The number of universities that train specialists in the specialty of ILAS actualizes the competitiveness of the quality of education. High-quality training is interpreted according to a fairly wide range of criteria: content of training, use of computer equipment and licensed software, material and technical conditions, personnel support, and social infrastructure. Focusing the educational process on the educational program "Social Communications and Information Activities" helps to increase the quality and ensure the student-centeredness of the educational activities of the SCIA department, and active use of the potential of DH.

The content of the educational program "Social Communications and Information Activity" is formed by a system of competencies that are a combination of personal abilities gained during training - theoretical knowledge, practical skills, experience, and values that can be comprehensively and synergistically implemented in practical activities. Competencies and learning outcomes that describe the educational achievements of students under the educational program provide an opportunity to comprehensively implement the main goal of the concept of learning content: young professionals must

be able to effectively use and develop modern information and communication technologies in traditionally humanitarian socio-cultural spheres of public life.
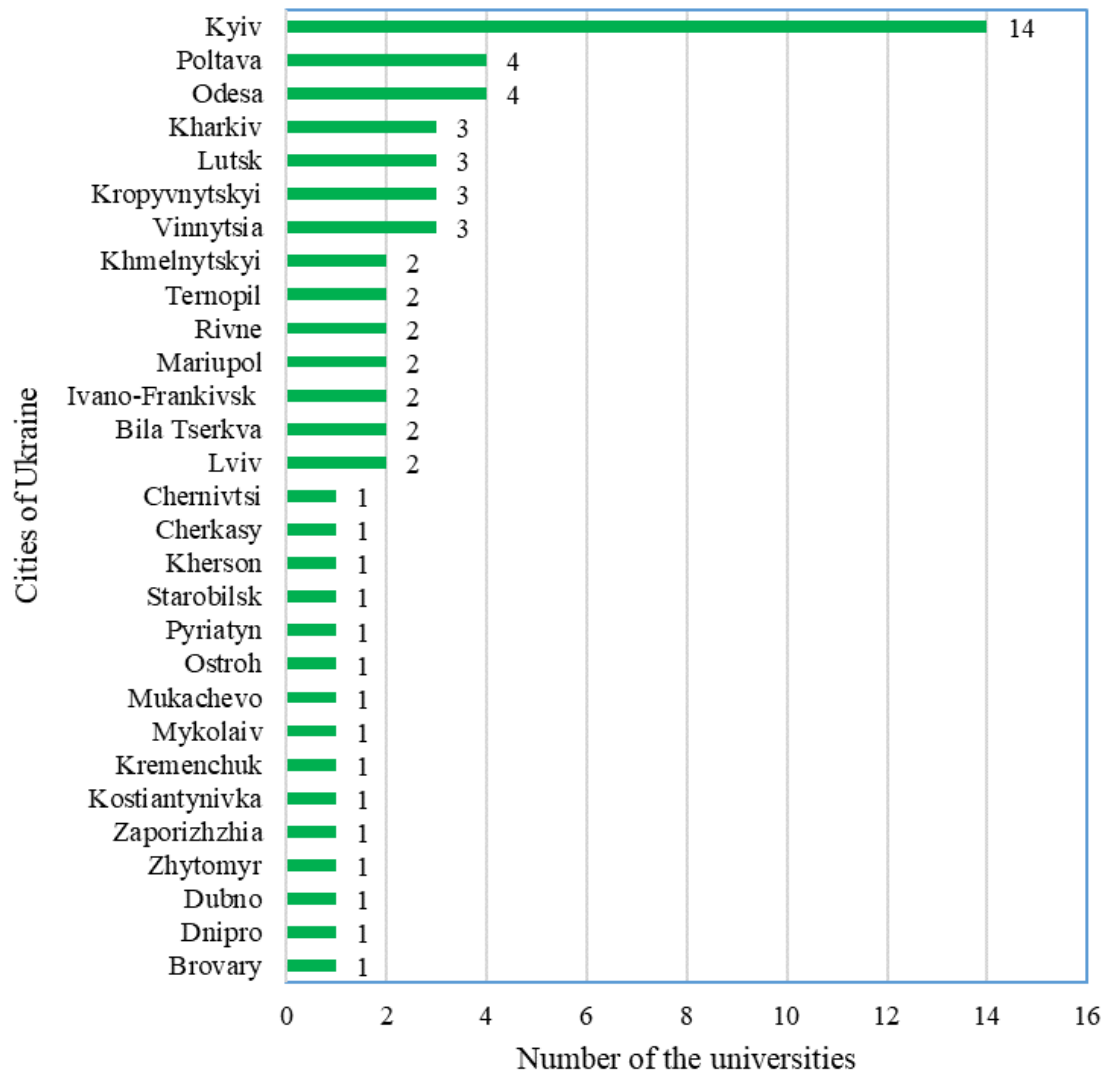
Figure 5: Localization of universities licensed for the ILAS specialty

The system of general and special competencies forms a didactic and informational space for choosing the components of the educational program that ensure the training of qualified young personnel. The logical connections and sequence of the components of the educational program - academic courses, coursework, practice, and writing a bachelor's qualification thesis - reflect the structural and logical scheme. The scheme shows a logical and consistent distribution of academic courses by semesters, which provides for the precedence of academic courses, and mastery of the tools of which is necessary for understanding all subsequent courses [37].

The bachelor's level is described by integral competencies, which, as the main competencies characteristic, determines the ability to solve complex specialized tasks and practical problems in the Information, Library, and Archive Science specialty. Young specialists gain the ability to comprehensively apply special technologies and methods.

We interpret general competencies as universal, characteristic of specialists in various subject areas, and important for the success of their further professional, social activities, and personal development.

Considering the dominant characteristics of the semantic structure of general competencies, we differentiate them into 3 segments: cognitive, communication, and axiological. The general competencies of students are formed by 10 compulsory worldviews, linguistic, and socio-legal courses,

in particular "Terminology of information affairs", "Philosophy", "Political science", and "Civic values in the information society".

Special (professional) competencies are the essence of professional training in the ILAS specialty. They reflect not only the didactic interpretation of the complex theoretical knowledge and practical skills important for successful professional activity in the specialty today but also the vision of the development trends of the subject area in the future. The dominant characteristics of the semantic structure of special competencies allow us to distinguish 3 segments: information-analytical, information-technological, and social-communication competencies.

The differentiation of special competencies also determines the balanced courses of information-technological, information-analytical, and social-communication topics in the educational program.

Special informational and analytical competencies of students are formed by compulsory courses on documentation support of management activities (3 courses), courses on analytical and synthetic processing of information (3), and courses on analytical activities of libraries and archives (3), among them "Methodology and practice of record keeping ", "Innovative activity of libraries and archives", "Technologies of information search", "Technologies of competitive information intelligence", "Analytics of digital scientific services".

Special information and technological competencies of students are formed by compulsory courses in information and computer technologies (3 courses), courses in information support of management activities (4), and courses in innovative activities (3), among them "Modern software", " Information Engineering", "Applied Informatics", "Corporate Computer Networks and Services", "Computer Information Processing Technologies", "Information Management", "E-Government Services", "Database Design", "Organization and support of start-ups".

Special social and communication competencies of students are formed by compulsory courses in social and communication technologies (2 courses), courses in document communications (1), and courses in information hygiene (1), among them "Social networks", "Modelling of business communication", "Organization of exhibition work", "Social and communication technologies".

Elective academic courses are grouped into 3 blocks: information activity, socio-communication activity, informatization of library, and archival activity. Each block has its own thematic direction of courses: information-analytical, information-technological, and social-communication courses. We highlight the same direction among the compulsory courses.

The key task of the quality of the educational process is to ensure the harmony of the declared competencies and their corresponding educational courses. Their balance makes it possible to achieve the learning outcomes envisaged by the educational program through the formation of knowledge, skills, communication, and business qualities of young professionals.

We interpret the balance of the educational program as a system of proportional temporal and thematic distribution of competencies and educational courses, interconnected according to the structural-logical scheme. To assess the balance of the educational program, we define the following criteria:

- multifaceted general and special competencies and their optimal correlation with courses;
- the optimality of the ratio of quantitative and qualitative indicators of the distribution of educational courses by years of study;
- the optimality of the ratio of quantitative and qualitative indicators of the distribution of educational courses by thematic direction.

The structure of competencies reproduces a generalized, simplified image of the content of training under the educational program "Social Communications and Information Activities". The structuring of competencies attests to a harmonious and multifaceted direction, an optimal ratio of courses within the limits of implementing certain competencies. Thematic groups of courses summarize the content of the complex theoretical knowledge and practical skills that students gain during their studies. They testify to the relevance, completeness, systematicity, and balance of the educational program (Fig. 6).

The analysis of quantitative and qualitative indicators of the distribution of compulsory courses by years of study shows their optimal ratio. Predominantly, general courses that shape mentality, worldview, and critical thinking are taught in elementary courses (Table 4).
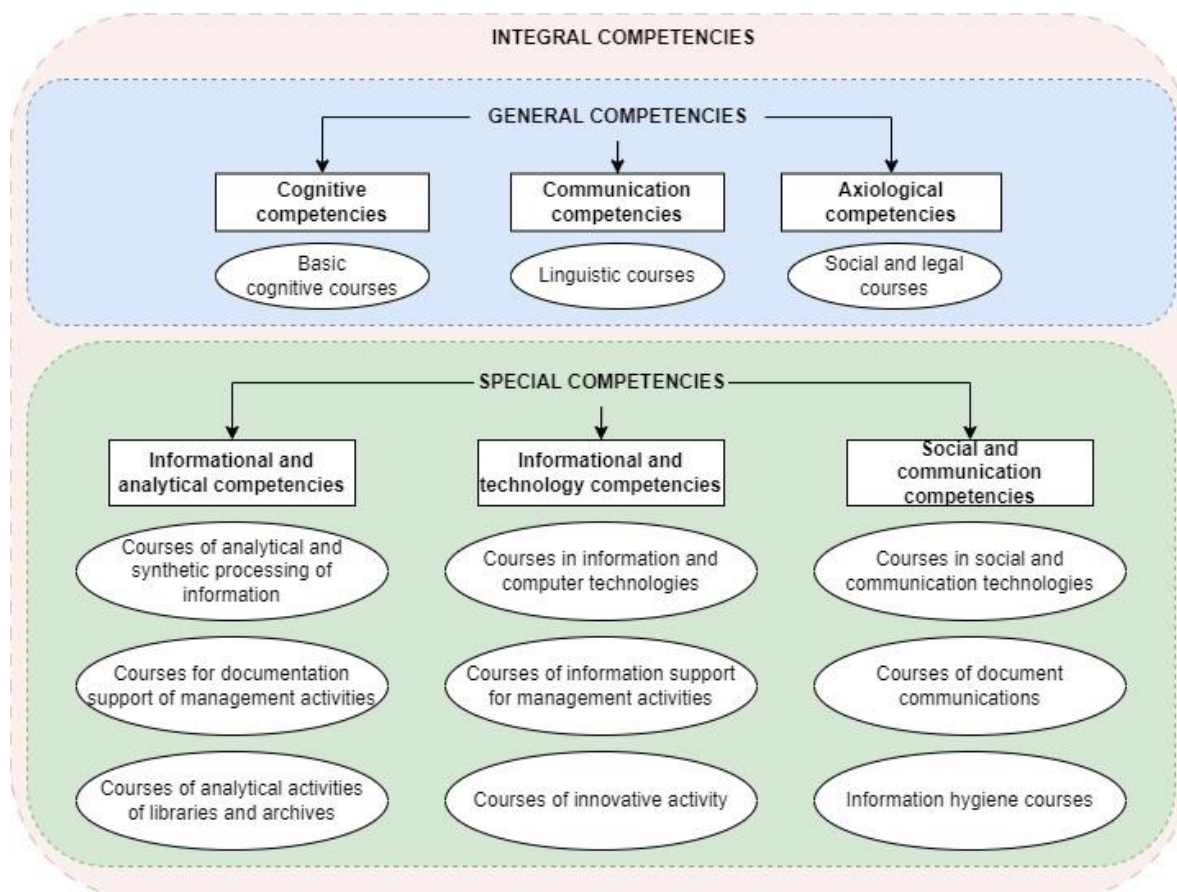
Figure 6: Balanced structure of competencies and their ratio with courses at the bachelor's level of ILAS

Table 4
Balance of compulsory academic courses by years of study

Competencies		Number of courses (by years of study)				Number of courses
		1	2	3	4	
General competencies	Cognitive competencies		1		1	2
	Communication competencies	4	1			5
	Axiological competencies	1	1		1	3
Special competencies	Informational and analytical competencies	2	3	2	2	9
	Informational and technology competencies	2	4	1	3	10
	Social and communication competencies	3	1			4

The analysis of the quantitative and qualitative indicators of the distribution of compulsory academic courses by thematic direction shows an almost equal representation of courses from all thematic groups. Minor fluctuations in quantitative indicators are because of the relevance and importance of courses for the formation of the professional profile of young specialists. The courses of information-analytical and information-technological subjects, which provide students with basic professional knowledge and skills, are most fully represented (Table 5).

Table 5
Balance of compulsory academic courses by thematic direction

| Competencies		Thematic direction of courses	Number of courses
General competencies	Cognitive competencies	Worldview courses	3
	Communication competencies	Linguistic courses	5
	Axiological competencies	Social and legal courses	2
Special competencies	Informational and analytical competencies	Analytical and synthetic processing of information	3
		Documentary support of management activities	3
		Analytical activities of libraries and archives	3
	Informational and technology competencies	Information and computer technologies	3
		Information support of management activities	4
		Innovative activity	3
	Social and communication competencies	Social and communication technologies	2
		Documentary communications	1
		Information hygiene	1

The analysis of the quantitative and qualitative indicators of the distribution of the elective academic courses by thematic direction shows the presence in the blocks of all thematic groups defined for compulsory courses. However, the dominant positions are occupied by the thematic group according to the specialization profile (Table 6).

Table 6
Direction of professional courses in blocks of the student's choice

Blocks of courses at the student's choice	Special competencies	Number of courses
Information activity	Informational and analytical competencies	1
	Informational and technology competencies	5
	Social and communication competencies	4
Social communication activity	Informational and analytical competencies	2
	Informational and technology competencies	3
	Social and communication competencies	5
Informatization of library and archival activities	Informational and analytical competencies	2
	Informational and technology competencies	5
	Social and communication competencies	3

Under the specifics of the "Social Communications and Information Activities" educational program, changes have been made to the curriculum for the courses of general and professional training: the renewability of the courses is 74% (according to a comparison of data from the 2018 and 2022 entry year curricula). The direction of blocks of professional courses of specializations of the student's choice has undergone changes and specifications toward information and socio-communication technologies: "Information activity", "Socio-communication activity", "Informatization of library and archival activity". The renewal rate of courses in the elective block devoted to library and archival work is almost 60% (Fig. 7)
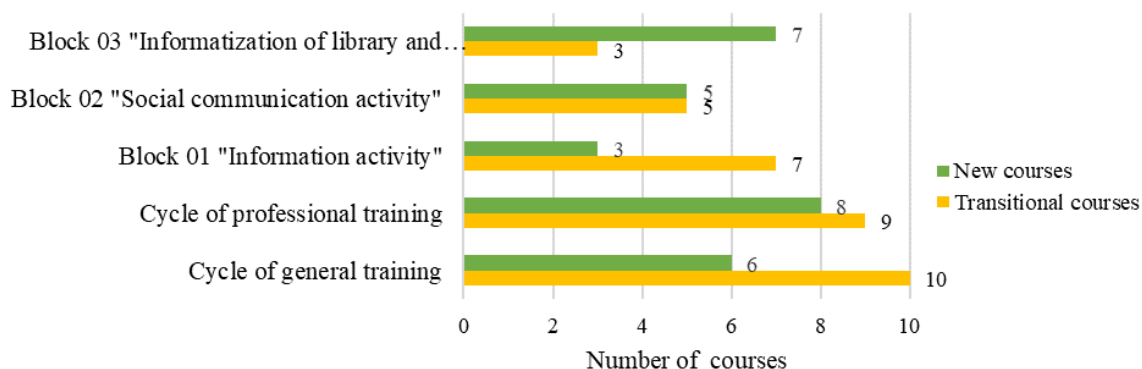
Figure 7: The dynamics of updating courses in the curriculum for the 2022 entry year in the specialty ILAS for the bachelor's level

Orientation of the training content on the study of digital technologies finds its embodiment in various directions of educational and scientific activity of the SCIA department.

Orientation to practical activity is a feature of student training. Approbation of acquired theoretical knowledge during practical training of students is an important component of the educational process. The ILAS educational program provides practical training at several levels:

- laboratory (practical) work for each of the courses of the curriculum;
- coursework from 5 compulsory courses: "Corporate computer networks and services", "Applied computer technologies", "Modern software", "Social and communication technologies", "Information search technologies", as well as from one of the courses chosen by the student: "Social communications on the Internet", "Electronic document management", "Management of library and archival institutions";
- practice on the topics of bachelor's qualification papers and performing these papers.

Students gain special competencies in all areas – information-analytical, information-technological, social-communication – by using technologies and tools such as:

- operating environment: Windows; Linux;
- web technologies: HTML, PHP;
- databases: MySQL, Microsoft SQL Server;
- tools for working with graphics: Adobe Photoshop, Adobe Illustrator; SketchUp;
- content management systems: Drupal, Wordpress, Joomla;
- Alfresco electronic document management system;
- programming languages: Pascal, Basic;
- Office 365 cloud service.

An important component of the specialists' training by the ILAS educational program is the passing of practice on the topics of bachelor's qualification works, which are the prerequisites for the attestation of graduates. Students choose practice bases independently or on the department's recommendation according to long-term cooperation agreements with employers. Practice on the topics of bachelor's qualification works takes place directly in state authorities and local self-government bodies, IT companies, large and small business enterprises, libraries, archives, museums, institutions of the social sphere (health care, education and science, social security), Armed Forces of Ukraine, law enforcement agencies (Ministry of Internal Affairs, Security Service of Ukraine, courts, prosecutor's office, advocacy).

Practicing in real institutions involves researching the information and documentation support of their activities and developing projects for their implementation. Thorough theoretical and practical training opens the possibility of employment in the most diverse areas of the real economy in such positions as information analyst, IT specialist, SMM manager, web community administrator, content manager, blogger, streamer, PR manager, HR manager, category manager, development manager, business analyst, web designer, website developer, copywriter, library and archive manager, administrator of the electronic document management system, document expert in the services of the state administration.

The knowledge and practical skills gained during training allow graduates of the department to realize their creative potential, express their civic position, and realize themselves as creative individuals in social networks.

Using innovative methods in educational work is part of the system of characteristics of the quality of education and therefore is at the center of attention of the SCIA department. In the educational process, the department uses the method of interdisciplinary integration to perform integrated laboratory work. It aims to improve the quality of assimilation of theoretical knowledge and acquisition of practical skills by students by performing a full cycle of searching, saving, and presenting information about a single block of materials using the method of parallel, subsequent (previous) courses. Thus, 4 courses from the educational program "Social Communications and Information Activities" were chosen to perform interdisciplinary integrated laboratory work. The modules of the interdisciplinary project reflect the complete life cycle of the formation of a secondary document through search, content analysis, and analytical-synthetic processing of primary information, its systematization, formatting, and presentation under the norms of citation and academic integrity. To successfully perform this work, students actively use the publications of the department's teachers [38]. A number of indicators of improving the quality characteristics of educational work confirm the innovative value of performing interdisciplinary integrated laboratory work in the educational process:

- change in students' perception of academic courses as discrete educational components;
- development of a single package of educational materials through the practical application of knowledge and skills gained during the study of parallel or subsequent courses that connect logical connections;
- visualizing the totality of the processes of searching, processing, and saving information as a single technological cycle of bringing information to consumers;
- formation of a systematic approach to the study of academic courses in students [39].

Completing the tasks of integrated laboratory work provides an opportunity to form and develop information and analytical skills and social and communication skills of students, to involve them in scientific work [40].

The focus of educational work on the study of digital technologies ensures significant progress in the training of specialists in the ILAS specialty at the LPNU (Fig. 8).
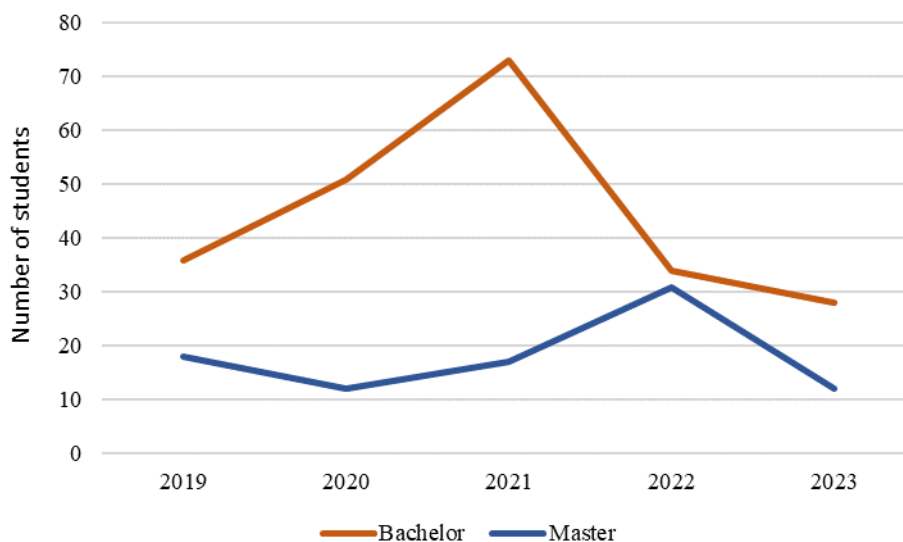
Figure 8: The number of entrants in the ILAS specialty at the bachelor's and master's level (2019-2022)

Technologies of DH are an important direction for scientific research of the teachers of the SCIA department. The staff of the department organizes the international workshop "Social Communication and Information Activity in Digital Humanities" (SCIA), the materials of which are indexed in the Scopus database of scientific citations. This paves the way for the establishment and development of international scientific cooperation, and the use of best practices of scientific cooperation [41].

The progress of the SCIA department in implementing the hybrid concept "Education and practice toward digital humanization" is certainly based on the strong support and cooperation of the professional community of Ukraine, headed by the Scientific and Methodological Commission for Culture and Art (the subcommittee "Information, Library and Archival Science") of the sector of higher education of the Scientific and Methodological Council of the Ministry of Education and Science of Ukraine.

5. Discussion

In the era of information technologies, the ILAS specialty has crossed frontier lines that leave behind its interpretation as a humanitarian area. Digitization of a document at all stages of its life cycle marks the entry of library and archive work into the area of DH. The need to develop a new strategy for the development of the ILAS specialty is because of the following reasons:
- the need to improve the quality and competitiveness of young professionals;
- the need to increase the prestige of the ILAS specialty;
- the need to bring the content and quality of education closer to world standards.

The strategic directions of the development of the ILAS specialty toward DH include:
- development of promising methodological bases that will allow updating the training content, synchronizing it with the development of modern digital technologies;
- establishment of professional communication between scientific and educational and professional communities of foreign universities;
- implementation of international scientific and educational projects;
- establishment of academic mobility of teachers and students, in particular, attracting foreigners to study at the LPNU;
- implementation of the best world experience in educational and scientific work.

The future self-realization of graduates of the ILAS specialty is toward updating the training content, forming an up-to-date system of competencies depending on global trends in the industry's development. The status of a constant has the need to constantly develop and update already accumulated experience:
- educational and educational-methodical work on the development of normative documentation for the provision of educational services;
- organizational and practical work to ensure the educational process of training highly qualified and competitive specialists in the conditions of the global spread of information technologies;
- scientific work in information technology support and management of social communications in the global information space.

An organic combination of traditional and innovative interpretations of the training content in universities is a condition for the successful promotion of specialties in the market of educational services in Ukraine. An interesting experience of training young specialists in social communications has been accumulated at the Department of Journalism and Ukrainian Philology (JUP) of the Classical Private University in Zaporizhzhia. The modern ethical demand for the transparency of science, technology, business, state administration, and civil society has actualized the demand for "speaker-spokesperson" specialists. JUP department ensures the formation of professional competencies of speakers by teaching a complex of educational components: "Speech writing", "Branding", "Diction and orthography", "Art of public communication", "Modern PR technologies", "Social advertising and PR", "Editorial skill". Considering the high demand among target audiences for specialized information, JUP department widely practices the teaching of academic courses that highlight the peculiarities of journalistic creativity in sectoral aspects: "Local Journalism", "Environmental Journalism", "Media Communications in Sports", "Media and Sports", " Mass media and politics", "Media safety", "Media and gender", "Children's journalism". Responding to the urgent requirements of wartime, the course "Volunteer Media" was introduced into the curriculum. Adherence to creative, creative approaches to the formation of the training content significantly expands the circle of applicants for obtaining a bachelor's, master's, or PhD. The hybrid nature of program competencies and learning outcomes forms a unique focus of the educational program and expands the need to implement the principles of DH.

6. Conclusions

The training of a modern specialist in DH is determined by objective processes of fundamental modernization of the activities of institutions in the document and information sphere. Providing remote access to information resources and using local networks when working with databases and other information resources (electronic publications, electronic catalogs) is a challenge and a need for modern society. Implementing network information technologies creates scientific and technical prerequisites for including information and analytical centers, libraries, and archives in the global information space. Their role as scientific, information-analytical, and educational centers is growing, which provides an opportunity to quickly and fully use information resources, to conduct information searches using information technologies, systems, and networks, to enter the world scientific and educational space.

The training of ILAS specialists at the LPNU is adapted to the modern needs of the formation of a new generation of personnel in the subject area of information activities, promotes the penetration of digital technologies into the management, socio-economic and humanitarian spheres of society, strengthens the Ukrainian information market. The training of highly qualified specialists of the bachelor's level of education in the specialty of ILAS has undergone a long evolutionary path from a culture-centric interpretation of the training content to a hybrid concept of "Education and practice toward digital humanization", which is based on the requirements of national standards of Ukraine. This transformation of the training content is ensured by:

- a system of program competencies and student learning outcomes that form a conceptual model of the abilities of future specialists;
- a system of educational courses, which is the embodiment of the practical implementation of this conceptual model and a means of acquiring theoretical knowledge and practical skills in the specialty of ILAS.

Focusing the training content on mastering the theory and practice of information-analytical, information-technological, and social-communication activities ensures the formation of a modern specialist who can apply the technologies of DH in the work of business, authorities, and management. The concept of "Education and practice toward Digital Humanities" involves the use of modern information and educational technologies for the training of future computer scientists, analysts, librarians, and archivists. To ensure the efficient operation of institutions, graduates:

- create creative textual, graphic and video content, a website, develop an Internet project and promote it;
- use modern computer and information technologies;
- manage human resources
- determine business strategies in social networks;
- use Internet technologies to achieve financial success;
- define strategies for the digital transformation of services.

Modernization of the training of specialists by specialty allows for updating the training content, synchronizing it with the development of modern digital technologies, improving the quality of training and competitiveness of young specialists, and bringing the content and quality of education closer to global standards. This contributes to the positioning of the LPNU as a leader in educational activities in the subject area of social communication and information activities, the harmonization of the educational and scientific direction of the Department of Education and Science, and meets the current requirements of the labor market. Evolutionary changes in the training content for training specialists in the ILAS specialty at the LPNU correspond to the main trends in the world's leading universities.

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