THE MODEL OF DIGITAL LITERACY AND THE STRUCTURE OF DIGITAL COMPETENCE OF UNIVERSITY STUDENTS OF THE LINGUISTIC DIRECTION

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Abstract

In this study, the digital literacy of students of linguistic areas is associated with the development of their professional and functional literacy. The purpose of this study is to develop a conceptual model of digital literacy of the university students of linguistic direction.

The objectives of the research are to analyze the content of scientific literature sources in the field of digital competence and to clarify the structure, levels and their content in the formulation of digital competence of university students of linguistic direction.

The research methodology is based on a competence-based approach to the organization of the content of training and the development of ICT competence of students of the linguistic direction. The conducted research has shown that the concept and the term "digital competence" are not enough researched in relation to the ICT training of students of the linguistic direction. The study offers a clarification of the concept of "digital competence" in comparison with the term "information and communication competence", and also describes the levels of formation of digital competence. Each level is presented in a meaningful way, and didactic forms of assessment of the formation of each level of digital competence are indicated. The levels are combined in the structure of digital literacy and are presented in the form of a conceptual model of digital literacy of university students of the linguistic direction. This research took place over a period of five years. During the experimental part of the study, students of linguistic direction of 4 universities and 8 teachers took part.

The results of the study allowed us to give a theoretical justification for the ICT training of students of linguistic areas regarding the organization of competence-oriented content. The features of the content of digital literacy in relation to the professional and career interests of students were identified. The obtained data allowed us to develop a theoretical model of digital literacy of students of linguistic areas, to determine the structure and content of ICT competence, as well as its relationship with the development of flexible skills.

The conclusions of the study consist of theoretical and practical recommendations for the implementation of ICT training for students of linguistic areas. The main components in the structure of the development of digital literacy in practical educational and professional activities were identified in the course and result of this study. The pedagogical method of case technology, content analysis of pragmatic, professional and scientific discourse, the organization of a personal educational environment in the information space and the acquisition of flexible skills based on the development of digital literacy of students were used.

In conclusion, it should be noted that the development of digital literacy and ICT training are interrelated processes: without a certain level of digital literacy the rational development and use of digital competences cannot be implemented, while only using ICT competence a higher level of digital and functional literacy may be developed, as this process is associated with acquisition activity and personal experience.

Keywords: Digital literacy, flexible skills, ICT competence, functional literacy, competence approach.

1 INTRODUCTION

The ability of a person to successful engage in a particular practical activity is designated by such categories as «literacy», «qualification», «competence», «education». Each of these categories is now

used both in practice and in theoretical research, representing the facets of this ability. The key among them is literacy, since it consists of knowledge, skills and abilities that consist in the ability to operate with the sign systems of artificial and natural languages when perceiving and performing tasks; this is the ability of a modern person to act in accordance with the objective logic of the surrounding objective world and achieve their goals [1]. The concept of literacy both in our country and abroad developed in accordance with the needs of society, production-from the simplest skills (reading, writing, counting) up to the possession of a minimum of socially necessary knowledge and skills (functional literacy) [2]. In this regard, derivative terms began to appear, such as «library and bibliographic literacy», «economic literacy», «information literacy», «computer literacy», «digital literacy», «legal literacy».

The importance of digital information skills requires the continuous development of digital literacy among the citizens of the modern world [3]. So, digital literacy is a fairly important education of the individual, it has an impact on all areas of human life and professional activity. But what does this concept include in the modern world? All researchers say that it is impossible to identify ordinary literacy and digital literacy. Digital literacy allows a person who has it to be intellectually mobile, to interact with people in a way that a person who only has traditional literacy cannot do [4]. For the first time, the concept of "digital literacy" was introduced by Paul Gilster in 1997, who considered it as the ability to perceive information provided in a wide range of sources and in a variety of different formats, to use it with the help of computers. According to P. Gilster, currently working on the Internet with hypertext, which offers the ability to quickly move from one resource to another, contributes to the emergence of new patterns of behavior, changing the way a person acts when communicating. There is a network thinking, the main characteristic of which can be called a high degree of information and communication activity.

The skills of effective use of information technologies are also called digital competencies. These include the search for information in a variety of sources, the use of digital devices and the functionality of social networks, purchases on the Internet, making financial transactions using technology, the production of media content, device synchronization, and critical perception of information. Digital security refers to the basics of network security within the framework of digital literacy, which include the protection of personal data, the formation of strong passwords, access only to legal content, network etiquette, reputation in the network, the creation of backup copies of information, storage.

In this study, the digital literacy of students of linguistic areas is associated with the development of their professional and functional literacy. The purpose of this research is to develop a conceptual model of digital literacy of students of the linguistic direction of the university. The objectives of the research are to analyze the content of sources of scientific literature in the field of digital competence and to clarify the structure, levels and their content in the formation of digital competence of students of higher educational institutions of the linguistic direction.

2 METHODOLOGY

Digital literacy contains the following components: computer literacy, information literacy, communication literacy, media literacy and technological innovation literacy. The most important and common digital competencies for all students (regardless of the level of knowledge of information and computer technologies) are such skills as the creation of information (content), communication exchange in a local or global network, access to information, critical assessment of the truth of the information found, management, support of information and computer technologies, the use of the Web environment for any of the spheres of human activity (study, recreation, work) [5, 6]. Each of these skills is associated with professional competencies, which allows us to conclude that digital literacy is in demand in the same way as traditional literacy (reading, writing, math skills, social behavior management). We suggest using the following definition: digital literacy - knowledge, skills and motivation in the development, safe and effective use and application of digital information and resources. Digital literacy involves the acquisition of knowledge, consolidation, development and effective use of skills and abilities. Consider the levels in the structure of digital literacy: 1) cognitive level; 2) activity level; 3) motivational level.

The cognitive component of the digital literacy structure is characterized by a system of applied knowledge that is the core of digital literacy. The activity component contains skills, skills for effective implementation of basic operations of independent work with digital resources, as well as ways of planning and solving tasks using digital data and resources [7]. The focus on creating a conscious

human need for competent use of the digital environment characterizes the motivational component of digital literacy [8].

In the concept of "digital literacy" there are six main skills:

- to find the necessary information on the Internet and be able to assess its reliability and quality;
- to analyse the problem and select the digital tools that will be able to find a solution;
- to continuously learn throughout your life, using the availability of information;
- to evaluate the constantly changing technological tools and choose the most suitable ones for solving a particular problem;
- to learning and adapting to work successfully with constantly updated digital tools;
- to solve the problem, combine with each other and customize a variety of technological tools.

Accordingly to the current level of use of technology, as well as favorable conditions for the development of a literate society, we believe that digital literacy of young people needs to be improved. The complexity of the modern information world is that the availability of technology and the ability to search for the right information do not provide students with the skills necessary for a successful existence in a digital society. Confident students who use technology often overestimate their skills. The formation and development of digital literacy should provide students with skills that are not only necessary, but also in demand [9]. The use of digital educational resources can become an effective tool for teaching, educating and developing students and preparing them for life in a digital society. Specially designed programs and activities for children and adolescents on the formation and development of digital literacy are necessary. Digital literacy is an essential skill, which in the twenty-first century is no less necessary for success than the ability to think critically, as well as the ability to solve problems, cooperate and communicate with each other [10]. A person with digital literacy can select the information he needs from the huge data streams on the Internet, he understands how the virtual world works, and is able to be safe in a digital environment. Digital literacy of a university student is a personal education of a subject that includes the following components: a system of knowledge, skills and abilities in the use of digital resources and digital information, positive motivation for digital activity, positive experience in the network; allowing you to find, evaluate, use, distribute and create content using modern information technologies. The recommended inclusion of digital literacy programs in the university education of linguists will allow students to consciously choose relevant information from a large stream, understand how the virtual world works, and not put themselves in danger in a digital environment [12, 13].

The research methodology in our study is based on the competence-based approach to the organization of the teaching content and the development of the ICT competence of students of the linguistic direction. The conducted research has shown that the concept and the term «digital competence» are insufficiently studied in relation to the ICT training of students of the linguistic direction. The study offers a clarification of the concept of «digital competence» in comparison with the term «information and communication competence», and also describes the levels of formation of digital competence. Each level is presented in a meaningful way, and didactic forms of assessment of the formation of each level of digital competence are indicated. The levels are combined in the structure of digital literacy and are presented in the form of a conceptual model of digital literacy of students of higher educational institutions of the linguistic direction. This study was conducted over a period of five years. The experimental part of the study was attended by students of the linguistic direction of 4 universities and 8 teachers.

In addition to the general universal competencies that any modern person should possess, a student of the linguistic direction should be able to use information technologies in their professional activities. For the formation of such competencies and their development, the courses «Information Processes in Linguistics», «Information Technologies in Translation Practice», «Information Technologies in Pedagogical Activity» were used in our study.

The basic and main discipline that forms the digital literacy of future bachelors of linguistics in our study is the discipline «Information Processes in Linguistics». When studying the discipline «Information processes in linguistics» by students of linguistic specialties, the work program provides for the study of 5 topics:

1 Information and communication technologies in linguistics.

2 Organization of linguistic research in the context of the use of information and communication technologies.

3 Software linguistic tools.

4 Computer testing.

5 Remote technologies.

Classes are held in the form of lectures and laboratory and practical work. Lectures are devoted to the theoretical part of the course and cover issues related to the concept and features of the process of digitalization of education, the use of ICT in the cognitive activity of students, the many functions of ICT in the educational process, ICT in the implementation of various learning models, software and pedagogical tools, control systems and simulators, the mission and features of distance education in the context of digitalization of education, and so on. All lectures are accompanied by computer presentations, active teaching methods are used: conversations, examples and analysis of practical situations related to the introduction of ICT tools in the educational process, student reports with their subsequent discussion. In the laboratory and practical classes, students' activities are aimed at mastering effective techniques and methods of practical application of ICT. On the first topic, practical work is not provided, but as an independent work, students consider the goals and objectives of using information and communication technologies in linguistics and prepare reports, get acquainted with technologies designed to facilitate the study of foreign languages – dictionaries, simulators, textbooks, as well as with translators, programs that are designed to facilitate the performance of everyday work duties related to managerial and linguistic professional activities.

The topic «Software linguistic tools» is the most voluminous and interesting to study, since it covers the entire range of computer programs and technologies used in teaching. Presentations for lectures, multimedia programs, electronic textbooks, simulators – this is not a complete list of those pedagogical software tools that can be used in a foreign language. Students compare ready-made software products, determine their place in the process of linguistic research, and learn to conduct an examination of electronic learning resources.

As a laboratory workshop, it is proposed to develop its own software tool for educational purposes, dedicated to the process of learning foreign languages. During the term, students complete a project-elements of an educational and methodological complex, including electronic textbooks, tests, presentations, etc. The topic of development can be suggested by the teacher, or it can be chosen by the student based on his scientific and educational preferences, but in any case it should be related to linguistic education. The success of using the new generation of teaching tools in educational institutions is largely determined by their capabilities, content and, most importantly, the availability of methodological documentation.

The aim of the students' digital literacy development is realized via the content of its components, outlined above (computer literacy, information literacy, communication literacy, media and technological innovation literacy).

The objectives in the process of the students' digital literacy development are:

1 Using the means of searching and selecting information on the Internet.

2 Analysis of ready-made electronic textbooks.

3 Development of a project of one's own linguistic research.

4 Development of educational and methodological documentation on the use of research results and creation of a project presentation.

The main stages of the development of electronic means for linguistic purposes include:

1 Analysis of the technical and software tools available at the university;

2 Analysis of the content of linguistic professional activity, identification of those sections and topics in the study of which it is permissible to use ICT, where the use of ICT significantly increases the level of visibility, uses the ability to simulate activities or automates the control process (especially when studying complex sections and topics), improves the quality and efficiency of the linguist.

3 Study and analysis of the best practices in the field of ICT technologies.

4 Formation of the structure, composition and content of electronic means of linguistic purpose.

5 Accounting and verification of the implementation of a set of special requirements for the developed electronic means of educational purposes, for example, psychological and pedagogical, technical, ergonomic, aesthetic requirements, requirements for documentation.

6 Scenario development. The functions of the software tool and the student-user during the use of the electronic tool for linguistic purposes are considered.

7 The actual stage of creating electronic means of linguistic purpose, the choice of ICT (tool systems, shells, educational platforms) that allow you to implement your plans. Creation of electronic linguistic tools and their debugging. A desirable display for more experienced colleagues who have experience with ICT in the classroom.

8 Development of a methodology for the use of an electronic tool for linguistic purposes in the chosen field of linguistic research, writing an abstract for its use, which specifies the purpose of the application, the forms of conducting classes with its use.

9 Analysis and adjustment of scenarios and programs in accordance with comments and implementation results.

10 Preparation of methodological documentation for practical use.

Next, students move on to the topic «Computer testing», study the features of computer tests compared to paper tests, and develop a test for their software tool using a test shell. When studying the topic "Distance technologies". The mission, goals, target priorities of this type of education, the model of developing the company's information strategy and the simulation model of forming and implementing distance education in this model are considered. Considering that, remote technologies are the interaction of users with each other at a distance, reflecting all the components inherent in the educational process (goals, content, methods, organizational forms, digital means of interaction), information technologies in remote digital communication are the leading means.

One of the main tasks of education today is to make the learning process interesting, dynamic and modern. The use of modern technologies – information and communication, multimedia and interactive – contributes to the achievement of this goal. Interactivity (in the context of an information system) is the ability of an information and communication system to respond differently to any user actions in active mode. IT is a prerequisite for the functioning of a highly effective learning model, the main goal of which is the active involvement of each of the students in the educational and research processes. The use of the latest technologies in training increases the visibility, facilitates the perception of the material. This has a positive effect on the motivation of students and the overall effectiveness of the educational process.

At the end of work on the project, it is publicly defended using presentation tools, which allows you to further motivate students to perform high-quality work, since the development will be evaluated not only by the teacher, but also by classmates. In addition, the skills of public speaking with the use of presentations are further improved, which is important for the future linguist. In contrast to educational and research activities, the main result of which is the achievement of the truth, the work on the project is aimed at a comprehensive and systematic study of the problem and involves obtaining a practical result – an educational product.

Thus, the study of the discipline «Information Processes in Linguistics» prepares future Bachelors of Linguistics to use ICT at all stages of the design of the educational process, in which the use of electronic means for educational purposes will take a crucial place in providing clarity, improving the means of linguistic research and current control of the level of development of computer literacy.

3 RESULTS

The results of the study allowed us to give a theoretical justification for the ICT training of students of linguistic areas in terms of the organization of competence-oriented content. The features of the content of digital literacy in relation to the professional and career interests of students are revealed. The obtained data allowed us to develop a theoretical model of digital literacy of students of linguistic areas, to determine the structure and content of ICT competence, as well as its relationship with the development of flexible skills

Digital literacy contributes to successful learning: learners gain easier access to information as the volume of digital storage databases grows, making it easier to access than working with traditional, paper-based learning resources. A component of digital literacy is also the management information

provided to students and used by them in private life when they join online communities and work with various networks. On the other hand, integrated and evaluative information becomes part of the skills learned by students when the teacher acts as an expert in evaluating information, showing students the differences between reliable and useless digital resources.

The structure of digital competence includes four components: knowledge; skills and abilities; motivation; responsibility (including, among other things, security). Each of the components can be implemented in different areas of activity on the Internet (working with content, communication, techno sphere, consumption) to varying degrees. Accordingly, four types of digital competence were identified:

- information and media competence – knowledge, skills, motivation and responsibility related to the search, understanding, organization, archiving of digital information and its critical understanding, as well as the creation of information objects using digital resources (text, visual, audio and video);
- communication competence – knowledge, skills, motivation and responsibility required for various forms of communication (e-mail, chats, blogs, forums, social networks, etc.) and for various purposes;
- technical competence – knowledge, skills, motivation and responsibility to effectively and safely use technical and software tools for solving various problems, including the use of computer networks, cloud services, etc.;
- consumer competence – knowledge, skills, motivation and responsibility, allows us to solve with the help of digital devices and the Internet a variety of everyday tasks related to specific situations, involving the satisfaction of different needs.

The constant presence on the Internet, in the field of hypertext, which makes it possible to quickly navigate from one resource to another, forms new patterns of human behavior, methods of searching for information, and features of communication. This leads to the formation of network thinking, the main feature of which is a high degree of information and communication activity. In the structure of the model of digital literacy (Fig. 1) the social and communicative aspects of human activity is emphasized.

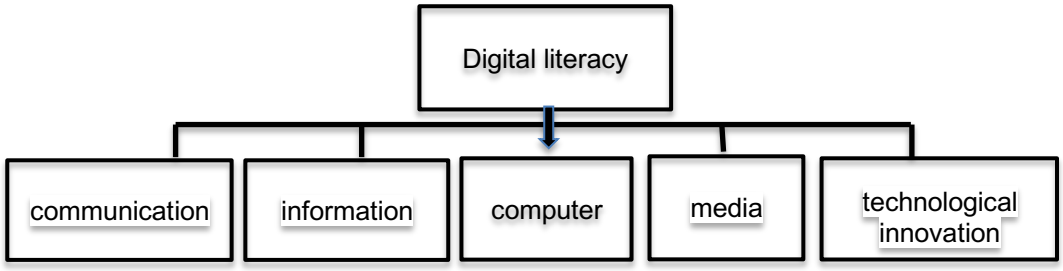

Fig. 1 – The Model of Digital Literacy of the student

Digitalization of education involves the use of mobile and Internet technologies by students, expanding the horizons of their knowledge, making them limitless. The productive use of digital technologies, the inclusion of students in independent search, selection of information, participation in project activities forms their flexible skills. An important role in this process is the use of the student's personal educational environment in the information space of the university. In our study, we used the advantages of such an educational environment, which includes educational resources, interactive learning technologies, electronic textbooks, online e-learning courses on various platforms, and their own digital profiles in the electronic information space of the university.

In our study, we identify the following skills as criteria for achieving digital literacy of students of the linguistic direction:

- media literacy;
- skills in finding the necessary information and tools for working with it, the ability to quickly master these tools (information literacy);
- communication skills with other users (communication competence);
- skills in the production of information in its various forms and formats (creative competence);

- skills of working with computer linguistics (computer literacy).

4 CONCLUSIONS

Today, there are three main areas of digital literacy: universal literacy – familiarity with basic tools (such as office productivity software, image processing, cloud applications and content, and tools for creating web content); creative literacy – covers all aspects of the previous model, adding more complex technical skills (video production, audio production, animation, programming); literacy by discipline: spread across different disciplines in different ways that are appropriate for each learning context, such as business courses that focus on computer-based human interaction. Higher education institutions should prepare students for a future in which learning new digital tools becomes an intuitive process. Digital literacy will become a mandatory skill in the workplace, and all students will need a high degree of digital literacy to get a job, keep it and earn a promotion. Digital literacy is promoted by various skills. In addition to technical skills, it brings with it a number of so-called "soft" skills that are becoming increasingly important in the workplace. In fact, training in interpersonal communication skills becomes a priority. Other soft skills include: creativity, persuasion, collaboration, adaptability, time management. There are also the necessary complex "hard" skills: cloud computing, artificial intelligence, analytical reasoning, people management, UX design.

The development of digital literacy in combination with the chosen profession can help employees and candidates for the position, as it develops the "hard" and "soft" skills that are required by the employer. Digital literacy is a direct path to becoming a competitive candidate in today's labor market.

In the course and as a result of this study, the main components in the structure of digital literacy development in the practical educational and professional activities of university students of the linguistic direction were identified.

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