Tools for Electronic Language Pedagogy in the Training System of a Future Primary School Teacher

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Abstract

The article clarifies the fact that the creation and use of new software for information and communication technologies in order to improve the speech quality of education is actual. After the analysis and synthesis of scientific and methodological ideas, the genesis of electronic language pedagogy (ELP) was determined as a science, and the main components of its tools were also determined. The subject of the research is the didactic conditions of the use of electronic tools in the language pedagogical training of a future primary school teacher. The aim of the article is to reveal the peculiarities of the use of electronic language pedagogy as an effective innovative scientific and methodological approach in the training of a future primary school teacher. The theoretical and methodological basis of the study is the classical and modern heritage of world and national pedagogy and research on the problems of educational informatization. The following complex of research methods has been applied: theoretical analysis and synthesis of literary sources, electronic publications, computer and network resources of educational purpose, systematic analysis of the essence of ELP, components of its tools, methods of expert assessments, questionnaires, interviews (190 people took part in them) in the process of identifying priority directions of electronic tools' implementation in professional training, a method of observing the educational process of training a future primary school teacher in the course of work with electronic learning tools. The authors have proved that the main resource components of e-language pedagogy are various means of communication (chats, forums, e-mail, blogs), educational, scientific, informational, reference materials, personal sites of lecturers, electronic textbooks, electronic educational-methodical complexes. Therefore, according to the conducted observations, the use of components of electronic language pedagogy stimulates students' interest in mastering their specialty, helps them to understand professional issues and to realize themselves in the educational process.

Keywords: Electronic language pedagogy, primary school teacher, electronic educational-methodical complex, e-portfolio, teacher certification.

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Introduction

Today, the educational situation in Ukraine is characterized by changes in all spheres of social life, which are caused by the dynamic development of information technologies. State policy focus on creating an effective educational space, strengthening the requirements for the professional training of future primary school teachers actualizes the transition of the theory and practice of teaching the Ukrainian language to a new technological level related to electronic language pedagogy. This science is based on the achievement of traditional language pedagogy by performing specific e-learning / teaching tasks, creating and effectively implementing computer-based learning tools and Information and Communication technologies into the future specialist's training system (the experiment has been carried out for the last 2 years, 2017-19 academic year).

Practice proves that in modern conditions it is expedient to consider e-learning as a constant source of information. New communicative environment that enables productive organization of different types of learning activities of school students / university students, encourages participants of the educational process to creativity through the developmental potential of electronic tools (a set of methodological and technical techniques, operations in the form of various documents (working materials) aimed at obtaining information with a powerful didactic resource for the study of professional disciplines and the Ukrainian language in particular.

The implementation of the key reform of the Ministry of Education and Science of Ukraine – the concept of "New Ukrainian School" – aims to create the school that will give students not only knowledge but also the ability to apply it. Therefore, among the 10 key competences that students need to acquire when studying various subjects at all stages of education, there is an information-digital competence that "involves confident and at the same time critical use of information and communication technologies (ICT) to create, search, process, share information at work, in public space, and in private communication. It also includes information and media literacy, programming basics, algorithmic thinking, database management, Internet security, and cybersecurity. This concept consists of understanding the Ethics of Working with Information (Copyright, Intellectual Property, etc.)" (Hreb & Hrona, 2019). For this reason, a prospective primary school teacher should be at the forefront of social change, able to independently create a variety of projects, adapted software versions, consult on computer competencies, etc.

In the context of modern requirements, there is a qualitative mastery of linguistic knowledge in the short term in connection with the optimization of the educational space by increasing the volume and speed of assimilation of information, variability of content, techniques, and teaching aids. The main areas of improvement of modern learning / teaching are reliance on communicative activity, competence approaches, which are embodied at all stages of learning the material: familiarization, training, application, control, creative approach of subjects to the definition of content, principles, teaching methods that ensure achievement of the intended purpose by using modern (electronic) learning tools as a basic component.

The theoretical analysis and synthesis of literary sources, electronic publications, computer and network resources of educational purpose, systematic analysis of the essence of EL, its constituent instruments, survey in the process of identifying priority directions of electronic tools' implementation in the process of priority directions' identification of electronic tools' introduction; the method of observing the educational process of training a future primary school teacher in the

course of working with electronic learning tools were used to achieve the stated aim and to solve the set tasks. Here are the questions for the diagnostic survey:

1. Rate your computer technology proficiency on a 5-point scale (evaluate each level from 1 to 5 points): work with the file system, work with a text editor, creating presentations, performing calculations using a spreadsheet, processing a graphic image, installing the necessary software, working with e-mail, working with the Internet, working on professional online networks, creating a website, blogging.

2.How does the use of eLinguistics' tools affect the participants in the educational process?

3.Determine the optimal percentage of study time for acquiring and studying the Ukrainian language material using computer technologies: up to 30%, from 30 to 60%, over 60%.

4. What are the factors that cause teachers / students to use e-learning in the educational process?

5. What are the most commonly used e-learning tools in the educational process?

6. What public resources do you use to increase your language level?

7. Do teachers / students at your school develop their own electronic products for studying Ukrainian?

8. What new web resource should you create to study Ukrainian?

A survey of teachers, students (190 people) showed that 33.7% indicated a positive attitude towards the introduction of electronic tools in the educational process, 10.5% – did not see any improvement in the learning of language material with the use of a new tool and did not support the idea of its design, choosing the answer "maybe" (55.8%), they said that they theoretically allow the improvement of the training quality but they need perfect tools, clear methodological recommendations. The majority of respondents believe that learning a language material will have a much higher efficiency if electronic tools are used. It will allow activating visual perception of the material, developing spatial imagination, modernizing methods and forms of teaching. Therefore, the study of the selected problem is relevant.

The feasibility of the study is also determined because of the need to resolve the contradictions between the traditional notion of ways of teaching a language in higher education and the demands of modern society, which can be satisfied by the optimal combination of traditional methods' resources and ICT; the presence of a powerful educational potential of information resources, a well-developed theoretical base on the problem of the electronic technologies use in education and the lack of information culture of its application; activation of ways and means of enriching the professional and pedagogical competence of a teacher / lecturer in the use of information and communication technologies, determining the prospects of educational interaction (electronic, network) of the educational process' subjects in order to be dynamic, innovative in the preparation of future primary school teachers.

The aim of the article is to reveal the peculiarities of the use of tools of electronic language pedagogy as cybersecurity innovative scientific and methodological approach in the preparation of a future primary school teacher.

To achieve this goal, the following **tasks** were set:

• to represent the concept of "electronic language pedagogy", its tools;

• to describe an integrated system of e-language pedagogical approaches in the context of professional training;

• substantiate and illustrate the possibilities of effective implementation of electronic tools in the context of modern requirements of training a competitive specialist.

Literature Review

In the works by V. Bader, Zh. Gorina, K. Klimova, T. Kotik, A. Nadolynska, A. Nikitina, S. Omelchuk, N. Semeniv, L. Struganets, some aspects of the issue are represented. These authors cover some theoretical and practical issues regarding the creation and use of electronic learning tools (a commonly used term substitute for ICT) in the future specialist's training system. O. Bigich, A. Bogomolov, Y. Bulakhova, A. Gartsov, L. Gorodnycha, L. Mors'ka, E. Polat, O. Rudenko-Morgun, and N. Talizina focused on psychological-pedagogical, ergonomic, didactic features of electronic instruments, ways to implement it in the process of specialists' training. A detailed analysis of the problem gives an opportunity to reveal various aspects related to the impact of such tools on the training of a future specialist. Thus, the scientists determine the location and typology of electronic learning resources, offer different classifications of computer training materials, determine the criteria for assessment the quality of training programs, conditions for effective integration of computer technology in the educational process, develop conceptual provisions for the use of information technologies in language learning.

In general, the analysis of didactics' works shows that in professional publications the issues of electronic language pedagogy (e-language pedagogy) as an innovative scientific and methodical direction, language pedagogical capabilities of computer lexicography, features of computer tests in the system of control of educational achievements of native speakers are identified, creation of an e-learning book, methodologically substantiated system of work with the ICT use in the process of speech development of primary school students, etc. are carried out.

The intensive development of new communication forms in the information technology environment led to the emergence of a new direction in linguistics – computer language pedagogy (Bovtenko, 2005; Gartsov, 2009). The researches by modern scientists on the activation of educational and cognitive activity of students with the use of computer technologies are productive, the use of tools and applications of computer technologies in the educational process (Gartsov,2009), creation of computer support at the Ukrainian language lessons in educational institutions (Bovtenko, 2005; Kucheruk, 2011). However, the problem of electronic language pedagogical tools in the preparation of a future primary school teacher, in particular, the volume, ways of presenting didactic, illustrative material, developing the methodology of using the electronic textbook in organizing students' independent work is not well researched up to now.

From the viewpoint of exceptional relevance, it becomes necessary to study and adjust the criteria for selecting different components of the toolkit as an innovative didactic tool in order to achieve productive development of professional skills. Despite the interest of scientists in this issue, the theory of the problem is insufficiently developed, and in the practice of a future specialist's training, such resources are not used completely.

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Methods

The complex of research methods was applied to achieve the defined goal and the solution of the set tasks: theoretical analysis and synthesis of literary sources, electronic publications, computer and network resources of educational purpose, systematic analysis of the essence of ELP, its components, methods of assessments, questionnaires (190 persons) in the process of identifying priority areas for the introduction of electronic tools in professional training, a method of observing the educational process of a future primary school teacher's training during the work with electronic learning tools. The research is based on the works reflecting the methodology and methods of scientific research in the field of pedagogy, theory of vocational education, pedagogical diagnostics theory, researches in the field of professional training technologies, psychological approaches to the disclosure of reflection's essence, procedurally-effective approach to the presentation of the process of competences' formation and diagnosis, electronic data accumulation and storage capabilities. The basis for determining effective language learning using ELP was the method of measuring attitude toward the computer, in particular, the means of ELP – a modified set of 4 Woodrow scales: scales of computer examination, questionnaires for the usefulness of computers, scales of attitude to computers and scales of computer measurements. Analyzing the Eysenck's model of personality, we found out how the use of ELP affects the psychological state of students, which suggested that a positive attitude to such learning may be a function of increasing professional competence. The criteria analysis of computer Internet addiction of students (information-value, emotional-motivational, operational-practical) made it possible to identify and characterize the levels of its formation (low, medium, high) and stages of computer addiction formation in students and to find out how it affects the educational process in higher education institutions. The coefficients of students' motivation for information and cognitive activity were determined according to the methods developed on the basis of the tests-questionnaires. The problematic situations that are considered in the process of finding answers to the questionnaire items lead to the actualization of various needs. On the basis of these needs, the individual assesses the significance and difficulty of the task, time and effort, projected estimates of personal qualities' development. A detailed analysis of the factors of "Attitude Motivation" and "Achievement Motivation" made it possible to find out the motivational aspect of obtaining professional knowledge by means of ELP. Generalizing foreign and domestic experience in the development of assessment criteria for electronic publications, we were guided by the criteria for the assessment of their quality: structural and functional system (each standardized element of the course on the form of its content presentation, i.e. compliance with a certain template), content assessment (content should correspond to scientific and technological progress), methodological expertise (didactic assessment of e-learning editions and assessment of teaching methods for their use).

Discussion

Representation of the concept of "electronic language pedagogy", tools

Experience has shown that among the professional and pedagogical skills, the teacher's ability to participate in the research, creation, and implementation of systems of intensive computerized language learning in the educational process deserves special attention. This set of skills can be formed as a result of learning the didactic foundations of effective language teaching using information and communication technologies – electronic *language pedagogy*. The essence of this concept is related to the development of methodology, the search for effective ways of learning

in conditions that correspond to perspective scientific knowledge and positive pedagogical experience. It is a system of tasks, approaches, principles, methods, content components, tools, forms, intended for innovative solution of language pedagogical tasks – mastering students' defined competencies at the required level, in optimal terms with the help of information and communication resources.

This approach is due to the new organization of the educational process, where a teacher / lecturer has ceased to be the main source of knowledge for a student. The combination of teacher-textbook-student has been transformed into a triad of student – educational tools – student, reflecting the importance of the student's motives and tasks, the variety of channels and learning means where the Internet plays an important role.

E-language pedagogy as a field of language teaching has emerged as a result of technical innovations in the educational process, which is justified by the increase in the effectiveness of teaching by transferring certain functions of the teacher to the machines. The first electronic computing machine, invented by D. Eckert and D. Mouchley in 1946, pioneered the development of many fields of science, education, and computer language pedagogy, in particular. Computer language training in foreign practice intensified with the advent of the first laptops (1977) and gradually evolved into a separate, specific theoretical and practical field, which built its methodology of language teaching using a computer. The first computer programs that appeared in the 1960s and 1970s were designed to perform grammatical and lexical language exercises. Subsequently, in the 1970s with the justification and implementation of communicatively oriented language teaching techniques into the language pedagogical practice, developers began to pay attention to the content side of the programs. This has influenced the development of a new theoretical and applied field, the term Computer Assisted Language Learning (CALL), which since 1984 has been used as a standard by the scientific community in the specialized journal "System" the subject of which is devoted to the problems of computer language learning. In domestic scientific thought from the beginning of 21st century the term "computer language pedagogy" was introduced by K. Piotrovs'ka (1991).

Electronic language pedagogy is now actively developing. However, current interpretations of the outlined concept are quite heterogeneous. There are different views in the scientific literature regarding its definition, such as: "any use of computer technology in the field of language learning" (Levy, 2013; Hubbard, 2009); "Any process involving a student and a computer that results in the increase of the student's language level" (Beatty, 2010); "the field that studies the theory and practice of using computers (electronic tools) in language learning" (Bovtenko, 2005; Gartsov, 2009); "A fundamentally new and independent field of language teaching that involves the improvement of hardware and software, the development and writing of computer language programs" (Kostikova, 2007).

Positively evaluating each of these definitions, we use the following in our work: electronic language pedagogy is a field of methodology of language teaching that finds patterns, the main components of the content and organization of language acquisition process and formation of communicative and speech competence in students using electronic (digital) tools that impart the process of language teaching with interactivity, multimedia, hypermedia, mobility, multifunctionality, variability, accessibility (including remote).

ELP uses productive methods that reveal an active source of knowledge, language, skills, competencies (language analysis, exercises, work with texts – monologue, dialogue, polylogue,

virtual excursion, etc.); correct the degree and nature of students' participation in language learning (autonomy, the ability to individually select and determine the amount of material needed to solve a given learning task, the use of electronic learning tools that compensate for the lack of contact with the teacher); stimulate and motivate learning activities by deferred or immediate control (cognitive games, quizzes, problem-solving tasks using multiple-choice techniques, comparison, matching or sequencing, constructing).

The main resources of electronic linguistics are various communication tools (chats, forums, e-mail, blogs), educational, scientific, informational, reference materials and tools, including electronic dictionaries, developed in electronic form and presented on media of any type or placed in computer networks reproduced by electronic digital technical means to support the educational activities of the applicants; personal sites of teachers (personal site of Sergiy Omelchuk. http://omelchuk.ks.ua;), which are created as hypertext communication-linguistic formation, which is in constant dynamics and fixes both the process and the results of the Internet communication activity, expressed in set of interdependent (thematically, semantically, intentionally, physically) web pages (a personal site contains information about a person, his/her professional, scientific activity, publications, communication coordinates, textbooks, manuals, articles, multimedia presentations; electronic conferences, webinars); electronic educational-methodical complex on discipline, which is designed with the help of hyperlinks, e-textbook – a modern tool of learning, which is a set of software and is intended for presentation of educational material by interactive cooperation with the built-in functions of analysis of students' knowledge level (Semeniv, 2005), e-portfolio, educational projects.

Therefore, based on methodological and theoretical principles, scientists substantiate the feasibility of the use, find out the role and place of modern ICT in the formation of language, speech and communicative competences of school students / university students, identify didactic capabilities of computer methods of teaching the Ukrainian language at different stages of language education (computer modeling, portfolio method, project method, computer game, method of making presentations, testing method, etc.) and their role in teaching and learning the Ukrainian language, find out the effective ways of learning computer languages. "The use of computer learning methods allows to modernize the educational process, increase its productivity, ensure individualization, differentiation in the achievement of educational goals, interactive work of students in electronic networks during the implementation of educational projects", – remarks O. Kucheruk (2011).

Instrumental constituents of the educational and methodological complex on "methods of teaching the Ukrainian language"

The electronic educational-methodological complex (EEMC) of the discipline "Methods of teaching the Ukrainian language" helps to increase the efficiency and effectiveness of the work of teachers and applicants for higher education. Developing the EEMC components of the Ukrainian language teaching method in primary school, we grouped the EEMC components into 11 main points, which became the main navigation headings on the home page (the size of a web page of free site designers does not always make it possible to place the document in full, so it is advisable to design EEMC pages using hyperlinks): "Curriculum", "Work Program", "Lecture Theses" (full-course lecture topics, distributed in html content modules), "Seminars", "Practical classes", (outline of each lesson is given, the points that a student can get on it and for what kinds of work, tasks for preparation for the

next class are shown, etc.), "Tasks for independent work on the discipline", "Laboratory Workshop", "Glossary", "Bibliographic index", "Test control of the topic", "Modular control work".

It should be noted that, while developing the lecture topics, we preferred tables, diagrams, schemes, audio, video fragments, graphs, etc., so, we tried to take full advantage of the opportunities provided by the electronic form of EMC. The pages of "Seminar Classes", "Practical Classes" are similarly designed.

The content of the glossary presents an interpretation of the basic terms of the discipline. A list of them was formed before the creation of the theoretical minimum of the course.

Seminars, practical classes are filled with versatile reproductive material that cannot be placed on paper and will be viewed by the student at a convenient time: to analyze the audio or video fragment (language lesson, didactic material, etc.), text or graphic didactic material, regulatory documentation, course manuals and student books, to identify the lesson stages, methods and techniques, types of exercises, etc. and send a text analysis, text response to the teacher; as well as constructive (to continue the provided snippet or synopsis of the lesson, to correct methodological errors in the submitted didactic material, etc.). The creative material is presented by the development of a system of exercises, fragments of language lessons in primary school, the development of the course of the lesson with visual support. Teachers can test these tasks remotely, which optimizes the teaching and learning process. For example, a task for a practical lesson on the module "Methodology of studying the elements of lexicology by primary school students" on the topic "Organization of the lexicology study at the lessons of the Ukrainian language":

1. To analyze the system of vocabulary exercises in the Ukrainian language textbooks for grades 2-4.

2. Prepare a report "Modern approaches to the study of vocabulary by primary school students (based on materials of scientific and methodological journals)".

3. To compile a collection of vocabulary exercises in the thematic areas (student's choice): *studying antonyms in the primary school; working on synonyms in the primary school; studying paronyms in the primary school; assimilation of the phenomenon of homonymy among the primary school students; work with meaningful words in the primary school; working on the figurative meaning of the word in the primary school; mastering elements of phraseology by the primary school students; organization of the primary students to work with dictionaries.*

4. "Dictionaries are our helpers". To compile a thematic illustrated dictionary (on the material of the textbook "Literary Reading") in the following directions: *Nature around us; Who has not studied will not know anything; Our four-legged friends; the Ukrainian art; Love of the Motherland is the first virtue of a civilized person.*

5. Create an intellect map at the the primary school children's level (quasicards): "Synonyms", "Antonyms", "Paronyms", "Homonyms", "Literal and figurative meaning of the word", "Actually Ukrainian words", "Borrowed words", "Phraseologisms", "Dictionaries".

Of course, it is impossible to check all the proposed tasks during one practical lesson, remote checking will be effective, and it is expedient to use the time of the practical training for analysis and introspection of students' works, demonstration of the best works.

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Therefore, EEMC fully implements the general functions of educational publications: communicative, informational, glossary, developmental, cognitive, educational, organizational, and systematic. Such an EEMC system is dynamic, facilitates the intellectualization of learning, the constant growth of professional training and the need to obtain consolidated information on specific issues, taking into account interdisciplinary and inter-sectoral links.

E-Portfolio as a tool for assessing professional knowledge and competence of participants of primary school teachers' certification

In 2019, the pilot project "Certification of Teachers" in accordance with the Regulation "On certification of pedagogical staff" (2018) was launched. The purpose of the certification is to identify and encourage pedagogical workers with a high level of professional skill, who are proficient in teaching methods and new educational technologies and promote their spread. The project's authors aim to find the best leaders of the New Ukrainian School, changes' agents who are ready to share and spread modern teaching methods. Everyone who passes it, will receive a certificate, and will be able to count on the successful completion of the certification instead of the attestation with promotion to 1 higher qualification category and receive a 20% bonus to the salary. The certification consists of 3 stages: studying the practical experience of the teacher, external independent testing, electronic portfolio (e-portfolio).

An e-portfolio is the third mandatory component of certification. This is a collection of materials generated electronically by the certification's participant, which testifies to the pedagogical skill of the participant.

The researchers separately identify the teacher's portfolio as a set of materials that demonstrates the teacher's ability to solve the tasks of his or her professional activity, to choose a strategy and tactics for professional behavior, and to assess the level of an employee's professionalism (Zagvozdkin, 2006); integrity, which is a collection of different sections of the teacher's work and reflects all aspects of his/her pedagogical activity.

Based on the research by V. Zagvozdkin (2006) we distinguished the following functions of portfolio: cumulative (consists of the selection and preservation of didactic and teaching materials (teacher's achievements (certificates)), qualifications, methodological development materials, texts of speeches, scientific articles, publications, etc.), working materials (teacher's working programs and thematic planning of training courses, author's or individual educational programs recommended by different educational managers and by structures of an educational institution, basic notes of lessons, test tasks, tasks of control, laboratory and practical works, differentiated tasks for students, cards with tasks, etc.); model function is to reflect the dynamics of a teacher's development, to show the results of self-realization, to demonstrate the teaching style and level of teacher's competence; diagnostic function – fixing the dynamics of pedagogical skill growth for a certain period of time; motivation function is to promote the results achieved by the teacher, increase of motivation of professional skill growth, level of awareness of opportunities; rating function helps to reflect the range of skills and abilities of the teacher; systematization and ranking of scientific and practical products, professional achievements by level of importance; reflection of own activity – consists of information accumulation about the results of students' educational activity for the purpose of their further analysis and on the basis of correction of their own activity (correction of teaching methods, structuring of material, selection of didactic means).

Based on the functions of the portfolio, it can be confirmed that it is both a tool of pedagogical diagnostics, a method of assessing the professionalism of teachers, one of the certification forms, and allows to take into account the results achieved by the teacher in various activities: educational, pedagogical, creative, research (Hrona, 2012).

Considering the multifunctional nature, the e-portfolio of the certification's participant may contain: information on professional achievements; educational achievements of students; creative work (presentations, publications, speeches at conferences); author's development of lessons, didactic games, scripts, etc; design solutions for a classroom and a workplace; hyperlinks to blogs, as well as professional groups in social networks administered by the certification's participant, etc.

During the creation and accumulation of e-portfolio materials, the teacher is required to be able to construct, model and design his / her professional activity, taking into account the requirements related to the development of software and methodological complexes.

Thus, today e-portfolios play an important role not only in the educational process, the pedagogical activity of teachers, but also has a great potential in the assessment and self-assessment of the professional activity of teaching staff.

Conclusions

Creation of new information and educational environment, the emergence of modern electronic learning tools, growth of electronic educational resources in the World Wide Web, change of communication forms between subjects of the educational process, development of innovative approaches in language learning based on electronic, digital and telecommunication technologies became objective prerequisites for the development of ELP. It is a new scientific field that studies the laws, the main components of the content and organization of the process of language acquisition and the formation of communicative and speech competence through electronic learning. New (electronic) learning tools due to their innovative qualities – interactivity, multimedia, hypermedia, mobility, multifunctionality, variability, remote accessibility significantly change the usual language learning process.

The use of electronic language pedagogical tools gives the modern language education new qualities, characteristics that are defined by the requirements of the global society.

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