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**METHODOLOGY FOR THE DIGITAL COMPETENCE DEVELOPMENT IN THE
PROCESS OF THE INITIAL TRAINING OF PHILOLOGICAL TEACHERS**

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CONCEPTUAL BENCHMARKS OF THE RESEARCH

The actuality and importance of the problem studied

Over the last 20 years, a series of reforms have taken place in Europe's education systems at an accelerated pace. These refer to all stages and types of training: general education, initial training, continuing vocational training, lifelong learning.

Changes in education are dictated by social disturbances, technological progress and scientific innovations in the field of pedagogy. Thus, in the context of the exponential growth of the information flow and the degree of digitalization of most spheres of human activity, the educational challenges require the elaboration of the educational concepts and models that would optimize the information and communication technologies (ICTs) and would help to prepare an individual fully integrated in a modern society, but also able to easily adapt to future developments.

For these reasons, learner-centered education (LCE) and competency-focused education (CFE) are two benchmarks around which the development of pedagogical models is sought. The European Digital Skills Framework for Citizens DigComp [1] describes five areas that define a "digital competent" individual: information processing; communication; content creation; safety; problem solving.

In the Recommendation of the Council of the European Union of 22 May 2017 on the European Qualifications Framework for lifelong learning [2, p. 7], eight key competences are stipulated: 1) literacy skills; 2) multilingual skills; 3) competences in the field of science, technology, engineering and Mathematics; 4) **digital** skills; 5) personal, social and learning skills; 6) citizenship competences; 7) entrepreneurial skills; 8) cultural awareness and expression skills.

The educational outcomes for the first time were formulated in terms of competences in the Education Code of the Republic of Moldova [3], which explicitly stipulate the key competences that must be trained and developed by the education system. In addition to the knowledge, skills and attitudes established by the recommendations of the European Union, the Education Code also includes values, which demonstrate the tendency of national education to pay special attention to the moralizing and training component [3, p. 82]. Thus, nine key competences are established, eight of which correspond to the eight competences recommended by the Council of the European Union, and the ninth refers to the ability to communicate in Romanian [3, art. 11].

The basic formation of the key competences is done in the general education, and their development will continue throughout the life. The philologist-teacher is the main responsible for the formation of the key competences 1, 2, 9 and is involved in the formation of the skills 5, 6, 8, that's why he must be able to effectively implement the two concepts (the education centered on

the trained one and the training focused on competences). Thus, digital competence is an absolutely necessary characteristic for the modern philologist-teacher.

Description of the situation and identification of problems in the research field

In the context of the problem of the digital competence formation at the philological teachers, the scientific researches carried out so far have aimed: a) *the use of ICT means in the teaching-learning process and that of evaluation within some disciplines* that was investigated by V. Cabac, I. Luru, M. Pavel, L. Chiriac, A. Globa, И. Морозова, С. Маклецов, S. Corlat, A. Braicov, О. Зубикова etc .; b) *formation and development of the competences specific to the philological teachers* (without emphasis on the use of ICT), which were studied by: О. Curteva, L. Hermans-Nymark, И. Щемелева, Т. Тимофеева, М. Бовтенко et al ; c) *theoretical benchmarks of involvement of ICT tools in the study of languages*, which have been addressed in the works of scientists: И. Роберт, Т. Карамышева, М. Thomas; d) *the modalities and impact of ICT use in foreign language learning*, which were investigated by: A. Saucedo, К. Антонова, А. Гарцов, Т Сарана, S. Windeatt, C. Chapelle, R. Sproat, M. Kenning, Y. Catelly; e) *formation of specific competences for philological teachers* (with emphasis on the use of ICT), which were studied by: А. Драгунова, Б. Эльканова, S. Warni, E. Benetou, H. Hou, R. Lăpădat.

Taking these statements into account, the data from the specialized literature in the field of ICT in Education, the imperatives determined by the strategies of education development, including of the Republic of Moldova, it has been demonstrated the importance of mastering the digital competence by the philological teachers. At the same time, a series of **contradictions** were elucidated between: a) the massive development of ICT tools and their insufficient implementation in the process of initial training of philological teachers; b) the opportunities offered by ICT tools in Education and the lack of conceptual and praxiological benchmarks regarding the development of digital competence in the process of initial training of philological teachers; c) the current requirements regarding the level of digital competence and the real level of its possession by philological teachers.

The listed contradictions allow us to formulate the following **research problem**:

the theoretical-praxiological foundation of the efficiency of the process of studying information technologies by developing the pedagogical model for the digital competence development in the process of initial training of philological teachers (DCDITPT), having as effect the optimization of the process of developing the digital competence.

The purpose of the research: the theoretical foundation, the elaboration and validation of the pedagogical model of the digital competence development in the process of initial training of the philological teachers.

Research objectives: 1) Identification of the digital skills needed for a future philological teacher. 2) Determining the competence units aimed at developing digital competence at philology students and the ICT tools applicable to their formation and development. 3) Elaboration of the pedagogical model of the digital competence development in the process of initial training of the philological teachers. 4) Elaboration of the methodology for implementing the DCDITPT pedagogical model. 5) The scientific-methodological argumentation of the efficiency of using the elaborated pedagogical model. 6) Experimental validation of the efficiency of the DCDITPT pedagogical model. 7) Design of a new curriculum at the university course Information Technologies, adapted to the specific of the study programs: Romanian Language and Literature; Russian Language and Literature; Romanian Language and Literature and French Language; Romanian Language and Literature and English Language, Russian Language and Literature and English Language.

Research hypothesis: An efficient development of digital competence at philological students will take place if it is based on: a) a didactic approach focused on those trained through interactive teaching-learning-evaluation strategies; b) an academic training process assisted by information and communication technologies; c) active training methods based on research, cooperation and collaboration; d) the standards of digital competence and the professional standards of the philological teachers; e) extended access (in terms of time, space and format) to educational resources and technologies.

The scientific novelty of the research results consists of: a) identifying the digital skills needed for a future philological teacher; b) determining the units of competence aimed at developing digital competence at philology students and the ICT tools applicable to their formation and development; c) elaboration of the pedagogical model of the digital competence development in the process of initial training of the philological teachers; d) elaboration of the methodology for implementing the elaborated pedagogical model; e) the design of a new curriculum at the university course Information Technologies, adapted to the specific of the study programs: Romanian Language and Literature; Russian Language and Literature; Romanian Language and Literature and French Language; Romanian Language and Literature and English Language, Russian Language and Literature and English Language.

The scientific problem solved consists in the theoretical-praxiological foundation of the efficiency of the process of studying information technologies by elaborating the pedagogical

model of digital competence development in the process of initial training of the philological teachers, having as effect the optimization of the process of development of the digital competence.

The theoretical significance of the paper consists of researching the ways of capitalizing on the ICT tools and the teaching strategies based on research, cooperation and collaboration in the process of developing the digital competence at the philology students and elaborating a pedagogical model..

The applicative value of the paper consists in the approval and successful application of the pedagogical model DCDITPT in the process of study of the university course Information Technologies for the future teachers-philologists, focused on the technologized training environment. The elaborated pedagogical model can be used in the course of Information Technologies for student-philologists, the general field of study Educational Sciences, in the study programs: Romanian Language and Literature; Russian Language and Literature; Romanian Language and Literature and French Language; Romanian Language and Literature and English Language, Russian Language and Literature and English Language. It can be adapted in the training process to the Information Technologies course for students from other faculties, as well as for the continuous training of philological teachers. Also, the instructional-methodical benchmarks were elaborated for the nominated university course.

The approval of the research results was carried out in accordance with the fundamental stages of the study. The main results of the research were presented, discussed and approved during the meetings of the Department of Informatics and Information Technologies of Tiraspol State University, the Department of Science Didactics of Tiraspol State University, the Scientific Council of Tiraspol State University and the Council of the Doctoral School "Sciences of Education" of the Partnership of the Higher Education Institutions TSU, "B. P. Hașdeu " Cahul State University and the Institute of Education Sciences, as well as at national and international scientific conferences:

- National scientific-didactic conference with international participation *Higher education in the Republic of Moldova at 85 years*. Chisinau, September 24-25, 2015;
- National scientific conference with international participation *Mathematics & Information Technologies: Research and Education* (MITRE-2016) dedicated to the 70th anniversary of the Moldova State University. Chisinau, June 23-26, 2016;
- International scientific conference *The Fourth Conference of Mathematical Society of the Republic of Moldova*. Dedicated to the centenary of Vladimir Andrunachevici. Proceedings of CMSM 4. Chisinau, June 28 - July 2, 2017;

- International conference on Mathematics, Computer Science and Information Technology, dedicated to the illustrious scientist Valentin Belousov. Balti, April 19-21, 2018;
- *The 25th international scientific conference on Applied and Industrial Mathematics.* Iasi, Romania, September 15-16, 2017;
- National scientific-didactic conference with international participation, 2nd edition, *Current problems of the real Science Didactics*, dedicated to the 80th anniversary of the university professor Ilie Lupu. Chisinau, May 11-12, 2018;
- *The 26th international conference on Applied and Industrial Mathematics.* Chisinau, Republic of Moldova, September 20-23, 2018;
- National conference on Virtual Education 2018. University December 1, 1918, Alba Iulia, Romania, October 26-27, 2018.

Thesis publications. The scientific and scientific-methodological results of the thesis are reflected in 16 publications: 6 scientific articles in national journals of categories B and C; as well as 10 materials / theses at scientific forums.

CONTENT OF THE THESIS

In the **Introduction**, the actuality and importance of the research topic are argued, there is presented the existing situation in the field of study. Also, the research problem, the purpose and the objectives pursued are formulated; the scientific novelty, the theoretical importance and the applicative value of the work are described, as well as the highlighting and approval of the obtained scientific results.

Chapter 1, Theoretical-didactic aspects regarding the necessity of developing the digital competence of the philological teachers, is structured in four paragraphs. This chapter is dedicated to: analyzing the evolution of the concept of competence and the approach focused on competence; determining the characteristics of digital competence for philological teachers; analysis of the situation in the field of research and identification of problems / obstacles related to the development of digital competence at philology students.

The system of key competences in the Republic of Moldova, compared to the system of key competencies recommended by the European Union, also contains the competence of communication in Romanian, and the structure of the competence (which includes knowledge, skills and attitudes) also includes values. The characteristics of the digital competence of the teachers in general education were highlighted and the digital skills needed for the philological teachers were determined. Based on these, the units of digital competence for the philological teachers were formulated, covering four training areas: cognitive, interpersonal, actional and

affective. They relate to: a) knowledge of the architecture and functions of the computing and communication systems; b) application of content management and learning systems; c) use of Internet services; d) finding and managing information; e) use of the e-mail service and the electronic calendar; f) identification of hardware and software tools; g) the use of text collection and formatting tools; h) use of the tools for checking and correcting texts; i) use of the tools for drawing up the spreadsheet documents; j) use of electronic presentation tools; k) management of language learning tools; l) use of Web 2.0 services; m) use of Internet technologies for language learning; n) use of evaluation tools; o) creation of digital educational resources.

For each unit of competence, there were formulated the learning objectives, classified according to the four training domains: cognitive, interpersonal, actionable, affective.

In the context of the problem of developing digital competence at philological students, the situation in the research field was analyzed, where it was stated that:

- there is a great interest of the researchers in identifying the optimal models of use of ICT means in the study process of different disciplines, including mother tongue and foreign ones;
- the pedagogical models proposed for the training of the professional competences of the philological teachers do not fully exploit the potential of the ICT instruments;
- the pedagogical models for optimizing teaching, learning and evaluation with the help of ICT do not refer to the initial training of philological teachers;
- there are no pedagogical models for the formation and development of the digital competence of the philological teachers, including in their initial training.

Taking these statements into account, there was formulated the research problem; the purpose of the research; research objectives.

Chapter 2, The methodological basis for the development of the digital competence in the initial formation/training of the philological teachers, is dedicated to the elaboration and theoretical foundation of the pedagogical model DCDITPT and the elaboration of the methodology of implementation of this model.

The elaboration of the pedagogical model for the development of digital competence in the initial training of philological teachers

Based on the units of the digital competence (determined by the author and described in Chapter 1), there was conducted a comparative study of 12 curricula of ICT courses for the study programs of Philology in different universities. The study aimed to research the main curricular parameter *Content Units* .

It has been stated that content units *General computer architecture, Operating systems, File management, Networks and Internet, Information security, Text processors, Spreadsheets and Presentation processors* are found in most curricula.

Content units focused on the use of ICT in education are found in less than half of the curricula examined. None of them sufficiently promote the potential of modern information technology in the field of philology, such as specialized software, collaborative tools, Web 2.0 technologies, etc.

To achieve the main purpose of the present research, the DCDITPT pedagogical model was developed and implemented (figure 1), which is based on e-Learning approaches and the principles of ASSURE instructional design [4].

It mainly exploits four learning methods: research-based learning (RBL), project-based learning (PrBL), problem-based learning (PBL) and question-based learning (QBL).

The six stages of designing the educational process (Student analysis; Setting goals; Selecting technology, environment and content; Utilizing technology, media and resources; Recruiting students in practical activities; Assessing and revising) are consecutive parts of a cyclical process.

The DCDITPT model was tested within the course of Information Technologies on a sample of 150 students in the study programs: Romanian and English language and literature; Romanian and French language and literature; Romanian language and literature and Russian language; Russian language and literature and Romanian language; Russian and English language and literature; Romanian Language and Literature.

The components of the DCDITPT model, the digital resources and the computer-assisted learning environments favorable to the development of the digital competence were highlighted to the future philological teachers.

The DCDITPT pedagogical model takes into account the qualification of the specialization (Romanian / Russian / English / French language and literature teacher) and has the following characteristics:

1) *the originality* of the model results from the main innovative value objective - the development of the digital competence of the philological teachers in their initial formation;

2) *the integrity* of the model is expressed by explicitly ensuring the functionality of all the components and stages of the educational process (design, teaching, learning, evaluation, guidance, etc.);

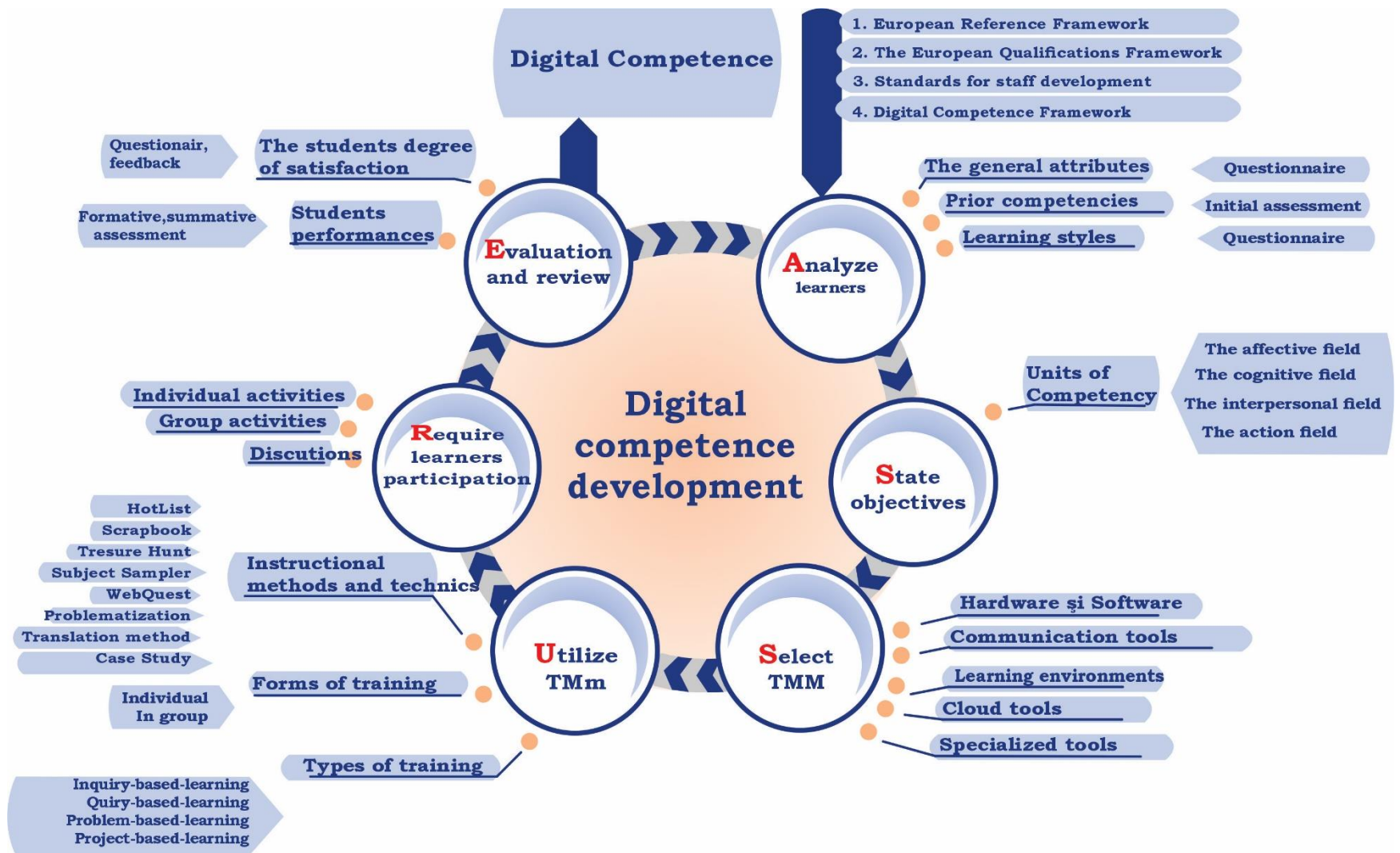


Fig. 1. The model of digital competence development in the process of initial training of philological teachers (DCDITPT Model)

3) *the realism* of the model is ensured, on the one hand, by the input parameters (regulatory acts, standards), on the other hand - by the technologies, the appropriate environments and accessible to both the teacher and the students;

4) *the plurivalence* of the model arises from the positive action effect, which not only refers to the development of digital competence, but, through a natural transitivity - and to other components: communication, social, learning, research, etc.

The methodology for implementing the DCDITPT pedagogical model

The Modern Didactics offers us a wide range of teaching strategies, methods and procedures which, being effectively integrated into the instructional-educational process, lead to the achievement of performances. In order to achieve academic success, the lesson must be viewed from a perspective based on new concepts, which do not exclude traditional methods of learning, but complement them with innovative ideas, correlated with the existing ones [5].

The educational objectives pursued in applying the model are:

For the development of the digital competence of the future philological teachers, a series of digital resources and computer-assisted learning environments have been identified favorable to the development of the digital competence to the future philological teachers:

- hardware tools (computer or other digital devices that can be connected to the Internet and work on different platforms; interactive board; projector; video camera; document-camera);
- soft tools (Articulated 360, Snagit 12 Editor, MovieMaker, Storyline, PowerPoint, Price, Camtasia, etc.);
- synchronous or asynchronous communication tools (Skype, Yahoo Messenger, Viber, Adobe Conect, email, chat, instant message, forums, blog, Wiki, Slideshare, Youtube, Facebook etc.); training environments (SMI Moodle, Google Sites, Office 365);
- cloud tools (Google: Google Docs, Google Sheets, Google Slides, Google Forms, Google Drive, Google Blogs, Google Translate, Gmail, Google Contacts, Youtube; Office 365: OneNote, Sway, Teams, Word, Forms, Class Notebook etc.);
- software tools specific to the field of Philology (dictionaries, grammar checkers, spellings: LanguageTool, PaperRater, Grammarly, LexiRo; language learning applications: Babbel, Duolingo, etc.).

Also, there were presented the didactic strategies for the formation of the digital competence to the philological students and their modalities of implementation. In order to develop and value cognitive, affective, interpersonal and action resources, it is necessary to build a didactic

strategy based on action, application, investigation, experimentation, thus creating a favorable environment for sustainable knowledge and quality learning.

In the process of teaching the Information Technologies course, the didactic strategies applied by the author were chosen so as to ensure the formation of digital competence by combining different methods, techniques, means of learning and forms of organization of student learning [6-12]. These strategies are shown in Figure 2.

Moodle and/or Office 365 can be used as a means of organizing and managing training activities. Each topic / topic must be supported by presentations, video tutorials, pdf files, in order to allow the organization of different activities: interactive, collaborative, individual; laboratory work, etc.

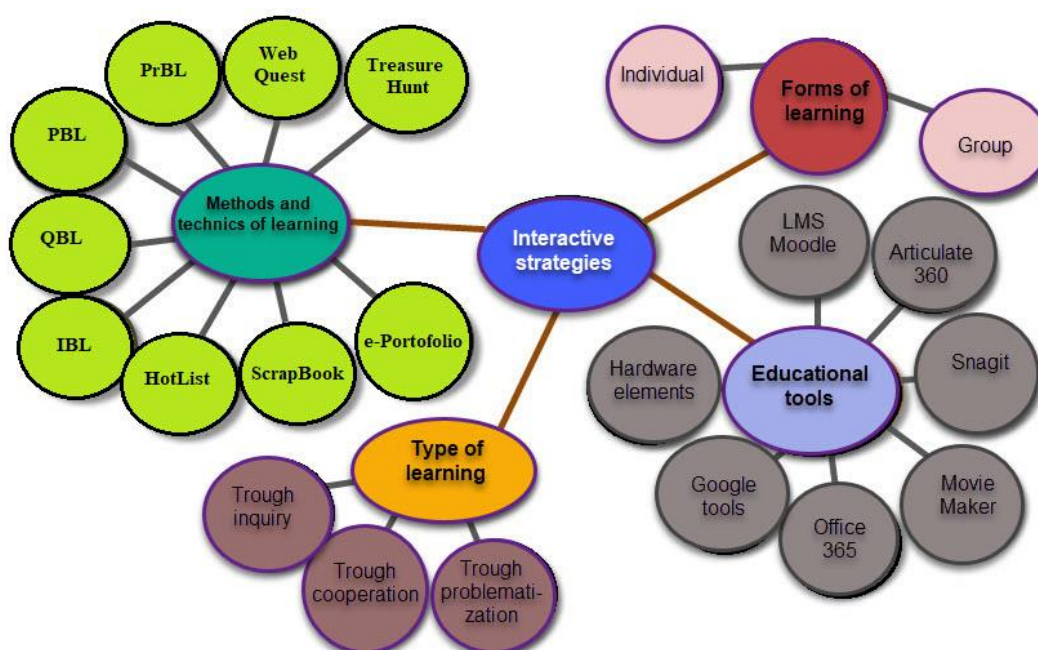


Fig. 2. Interactive strategies for DCDITPT

In order to teach the Information Technologies course, the author has established four active training methods.

Research-based learning (RBL) implies the active involvement of the student in achieving the objectives in a particular subject/topic.

In RBL, there are methods that involve teamwork, discussions, simulations, interactivity, using images, clips, etc. Through research and investigation activities, the students become creative, communicable, critical, self-confident, active, collaborative, innovative [13–15].

The RBL, applied in the study of information technologies, contributes to:

- strengthening sustainable and mobile mental operations;
- forming cooperation and collaboration skills;

- improving written and oral communication skills;
- developing the skills of searching, analyzing and synthesizing information;
- solving problems and making decisions;
- training skills for using Web technologies;
- development of complex cognitive and thinking skills at a higher level;
- forming a critical attitude towards Internet technologies.

Hotlist, Treasure-Hunt, Subject Sampler and Multimedia Scrapbook techniques are modern language learning solutions. Cleverly combined with traditional teaching-learning methods, they represent an effective educational support for training and developing research and investigation skills. They lead to a positive dynamic of study self-motivation and, consequently, to the achievement of academic performance.

The project-based learning (PrBL) is an active training model focused on the learner and oriented towards the development of the knowledge, skills and skills of the pupils / students through work tasks in which they investigate, discover, process information about a topic in real life [17].

The project-based learning is an alternative to traditional teaching-learning methods and can be used both as a teaching and learning method and as well as an assessment method.

This method was used by the author in teaching the Information Technologies course by applying the Web-Quest technique. Web-Quest is an activity in which the student asks questions and collects the necessary information, especially the one from the Internet. Web-Quests are designed to focus on the use and analysis of information, rather than on its search. This means that the teacher provides the student with the necessary web addresses.

The purpose of a Web-Quest project is to promote learning through critical thinking and collaboration.

The Web-Quests encourage students to perform simulation tasks, asking them to analyze and update various information on a particular topic and use it for future publication in the virtual world.

The Web-Quest projects contribute to the improvement and development of reading, speaking, writing, listening skills and at the same time: they encourage students to interact, to exchange information; cause active learning and competition; promote individual learning and lifelong learning through participation in professional communities; promote motivation and develop problem solving and decision making skills; offer students the opportunity to examine tasks from different perspectives, using a variety of technologies; they integrate the assessment.

The problem-based learning (PBL) is a form of training that involves creating a problem situation and putting it, intentionally, in front of the student/pupil, and this, in turn, must be solved by his own effort. This type of learning triggers intellectual thinking and effort, involves independent activity and provides opportunities to seek out one's own solutions. It is an active cognitive process, which requires ingenuity and the application of the full intellectual potential. The method of problematization coexists in a heuristic conversation, where the oral communication initiated by the teacher predominates, the communication which is oriented to activate the logical thinking of the students.

The PBL results in a product, a presentation of an action. The essence of problem-based training is that it is a group approach and encourages independent work and self-directed learning [18].

The PBL offers a number of advantages: it develops critical thinking; trains problem solving skills; builds teamwork skills; develops transversal skills; forms self-directed learning skills; facilitates the development of communication skills.

The question-based learning (QBL) is one of the active learning strategies in which, through questions and answers, the teacher directs the student to accumulate new knowledge on the basis of existing abilities/knowledge. It is productive if it causes curiosity, freedom and independent thinking.

As part of the pedagogical experiment, QBL was implemented through the case study method.

The case study is an interactive teaching-learning method that involves a thorough investigation of a complex situation in real life. It is a method that is based on research, involves the student's active participation and results in solving the problem in a concrete situation [18]. It stimulates critical thinking through analysis, diagnosis, comparison, investigation and case solving.

The evaluation is a fundamental component of the education process through which it is collected, processed and interpreted information about the state and functionality of a system, about the obtained results, an activity that leads to the appreciation of these results on the basis of some criteria and to the improvement decisions [19].

During the teaching-learning course of the *Information Technologies* course, there were performed two summative current assessments and a final evaluation in the form of Moodle tests for the experimental groups. In addition to the traditional methods of evaluation (written evaluation; oral evaluation; practical tests; tests), there were used alternative methods of evaluation (project method, digital portfolio method) in the course of *Information Technologies*. They have

been designed to produce and valorize creativity, to analyze and determine the degree of knowledge integration in solving complex tasks.

Applying the *project method* (PM) to the assessment of the competence unit *Creating and using the wiki pages*, through individual and group activities, the students were challenged to showcase their search, analysis, comparison and association skills, thus contributing to their progressive individual training and social relations.

As the public presentation of the final product develops the ability to demonstrate/determine what students know, the formative evaluation was intended to be a promoter of the student-teacher partnership, in which the student participates consciously in his own training and evaluation.

Applying the PM, the students combined the competences obtained at the lessons of Romanian language and literature with those acquired at the *Information Technologies* course, thus ensuring the interdisciplinarity of the two fields.

The digital portfolio, as a method of formative evaluation, has an integrative character, being the student's visit card and reflecting his progress over a period of time. This method offers the students opportunities to work at their own pace, encouraging active involvement and developing self-assessment skills, discovering the value of skills and possible errors.

Through the project method and the electronic portfolio method, the potential of Web 2.0 tools (for example Wiki and Google Sites) has been exploited in:

- developing the skills of collaboration and communication in the virtual space;
- training the skills of using the Internet and Web 2.0 service;
- improving digital skills at the individual and group level;
- the challenge of learning through discovery;
- training skills for creating educational content;
- forming a specific attitude towards Web 2.0 technologies.

The development of ICT tools drives the diversification and modernization of technologies and educational resources. The didactic approaches used to develop the digital competence in the initial training of philological teachers must take into account both the opportunities offered by modern hardware and software products, as well as the specificity of the *Philology and Education Sciences fields*.

Thus, we can formulate the following research results:

- 1) There was elaborated the pedagogical model for the development of digital competence in the process of initial training of philological teachers. The main purpose of the model is *to improve the quality of the process of study of information and*

communication technologies and to develop the digital competence of the philological teachers in their initial formation/ training.

- 2) For the implementation of the elaborated model, there has been created a methodology that includes teaching strategies and methods centered on the student and oriented towards the deep valorization of the ICT tools.
- 3) The model and methodology allow the implementation of traditional training methods (lecture, conversation, exercise, etc.) and interactive methods (case study, research, discussion forum, project, portfolio, RBL, PBL, RB, QBL, PrBL, Hotlist, Treasure Hunt, Multimedia Scrapbook, Subject Sampler, Web Quest).
- 4) The interactive teaching strategies of the model are based on action, application, research and implementation, a fact which ensures a quality learning.
- 5) As the model uses as a learning environment, the Learning Management System (LMS), there was extended the series of educational resources and technologies at the *Information Technologies course* with digital resources and technologies focused on LMS, a fact which allowed the maximum efficiency of the students' access to them (without time and location restrictions).
- 6) A curriculum was developed at the university course *Information Technologies* for the philological students in the field of Education Sciences, which reflects the pedagogical model created.
- 7) The obtained results allow solving the problem of the research and achieving its objectives.

Chapter 3, Experimental approaches regarding the validation of the pedagogical model for the digital competence development in the initial training of philological teachers, reflects the three stages of the pedagogical experiment (confirmation, training and developing the digital competence, validating the model and methodology). The Statistical analysis of the results of the pedagogical experiment was performed using SPSS and MS Excel applications.

The objectives of the pedagogical experiment conducted in the research aimed at:

- a. identifying the existing state of the problem at the time of initiating the experimental investigation regarding the level of digital competence possessed by the students involved in the study group;
- b. highlighting the possible solutions in order to develop the digital competence of the philological students for learning by applying interactive teaching strategies (ITS);
- c. elaborating qualitative digital resources for the university course *Information Technologies* for philology students;

- d. implementation of the digital resources elaborated and placed on the Moodle LMS in the process of training at the university course *Information Technologies*;
- e. organizing the students' collaborative activities on Moodle LMS through collaborative learning tasks;
- f. establishing the contribution of interactive teaching strategies regarding the development of digital competence for philology students;
- g. construction and validation of the digital competence assessment tools from the ITS perspective;
- h. synthesizing the final ideas in conclusions, following the analysis of the data recorded by the students in the experimental group, and comparing them with the results of the control group subjects.
- i. validation of the pedagogical model and the elaborated methodology.

The experiment was conducted over two years of studies (2016-2017; 2017-2018), involving 80 students from Tiraspol State University (TSU) and 70 students from the BP Cahul State University.

In the first stage, there was carried out the observation experiment which aimed to identify the existing state at the moment of initiating the experimental investigation regarding the level of digital competence of the students involved in the research groups and highlighting the possible solutions for developing the digital competence of the future philology teachers.

In order to accumulate the initial data, there was elaborated and applied a questionnaire regarding: the level of the use of information and communication technologies (ICT) by the subjects in the teaching-learning process at the previous levels of education (secondary school, high school/college); the student's preferences regarding the improvement of the teaching-learning process; the degree of digital skills. The experimental group consisted of 150 students, and the control group - 165 students.

An important objective of the present research was to determine the students' opinion on the impact of ICT on learning. The results were collected through another questionnaire. Respondents stated that through ICT, the interest in learning increases, succeeding in achieving a better concentration, having better academic results, working more effectively in the team, developing their communication skills, having a better attitude towards colleagues.

Therefore, we can mention the following intellectual, emotional and social behavioral aspects, which can be modified in a positive way through the use of ICT: increasing the interest in learning; achieving a better concentration; improving academic results; outlining communication skills; increasing the positive attitude towards colleagues.

In the case of analyzing the efficiency of computer-assisted assessment, 83% of respondents rated the objectivity of computer-assisted assessment as a "very objective" or "objective", which indicates that the use of ICT has become a priority of the university education system. The students consider it absolutely necessary to use ICT in the rapid and correct assessment of the competences formed.

Table 1. Distribution of the number of students involved in the pedagogical experiment

Academic year	Experimental group (number of students)	Control group (number of students)
2016-2017 (full-time education)	25 (TSU) 22 (CSU)	29(KSU) 29(CPSU)
2016-2017 (part-time education)	17 (UST) 11 (CSU)	15 (KSU) 15(CPSU)
2017-2018 (full-time education)	22 (TSU) 25 (CSU)	17 (USK) 25 (CPSU)
2017-2018 (part-time education)	16 (TSU) 12 (CSU)	18 (KSU) 17 (CPSU)
Total	150	165

Based on the analysis of the answers to the questions in this questionnaire, the efficiency of the use of ICT in the instructional-educational process was profiled and it was found that they facilitate both the accumulation of knowledge and the formation of skills, as well as their correct evaluation.

The number of persons involved in the pedagogical experiment is reflected in table 1.

Also in the statement phase, an initial test was carried out, determining the level of initial training of the students trained in the experiment. This test was applied to the persons included in the pedagogical experiment that lasted two years of studies: 2016-2017 and 2017-2018. For the respective experiment, two groups (experimental and control) were selected, where the homogeneity of these groups was verified and shown, the selection criterion being a random one.

There were formulated the following research hypotheses:

$H_0: m_1 = m_2$ – there are no significant differences between the average data of the experimental group and the average of the control group;

$H_1: m_1 \neq m_2$ – there are significant differences between the average data of the experimental group and the average of the control group.

For the statistical analysis of the collected data, there were applied the t-Student tests (parametric) and the Mann-Whitney test (nonparametric) for two independent groups.

The results provided by SPSS, following the application of the t-Student test, for the groups from the frequency section involved in the experiment, the study year 2016-2017, are given in table 2.

From Table 2 it is observed that for the Levene test the value of $p = 0.010$ is less than 0.05, and $F(103) = 6.874$. Therefore, the Levene test is considered to be significant, the variances are not equal and, in this case, the results are read from the bottom column (Equal variances not assumed) of the table. In this data set it is observed that the result of the t-Student test is: $t = 0.145$, the significance threshold $p = 0.885 > 0.05$. Therefore, based on the results obtained after applying the t-Student test on the initial test, it is considered that there are no significant differences between the experimental and control group environments.

Table 2. Results of the t-Student test, academic year 2016-2017, full-time studying.

T_initial	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed) p	Std. Error Difference
Equal variances assumed	6,874	0,010	0,137	103	0,891	0,16071
Equal variances not assumed			0,145	94,887	0,8854	0,15272

For the experimental data from the 2017-2018 study year, the full-time studying groups, there also was applied the t-Student test, and the results show that even in this case, based on the results provided by the initial test, it is attested that there are no significant differences between the experimental and control group environments.

The t-Student test was also verified for the control and experimental groups from the 2016-2017 and 2017-2018 study years for the part-time studying groups, to determine if there are or no differences between the average data of these two groups. The results provided by the SPSS application also demonstrate that at the initial test there are no significant differences between the experimental and control group environments.

To confirm the results described after applying the t-Student test, there was performed the nonparametric Mann-Whitney test.

The Mann-Whitney test results for the control and experimental groups, for the 2016-2017 study year, full-time studying groups, are shown in table 3.

Table 3. Results of the Mann-Whitney test, studying year 2016-2017, full-time education

T_initial	Control group	Experimental group
<i>n</i>	58	47
Mean Rank	53,85	51,95
Sum of Ranks	3123,50	2441,50
Mann-Whitney U	1313,500	
Wilcoxon W	2441,500	
Z	-0,334	
Asymp. Sig., <i>p</i>	0,739	

The minimum value of the parameters is equal to 1313,500, and $Z = |-0.334| = 0.334$, for a $p = 0.739 > 0.05$. Therefore, we can conclude that there are no significant differences between the two groups in terms of the results of the initial test. Thus, the Mann-Whitney test also confirms the fairness/correctness of the null hypothesis.

The training/formation experiment was conducted during the studying years 2016-2017, 2017-2018. The experimental group consisted of 150 students from TSU and CSU. The purpose of the experiment was to implement the pedagogical model and to establish the efficiency of the training based on it.

Based on the analysis of the situation regarding the training of the philological students in the field of ICT from the universities in the country and abroad, the university course of Information Technologies has been reconceptualized, destined to train the future philological teachers. There was elaborated the disciplinary curriculum of Information Technologies for philological students, oriented to the formation of digital competence and adapted to the specific professional competences of philological students. The units of competence were formulated taking into account the training objectives, which determined the stages of learning, following the logical course of thinking: knowing the concept; application; integration and attitude. The units of competence were formulated and structured according to the four stages of learning (knowledge, application, integration and attitude).

After the implementation of the DCDITPT pedagogical model and the proposed methodology, the students' results (grades) were collected in the two summative assessment tests and the marks from the final evaluation. The statistical processing was performed on the basis of the final marks obtained by the students in the Information Technologies discipline.

In order to analyze the results of the final evaluation of both groups from the 2016-2017 academic year, there was applied the t-Student test for independent sample groups.

Table 4. Basic statistical indicators, study year 2016-2017, full-time education

	Group	N	Average	Standard	Standard Error
Final test	experimental	47	8,2585	0,91617	0,13364
	control	58	5,3793	0,76840	0,10090

From Table 4 it is observed that the average mark of the experimental group (8.2585) is higher than the average mark of the control (5.3793).

Levene test result [$F(103) = 2.463, p = 0.120 \geq 0.05$] is insignificant, and the variances are equal (Table 5). We will analyze the results for the t-Student test first. It is determined that $t = 17,514$, and $p = 0.000 \leq 0.05$, which means that there are significant differences between the means of the experimental and the control group. Also, from this table, the difference between the averages is 2.87920, and the 95% confidence interval includes this difference. It turns out that in

this interval there is no value 0, thus it is again shown that the difference between the averages is significant.

Table 5. Results of the t-Student test, 2016 - 2017 academic year, full-time education

Nota finală	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed) p	Mean Difference Δ_m	Std. Error Difference	95% CID*	
								Lower	Upper
Equal variances assumed	2,463	0,120	-17,514	103	0,000	-2,87920	0,16439	-3,20523	-2,55317
Equal variances not assumed			-17,195	89,833	0,000	-2,87920	0,16745	-3,21187	-2,54653

To demonstrate that the significant difference between the averages obtained by the students in the experimental group at the Information Technologies course unit compared to the averages accumulated by the students in the control group, registered in the same study discipline, is not a random one, there was calculated the effect size, which is a compulsory statistical indicator that quantifies the size of the difference between these averages or the intensity of the interdependence between the independent variables under test (table 6).

Table 6. Effect size, for the groups involved in the pedagogical experiment, based on the results of the t-Student test

Study Year	<i>t</i>	<i>d</i>	<i>r</i>
2016-2017, full-time education	17,514	3,470508	0,866425
2016-2017, part-time education	9,184	2,382481	0,765908
2017-2018, full-time education	17,094	3,671136	0,878141
2017-2018, part-time education	8,984	2,314901	0,756699

To interpret the effect size, we will use the reference values set by Cohen [20, p. 83]. Analyzing the results of the t-Student test from the point of view of the effect size, it can be concluded that, following the implementation of the DCDITPT pedagogical model and the proposed methodology, the effect produced on the academic performances of the students in the experimental groups is a "strong one" based on the Cohen ($d > 0.8$) *d* indicator size.

To determine the degree of correlation of the marks obtained in the summative tests and in the final test by the students in the experimental group, 2016-2017 study year, full-time section, there was applied the Pearson test. Correlating the results obtained in the summative tests and in the final test by the students in the experimental group, the year of studies 2016-2017, is presented in table 7.

Analyzing the data in this table, we can conclude that the degree of correlation between test 1 and test 2 is 0.747, and the degree of correlation between test 2 and the final test is 0.779. Thus, the closer the value of the Pearson coefficient is to 1, the greater is the correlation between these variables [21, p. 13]

Table 7. Pearson correlation coefficient value for the experimental group, 2016-2017 study year, frequency section

	Test 1	Test 2	Final Mark
Test_1 Pearson Correlation	1	0,747	0,779
Sig. (2-tailed)		0,000	0,000
N	105	105	105
Test_2 Pearson Correlation	0,747	1	0,802
Sig. (2-tailed)	0,000	0,000	0,000
N	105	105	105
Final Mark Pearson Correlation	0,779	0,802	1
Sig. (2-tailed)	0,000	0,000	
N	105	105	105

The Pearson test was applied also in the experimental group, 2017-2018 study year, full-time education, and in the experimental one, the study years 2016-2017, 2017-2018, part-time education, which indicated values of the Pearson correlation coefficient. closer to 1. Thus, the degree of correlation is very high and we can say that the results of test 2 have completely influenced the performance obtained in the final test.

Therefore, according to the results of the Pearson test, we can conclude that the experimental groups have obtained significant academic performances as a result of applying the pedagogical model of developing the digital competence in the initial formation of philological teachers in the process of studying the Information Technologies university course.

There was also applied the Mann-Whitney U test in the groups investigated in the 2016-2017 study year.

Table 8. Ranks average and sum for independent groups, 2016-2017 study year, full-time education.

	Group	N	Ranks average	Ranks Sum
final test	experimental	47	81,68	3839,00
	control	58	29,76	1726,00

From Table 8 it is observed that the ranks average in the control group does not exceed that of the experimental group.

Table 9. Mann-Whitney test values for independent groups, 2016-2017 study year, full-time education.

	exam
Mann-Whitney U	15,000
Wilcoxon W	1726,000
Z	-8,822
Asymp. Sig. (2-tailed)	0,000

Table 9 shows the Mann-Whitney U, Wilcoxon W test values and the transformation of the U value into a Z score. From this table we are interested in the value of $Z = -8,822$ and the significance threshold $p = 0$. Since $p \leq 0.05$, it follows that there are significant differences between the two groups in terms of final test results.

Table 10. Ranks Average and sum for independent groups, 2017-2018 study year, full-time education

	Group	N	Mean Rank	Sum of Ranks
exam	control	42	21,71	912,00
	experimental	47	65,81	3093,00
	Total	89		

Based on the analysis of the answers to the questions in this questionnaire, there was profiled the efficiency of the use of ICT in the instructional-educational process and it was stated that they facilitate both the accumulation of knowledge and the formation of skills, as well as their correct evaluation.

The number of people involved in the pedagogical experiment is reflected in table 11.

Table 11. Mann-Whitney test values for the independent groups, 2017-2018 studying year, full-time education

	exam
Mann-Whitney U	9,000
Wilcoxon W	912,000
Z	-8,197
Asymp. Sig. (2-tailed)	0,000

By applying the Mann-Whitney test, the year of studies 2017-2018, full-time studying, it was shown that the marks obtained by the students in the experimental group are higher than the marks obtained by those in the control group. The data in Table 11 show that: $z = -8,197$; $p = 0$, which shows that there are significant differences between the two sample groups. The data from table 10 show that the students in the experimental group have a higher ranks average than those in the control group ($65.81 > 21.71$), which results that the experimental group obtained better results than the control one.

Table 12. Effect size, for the sample groups (control and experimental) involved in the pedagogical experiment, based on the results of the Mann-Whitney test

Year of Study	U	z	r
2016-2017, full-time	15,514	-8,882	0,911274
2016-2017, part-time	45,000	-6,190	0,812787
2017-2018, full-time	9,000	-8,897	0,94308
2017-2018, part-time	48,00	-6,200	0,781127

Analogously, the Mann-Whitney test was applied also in the control and experimental groups of the years of studies 2016-2017, 2017-2018, part-time education. Similarly, it has been

shown that the students in the experimental group obtained better results than those in the control one.

Therefore, according to the effect size, based on the Mann-Witney test we can conclude that: the new methodology proposed, focused on interactive teaching strategies, had a strong effect on the academic performances obtained by the students in the experimental group in the years 2016-2017, 2017-2018, both full-time and part-time sections.

Therefore, the pedagogical experiment conducted by the author validated the efficiency of the DCDITPT pedagogical model and its implementation methodology. Thus, the research problem was completely solved: the theoretical-praxiological foundation of the efficiency of the process of studying information technologies by elaborating the pedagogical model of digital competence development in the process of initial training of philological teachers, having as effect the optimization of the process of digital competence development.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The researches carried out refer to the development and validation of a pedagogical model for the digital competence development in the initial training of philological teachers (DCDITPT). The information and communication technologies have changed the paradigm of the didactic communication so that the digital competence has become an indispensable parameter of the philological teacher. The implementation of the DCDITPT model is done within the university course Information Technologies for philological students, the field of Educational Sciences.

Following these researches, the following **general conclusions** can be made:

1. The digital skills needed for a philological teacher were identified. They must help the teacher to use the teaching strategies, methods and training techniques for developing communication skills and training research skills.
2. There have been developed 15 units of digital competence for philological teachers:
UC1: Knowledge of the architecture and functions of computing and communication systems;
UC2: Application of content management and learning systems;
UC3: Use of Internet services;
UC4: Finding and managing information;
UC5: Use of e-mail and e-mail service;
UC6: Identification of hardware and software tools;
UC7: Use of text collection and formatting tools;
UC8: Use of text checking and proofreading tools;
UC9: Use of tools for drawing up the spreadsheet documents;

- UC10: Use of electronic presentation tools;
- UC11: Management of language learning tools;
- UC12: Use of Web 2.0 services;
- UC13: Use of Internet language learning technologies;
- UC14: Use of evaluation tools;
- UC15: Creating digital educational resources.

These units of competence comprise six categories of skills (scientific, methodological and psycho-pedagogical; managerial; evaluation; decision-making; relationship; training) and cover four training areas (cognitive, interpersonal, action, affective).

3. The following resources and digital media favorable to the study of information technologies by the philological students have been identified, correlated with the digital skills needed for a philological teacher:
 - hardware tools (computer or other digital devices that can be connected to the Internet and work on different platforms; interactive board; projector; video camera; document-camera);
 - soft tools (Articulated 360, Snagit 12 Editor, MovieMaker, Storyline, PowerPoint, Price, Camtasia, etc.);
 - tools for synchronous communication and asynchronous communication (Skype, Yahoo Messenger, Viber, Adobe Conect, email, chat, instant messages, forum, blog, Wiki, Slideshare, Youtube, Facebook, etc.);
 - training environments (SMI Moodle, Google Sites, Office 365);
 - cloud tools (Google: Google Docs, Google Sheets, Google Slides, Google Forms, Google Drive, Google Blogs, Google Translate, Gmail, Google Contacts, Youtube; Office 365: OneNote, Sway, Teams, Word, Forms, Class Notebook etc.);
 - software tools specific to the field of Philology (dictionaries, grammar checkers, spellings: LanguageTool, PaperRater, Grammarly, LexiRo; language learning applications: Babbel, Duolingo, etc.).
4. The DCDITPT pedagogical model is based on e-Learning approaches and the principles of ASSURE instructional design. It mainly exploits four interactive teaching strategies (research-based learning, project-based learning, problem-based learning and question-based learning) and significantly improves the quality of the information technologies study process for philological students.
5. The efficiency of using the elaborated pedagogical model has been argued from the scientific-methodological point of view by its implementation methodology, which

includes modern (interactive) training methods and techniques: HotList; scrapbook; TreasureHunt; Subject Sampler; WebQuest etc.

6. The curriculum at the university course *Information Technologies* developed by the author reflects the concept of the DCDITPT model and emphasizes the ways of using technology, media and content in the educational process.
7. The educational resources created by the author, having different digital formats, are student-centered, allow the individualization of learning and are available both through the Moodle SMI platform and other digital communication tools.
8. Through the pedagogical experiment, conducted within the research, there were validated the DCDITPT pedagogical model and the effectiveness of its implementation methodology.
9. The solution of the research problem and the achievement of the proposed objectives are confirmed by the results obtained, validated at scientific conferences and published by the author in reviewed works [22 - 37]. According to the results obtained, we can make the following practical recommendations:
 - 1) Implementation of the pedagogical model for the development of digital competence in the initial training of philological teachers.
 - 2) Analysis of the materials published in the thesis topic for the efficiency of the activities of the teaching staff in the university education.
 - 3) Integration of the results obtained by the author in the initial training process of the philological teachers.
 - 4) Applying the model with:
 - a. Its extension (in perspective context) for:
 - all categories of philological students;
 - continuous training of philology teachers;
 - b. Periodic update (at least every five years).

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ADNOTARE

Veverița Tatiana. Metodologia dezvoltării competenței digitale în procesul formării inițiale a cadrelor didactice filologi. Teză de doctor în științe pedagogice. Chișinău, 2019

Structura tezei: introducere, trei capitole, concluzii generale și recomandări, bibliografie din 238 de titluri, 37 de anexe, 141 pagini de text de bază, 35 de figuri, 40 de tabele. Rezultatele obținute sunt publicate în 16 lucrări științifice.

Cuvinte-cheie: competență digitală, instruire centrată pe competențe, strategii interactive, învățare bazată pe cercetare, învățare bazată pe proiect, învățare bazată pe probleme, învățare bazată pe întrebări, finalități de studii, e-Learning.

Domeniul de studiu: Științe pedagogice. Didactica școlară (pe trepte și discipline de învățământ)

Scopul cercetării: fundamentarea teoretică și elaborarea modelului pedagogic de dezvoltare a competenței digitale în procesul formării inițiale a cadrelor didactice filologi (DCDFICDF).

Obiectivele cercetării: 1) Identificarea abilităților digitale necesare unui cadru didactic filolog. 2) Determinarea unităților de competență care vizează dezvoltarea competenței digitale la studenții-filologi și a instrumentelor tehnologiilor informaționale și comunicaționale (TIC) aplicabile la formarea și dezvoltarea acestora. 3) Elaborarea modelului pedagogic DCDFICDF și a metodologiei de implementare a acestuia. 4) Argumentarea științifico-metodologică a eficienței utilizării modelului pedagogic DCDFICDF și validarea eficienței modelului prin experiment pedagogic. 5) Proiectarea unui curriculum nou la cursul universitar *Tehnologii Informaționale*, adaptat la specificul programelor de studii: Limba și literatura română; Limba și literatura rusă; Limba și literatura română și limba franceză; Limba și literatura română și limba engleză, Limba și literatura rusă și limba engleză.

Noutatea și originalitatea științifică a lucrării constau în: a) identificarea abilităților digitale necesare unui cadru didactic filolog; b) determinarea unităților de competență care vizează dezvoltarea competenței digitale la studenții filologi și a instrumentelor TIC aplicabile la formarea și dezvoltarea acestora; c) elaborarea modelului pedagogic DCDFICDF și a metodologiei de implementare a acestuia; d) proiectarea unui curriculum nou la cursul universitar *Tehnologii Informaționale*, adaptat la specificul programelor de studii: Limba și literatura română; Limba și literatura rusă; Limba și literatura română și limba franceză; Limba și literatura română și limba engleză, Limba și literatura rusă și limba engleză.

Problema științifică soluționată constă în fundamentarea teoretico-praxiologică a eficientizării procesului de studiere a tehnologiilor informaționale prin elaborarea modelului pedagogic DCDFICDF, având ca efect optimizarea procesului de dezvoltare a competenței digitale.

Semnificația teoretică a lucrării constă în cercetarea modalităților de valorificare a instrumentelor TIC și a strategiilor didactice bazate pe cercetare, cooperare și colaborare în procesul de dezvoltare a competenței digitale la studenții-filologi și elaborarea unui model pedagogic DCDFICDF.

Valoarea aplicativă a lucrării constă în aprobarea și aplicarea cu succes a modelului pedagogic DCDFICDF în procesul de studiu al cursului universitar *Tehnologii Informaționale* pentru viitorii profesori-filologi, axat pe mediul tehnologizat de instruire. Modelul pedagogic elaborat poate fi utilizat la cursul *Tehnologii Informaționale* pentru studenții-filologi, domeniul general de studiu *Științe ale Educației*, la programele de studii: Limba și literatura română; Limba și literatura rusă; Limba și literatura română și limba franceză; Limba și literatura română și limba engleză, Limba și literatura rusă și limba engleză. Acest model poate fi adaptat în procesul de instruire la cursul *Tehnologii Informaționale* pentru studenții altor facultăți, precum și pentru formarea continuă a cadrelor didactice filologi. De asemenea, au fost elaborate rețetele instructiv-metodice la cursul universitar vizat.

Implementarea rezultatelor științifice. Metodologia elaborată este utilizată în predarea cursului universitar *Tehnologii Informaționale* în cadrul Facultății *Filologie* a Universității de Stat din Tiraspol și în cadrul Facultății *Științe Umaniste și Pedagogice* a Universității de Stat *B. P. Hașdeu* din Cahul.

АННОТАЦИЯ

Веверица Татьяна. *Методология развития цифровой компетенции в процессе подготовки учителя-филолога.* Диссертация доктора педагогических наук. Кишинэу, 2019

Структура диссертации: введение, три главы, выводы и рекомендации, библиография из 238 наименований, 37 приложений, 141 страниц основного текста, 35 рисунков, 40 таблиц. Результаты исследования опубликованы в 16 научных работах.

Ключевые слова: цифровая компетентность, компетентностный подход, интерактивные стратегии, научное обучение, проектное обучение, проблемное обучение, обучение на основе вопросов, результаты обучения, e-Learning.

Область исследования: Педагогика. Школьное образование (по ступеням и учебным дисциплинам).

Цель исследования: Теоретическое обоснование и разработка педагогической модели развития цифровой компетенции в процессе инициальной подготовки учителя-филолога (РЦКИПУФ).

Задачи исследования: 1) Определение цифровых навыков, необходимых филологу. 2) Определение единиц компетенции, направленных на развитие цифровой компетенции для студентов-филологов, и инструментов ИКТ, применимых к их формированию и развитию. 3) Разработка педагогической модели РЦКИПУФ и методологии его реализации. 4) Научно-методическое обоснование эффективности использования педагогической модели РЦКИПУФ и его экспериментальная валидация. 5) Разработка новой учебной программы на университетском курсе *Информационные Технологии* с учетом специфики учебных программ: Румынский язык и литература; Русский язык и литература; Румынский язык и французский язык; Румынский язык и английский язык, Русский язык и английский язык.

Научная новизна работы: а) определение цифровых навыков, необходимых филологу; б) определение единиц компетенции, направленных на развитие цифровой компетенции для студентов-филологов, и инструментов ИКТ, применимых к их формированию и развитию; в) разработка педагогической модели РЦКИПУФ и методологии его реализации; г) научно-методическое обоснование эффективности использования педагогической модели РЦКИПУФ и его экспериментальная валидация; е) разработка новой учебной программы на университетском курсе *Информационные Технологии* с учетом специфики учебных программ: Румынский язык и литература; Русский язык и литература; Румынский язык и французский язык; Румынский язык и английский язык, Русский язык и английский язык.

Главная решенная проблема заключается в изучение путей использования инструментов ИКТ и стратегий обучения на основе исследований, сотрудничества и совместной работы в процессе развития цифровой компетенции у студентов-филологов и разработки педагогической модели РЦКИПУФ.

Теоретическая значимость работы состоит в исследовании способов внедрения информационных и коммуникационных технологий в дидактический процесс университетского курса *Информационные Технологии* для студентов-филологов и разработке педагогической модели обучения–изучения и оценки курса *Информационные Технологии*, ориентированной на развитие цифровой компетенции студентов-филологов.

Теоретическая и практическая значимость исследования заключается в успешном утверждении и применении разработанной педагогической модели в процессе изучения курса *Информационные Технологии* для будущих учителей-филологов, ориентированной на технологической среде обучения. Разработанная педагогическая модель может быть использована в преподавании курса *Информационные Технологии* для студентов-филологов, общеобразовательные дисциплины педагогических наук, для изучения программ: Румынский язык и литература; Русский язык и литература; Румынский язык и французский язык; Румынский язык и английский язык, Русский язык и английский язык. Его можно адаптировать к курсу *Информационные Технологии* для студентов других факультетов, а также для непрерывной подготовки филологов. Также, были разработаны учебно-методические ориентиры для данного курса.

Внедрение результатов исследования: разработанная методология используется в преподавании дисциплины *Информационные Технологии* на Филологическом факультете Тираспольского Государственного Университета (г. Кишинэу) и на Гуманитарно-педагогическом факультете Кагульского государственного университета им. Б.П. Хашдеу.

ANNOTATION

Veverita Tatiana. Methodology of Digital Competence Development in the Initial Training of Language Teachers. Doctoral thesis in pedagogical sciences. Chisinau, 2019

Thesis structure: introduction, three chapters, general conclusions and recommendations, bibliography of 238 titles, 37 annexes, 141 pages of basic text, 35 figures, 40 tables. The results obtained are published in 16 scientific papers.

Keywords: digital competence, competence-based approach, interactive strategies, research-based learning, problem-based learning, project-based learning, query-based learning, learning outcomes.

Field of study: Pedagogical Sciences. School Education (on stages and educational disciplines)

Aim of the research: Theoretical foundation and development of pedagogical model of digital competence development in the initial training of language teachers (DCDITLT).

Objectives of the research: (1) Identifying the needed digital skills for philologists; (2) Determining the units of competence aimed for developing digital competence at philologist students and ICT tools applicable to their formation and development; (3) Development of the pedagogical model centered on the DCDITLT and the methodology for its implementation; (4) The scientific-methodological argumentation of the efficiency of using the pedagogical model of DCDITLT and the validation of the model efficiency through the experiment; (5) Designing a new curriculum for the university course *Information Technologies* adapted to the specific of the study programs: Romanian Language and Literature; Russian Language and Literature; Romanian Language and French Language; Romanian Language and English Language, Russian Language and English Language.

The scientific novelty and originality of the research consist in: a) identifying the needed digital skills for philologists; b) determining the units of competence aimed for developing digital competence at philologist students and ICT tools applicable to their formation and development; c) development of the pedagogical model centered on the DCDITLT and of the methodology for its implementation; d) designing a new curriculum for the university course *Information Technologies* adapted to the specific of the study programs: Romanian Language and Literature; Russian Language and Literature; Romanian Language and French Language; Romanian Language and English Language, Russian Language and English Language.

The solved scientific problem consists in the theoretical-praxiological substantiation of the efficiency of the study process of the course *Information Technologies* by developing a pedagogical model of DCDITLT, having as effect the optimization of the process of development of the digital competence

The theoretical significance of the paper consists of researching ways of harnessing of ICT tools and teaching strategies based on research, cooperation and collaboration in the process of developing digital competence of philologist students and developing a pedagogical model DCDITLT.

The practical value of the research consists in the successful approval and application of the pedagogical model focused on the advanced training environment in the process of study of the university course *Informational Technologies* in order to train the future language teachers. The developed pedagogical model can be used in the course of *Information Technologies* for philologist students in the field of Education Sciences, to study programs: Romanian Language and Literature; Russian Language and Literature; Romanian Language and French Language; Romanian Language and English Language, Russian Language and English Language. This model can be adapted to the *Information Technology* courses for students of other faculties, as well as for the continuous training of language teachers. Also, the instructional-methodical benchmarks were developed for the university course *Information Technologies*.

Implementation of the scientific results: the elaborated methodology is used in the teaching of the university course *Informational Technologies* within the Faculty of Philology at Tiraspol State University and at the Faculty of Human and Pedagogical Sciences of the Cahul State University B. P. Hasdeu.

VEVERIȚA TATIANA

METHODOLOGY FOR THE DIGITAL COMPETENCE DEVELOPMENT IN THE PROCESS
OF THE INITIAL TRAINING OF PHILOLOGICAL TEACHERS

532.02 - SCHOOL DIDACTICS

(BY STAGES AND EDUCATIONAL DISCIPLINES)

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