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***Piskurska Hanna,***
*PhD of Pedagogical Sciences, Docent,*
*Associate Professor of Language Training Department,*
*Donetsk National technical University,*
*Pokrovsk, Ukraine*
***Піскурська Ганна Вікторівна,***
*кандидатка педагогічних наук, доцентка,*
*доцентка кафедри мовної підготовки,*
*ДВНЗ «Донецький національний технічний університет»,*
*Покровськ, Україна*
***E-mail:*** *annapiskurskaya@gmail.com*
***ORCID iD*** *https://orcid.org/0000-0003-0957-8987*

***Popova Oksana,***
*PhD of Pedagogical Sciences, Docent,*
*Associate Professor of Language Training Department,*
*Donetsk National technical University,*
*Pokrovsk, Ukraine*
***Попова Оксана Володимирівна,***
*кандидатка педагогічних наук, доцентка,*
*доцентка кафедри мовної підготовки,*
*ДВНЗ «Донецький національний технічний університет»,*
*Покровськ, Україна*
***E-mail:*** *oksana.popova@donntu.edu.ua*
***ORCID iD*** *https://orcid.org//0000-0001-9030-542X*

# USING ONLINE TOOLS TO MEASURE DIGITAL COMPETENCE OF FOREIGN LANGUAGE TEACHERS

**S** *The context of the study is the global crisis caused by the COVID-19 pandemic and by the war in Europe on the territory of Ukraine, which actualized significant digital transformations in the educational processes. This article substantiates the need for measuring the digital competence of future teachers of foreign languages as an important component of their professional competence. Taking into account the theoretical research of Ukrainian and foreign scientists on the problem under study, the concept of "digital competence of foreign language teachers" is specified; the areas and levels of digital competence are described according to the Professional Teacher's Standard and the Description of the teacher's digital competence. Three broad directions for measuring digital competence are orientation in the information space, use of electronic (digital) educational resources, and application of digital technologies in the educational process. The major method for evaluating digital competence level of a teacher is self-assessment and self-reflection by means of online tools that can be used in combination. The following online tools for measuring digital competence of foreign language teachers are described in the article: the national test "Digital chart for teachers", The Digital Competence Wheel, My Digital Skills. Each online tool is characterized in terms of its components, aspects of digital competence under testing, peculiarities of usage, and results obtained after testing. It is concluded that it is important to give the teacher freedom in choosing self-assessment tools and their further use for their own professional needs, such as for building a trajectory of professional self-improvement and self-development. Further research can be focused on the methodology of enhancing English teachers' digital competence.*

***Key words:*** *digital competence; online tool; measuring digital competence; foreign language teacher*

## Використання онлайн-інструментів для вимірювання цифрової компетентності вчителів іноземних мов

**A** *Обґрунтовується необхідність вимірювання цифрової компетентності майбутніх учителів іноземних мов як важливої складової їх професійної компетентності. Авторами уточнено поняття «цифрова компетентність учителя іноземної мови»; описано сфери та рівні цифрової компетентності відповідно до професійного стандарту вчителя та Опису цифрової компетентності вчителя. Основним методом оцінювання рівня цифрової компетентності вчителя є самооцінка та саморефлексія за допомогою онлайн-інструментів. У статті описано такі онлайн-інструменти для вимірювання цифрової компетентності вчителів іноземних мов, охарактеризовано їх компоненти, особливості використання та результати.*

*Зроблено висновок про важливість надання вчителю свободи у виборі інструментів самооцінювання та подальшому їх використанні для власних професійних потреб, наприклад для побудови траєкторії професійного самовдосконалення та саморозвитку.*

***Ключові слова:*** *цифрова компетентність; онлайн-інструмент; вимірювання цифрової компетентності; вчитель іноземної мови*

***The problem statement.*** Ukraine is currently facing enormous challenges, including economic and social issues, digital transition, and important political events. The decade began with the Covid-19 pandemic and the subsequent economic and social crisis, and now it is being followed by a war in Europe on the territory of Ukraine. The education sector, like all spheres of social life, is undergoing significant changes in today's complex conditions. Various aspects of introducing digital technologies into the educational process and developing technology-related competencies are becoming more and more relevant. Thus, effective informatisation of the educational environment requires improvements in training of future foreign language teachers for using digital technologies in their professional activities, their mastery of the methodology of designing the educational process in the form of a lesson of a certain type based on the use of digital educational resources. Future teachers must confidentely use modern technologies their professional activity. The primary requirement for the training of modern educators should be a high level of their digital competence.

***Analysis of recent studies and publications.*** The issues of formation of professional and digital competence, effective use of information technologies in education, and training of future teachers for professional activities by means of digital educational technologies have been investigated by many scientists. Thus, the theoretical issues of forming digital competence and digital culture of future teachers are reflected in the scientific works of L. Havrylova [3], R. Hurevych, L. Kartashova, N. Bakhmat [5], N. Morze [9; 10], O. Ovcharuk [11], O. Zhernovnykova, L. Peretiaha [4] etc. A thorough analysis of the possibilities of using information and digital technologies in the educational process and professional activity of teachers specializing in various fields is carried out: Mathematics (O. Romanovskyi, V. Hrynova), Computer Science (O. Spirin, T. Vakaliuk), Humanities (N. Volkova, O. Lebid [2]).

The question of evaluating digital competence is scientifically substantiated by N. Morse, T. Vakaliuk [9; 19], A. Khateeb [13], F. Husain [15] and others. In Ukraine, a digital competence self-evaluation tool and recommendations for teachers are developed by V. Bykov, O. Hrytsenchuk, O. Dubovyk, Iu. Zavalevskyi, I. Ivaniuk, O. Kravchyna, and O. Ovcharuk [11].

Therefore, modern scientists pay special attention to the definition of the main terms, the analysis of the structure of the teacher's digital competence, as well as the process of its formation and evaluation. However, the question of measuring the digital competence of foreign language teachers by means of online tools still requires further consideration.

***The research goal.*** Given this the purpose of the article is to determine informal approaches to the evaluation of digital competence and to analyze the content of online tools for evaluating digital competence of English teachers.

***The theoretical backgrounds.*** The experience of European countries testifies to the significant impact of digital competences of the population on the development of EU economy and competitiveness at the international level. In 2022, the European Parliament and the EU Council adopted the updated The Digital Competence Framework for Citizens [17], which acts as a complete reference material to the DigComp framework consolidating previously released publications and user guides. Digital competence is recognized as one of the eight key competences for life and activity of EU citizens. It was first defined in 2006, and after an update of the Council Recommendation in 2018, it reads as follows: "Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking" [14].

Ukraine is also undergoing a process of digital education reform, taking into account modern complex realities and European experience. Regarding the term "digital competence", there is no single interpretation for defining this type of competence among scientists.

In most cases, the terms "digital competence", "digital literacy", information and digital competence, information and communication competence are used as synonyms.

In 2021, the Cabinet of Ministers of Ukraine approved the Concept for the Development of Digital Competencies, which defines the priority directions and main tasks for the development of digital skills and digital literacy of citizens. In order to implement the plan of measures outlined in the Concept, the Description of the Teacher's Digital Competence [9], Methodical Recommendations on the Formation of Information and Digital Competence of Pedagogical Staff [8], and the online tool for evaluating the professional digital competence of teachers have been developed.

According to the professional standard [7], the information and digital competence of the teacher is one of the basic competences assigned to the "A" group of labor functions, which characterize the professional identity of the teacher through general competences and competences related to their personal and professional qualities, knowledge, as well as professional growth.

The professional standard of the teacher gives a structured and specified description of the content of information and digital competence. Besides, 3 broad directions of information and digital competence are distinguished:

1) orientation in the information space,

2) use of electronic (digital) educational resources,

3) application of digital technologies in the educational process.

Specific knowledge, abilities, and skills that a teacher should possess are defined within these directions.

According to the description of the digital competence of a teacher by N. Morze [8], there are 3 levels (beginner, integrator, expert) described in 5 areas:

1. A teacher in a digital society
2. Professional development.
3. Use of digital resources.
4. Training and evaluation of students.
5. Formation of students' digital competences.

Undoubtedly, the formation of digital competence of future foreign language teachers is an important component of their professional training. Future teachers must be able to search, select and analyze the latest digital resources, to exchange experience and knowledge with colleagues using virtual educational platforms. Thus, the future teacher's ability to use ICT in teaching a foreign language forms their digital competence.

The use of digital technologies in teaching a foreign language changes traditional forms of education and increases the educational activity of students, optimizes the assimilation of lexical and grammatical material, and also helps to overcome the monotony and routine inherent in classes while developing language and speech competences of students.

It is well known that the Internet is one of the main and useful tools for teaching a foreign language. Teachers can use it to gather information to improve and diversify their lesson plans. They can subscribe to various newsletters related to IELTS, TOEFL and exchange information with other teachers. Also, foreign language teachers can subscribe to e-magazines and follow new trends in English language teaching by finding new or interesting publications. According to T. Koval, ICT tools provide an opportunity to solve the following urgent issues: to implement the latest information technologies in education; to improve the individual work of students in the information environment and the Internet; to improve education, to accelerate the learning of a school course, to make the educational process more diverse [20].

It should also be noted that, according to I. Buchenko [1], the use of ICT by a foreign language teacher helps to solve a number of didactic tasks, in particular: listening (using authentic sound recordings on the Internet); monologue and dialogue speech (using problematic discussion of issues); active and passive vocabulary (using the vocabulary of the modern English language which reflects a certain stage of development of the people's culture, social or political system of society); creation of the most natural language environment in the class; more complete realization of the principle of visibility; deepening knowledge of all types of speech activity (speaking, listening, reading, writing); vocabulary expansion using the lexis of a modern foreign language.

The use of ICT technologies by a foreign language teacher provides many advantages, namely: the ability to easily adapt educational materials to the circumstances and needs of students; ICT allows you to use the latest / daily news, authentic materials; the possibility to combine / use alternately (basic) skills (text and image, audio and video, clip), lessons



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become more interesting, which helps to engage students in learning; ICT allows you to focus on one specific aspect of the lesson [1].

Also, the use of ICT requires from the future teacher to have excellent computer skills. However, despite certain difficulties, the use of ICT has significant advantages and prospects, which can be achieved by introducing these technologies in the lesson to develop the information and digital competence of the future teacher, as required by the "New Ukrainian School".

The main method to evaluate the level of digital competence of a teacher is to compare the requirements of the Professional Standard of the teacher of the relevant qualification category [7] and/or the characteristics of the levels of digital competence according to the Description [9] with their own level of competence with the help of reflection, consultative help of colleagues from the professional community.

***The results and discussion.*** To evaluate their own current level of digital competence, foreign language teachers can use the following teacher self-assessment tools:

1. "Digital Chart for teachers" (national test on the Diia. Digital education platform).
2. Digital Competence Wheel.
3. MyDigiSkills (My digital skills).

These tools can be used separately or together for a more detailed self-assessment.

The tool "Digital Chart for teachers" [12] was created by experts of the Academy of Digital Development. It is based on the framework of professional competencies in accordance with the Order of the Ministry of Education and Culture of Ukraine No. 38 of January 15, 2019. With the help of the "Digital Chart for Teachers" 21 professional digital competences, grouped into 5 areas, can be evaluated:

- a teacher in a digital society;
- professional development;
- use and analysis of digital resources;
- training and assessment of students;
- development of students' digital competence.

The test uses standardized testing technologies. A criterion-oriented type of measurement has been established, the testing procedure has been regulated, the instructions have been unified, as well as the means of recording results, processing and saving them.

To pass the "Digital Chart for Teachers" you need to register on the "Diia. Digital Education" platform (https://osvita.diia.gov.ua), select "Digital Chart for Teachers" and start testing.

The questions are formed in such a way as to assess 3 levels of competence in each direction. The test takes 30-40 minutes. Based on the results of passing the national digital literacy test for teachers, the teacher receives an electronic certificate, which states:

- the general level of digital skills in accordance with the description of the digital competence of a teacher;
- total score;
- the level of competence in each of the 5 areas with the corresponding number of correct answers.

Thus, teachers can determine the areas in which they need to improve the level of digital skills and knowledge.

The Digital Competence Wheel tool was developed by the Center for Digital Dannelse, which has been specializing in digital development and digital competences for more than 10 years.

The purpose of the Wheel is to provide an overview of digital competencies and to suggest specific tools by which these competencies can be enhanced and improved.

The Digital Competence Wheel is theoretically based on the major EU research project called DIGCOMP, which stems from the fact that the European Parliament named digital competence as one of the eight core competences for lifelong learning.

When mapping the digital competencies in the Digital Competence Wheel, certain methodological and theoretical considerations were taken into account. Understanding of the concept of digital competence is so diverse that there is no universally accepted definition. What they all have in common is that it is not about access to technology and its use, but about the ability to use it in a meaningful way – for life, work and learning [18].

There are two main approaches to this wide scope of terms and definitions:

A) through a high conceptual level, describing topics at an abstract level that is more impervious to technological change;

B) recognition of specific knowledge, skills and competences important to the overall goal: recognition of specific core knowledge, skills and attitudes that can serve to assess the capacity of people in a defined area and initiate targeted training.

The latter approach was chosen to represent the Digital Competency Wheel because it methodically supports this goal. However, this approach is inherently more dependent on current digital tools and possible actions and, therefore, requires regular review.

The test questions are divided into groups to evaluate four areas of digital competence: information (storage, search, critical evaluation, self-service); communication (active participation, collaboration, social awareness, media choice); production (production and sharing, digital exploration, automation, configuration); safety (law, identity management, data protection, health). The test takes 20-30 min. After testing, the teacher receives an electronic report showing the scores in each four digital competence areas and the Total Score representing the summative evaluation of the score across all competences and questions.

The Total Score indicates one of the following levels of the digital competence:

Users on Level 1 (foundation) are able to perform simple tasks with guidance.

Users on Level 2 (foundation) are able to perform simple tasks autonomously and with guidance where needed.

Users on Level 3 (intermediate) are able to perform routine and other well-defined tasks. They can also solve straightforward problems on their own.

Users on Level 4 (intermediate) are able to perform well-defined tasks independently. They can also solve non-routine problems on their own.

Users on Level 5 (advanced) are able to perform many different tasks and guide others in doing the same. They can also solve most problems on their own.

Users on Level 6 (advanced) are able to perform tasks and identify the most appropriate solution when solving most problems. They are also able to adapt solutions to others in a complex context.

Users on Level 7 (highly specialised) are able to perform tasks and identify the most appropriate solution, even when solving complex problems, where the solution is not clearly available. They are also able to adapt and integrate solutions into their professional practice.

Users on Level 8 (highly specialised) are able to perform tasks and identify the most appropriate solution, even when solving complex multifaceted problems, where the solution is not clearly available. They are also able to adapt and integrate as well as propose new solutions and processes into their professional practice.

According to the obtained results, teachers can determine areas in which they need to improve the level of digital skills and knowledge.

The above-mentioned online tools for evaluating the level of digital competence require the teacher to make a conscious, critical and generalized assessment of their digital behavior. However, the Self-assessment tool on Digital Skills and Jobs Platform contains quite practically-oriented questions which are aimed at learning more about personal digital skills, and importantly, discover what the next step to improve them would be.

MyDigiSkills [16] is an online tool that allows teachers to self-reflect on their digital competence using the DigCompSat. The test is available in 11 European languages, including Ukrainian. MyDigiSkills helps teachers to better understand their level of digital skills based on knowledge, skills and attitude in each of the five areas of the European Digital Competence Framework for Citizens, known as DigComp. The system gives feedback on levels of digital skills in these five areas. Each of the 82 questions requires a teacher to answer simple statements with responses such as “I have a good understanding of this” or “I can do it with help”, for example. Some questions ask about skills, some ask about knowledge and some ask about attitude to digital technology. The test takes around 20 minutes to complete, and the teacher will get a report on the levels of digital skills at the end. On the basis of the report, teachers can analyse their level of digital skills, discover their gaps and needs in digital skills, and access opportunities to improve their digital skills.

***Conclusions and prospects for further research.*** Therefore, in Ukrainian educational environment, measuring English teachers’ digital competence is mainly based on informal approach. Self-assessment is an important and effective form of monitoring the level of digital competence among teachers which encourages improvement of the existing skills. Measuring the level of the teacher’s digital competence is carried out through the use of variety of online self-assessment tools which require a certain level of self-reflection of one’s digital knowledge, skills and behavior. Further research can be focused on methods and techniques of enhancing English teachers’ digital competence.



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