BASIC REQUIREMENTS FOR INFORMATION AND COMMUNICATION TECHNOLOGY LITERACY OF UNIVERSITY TEACHERS

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A R T I C L E I N F O.	**Abstract**
Keywords: higher education system, information and communication technologies, university teacher, information and communication technology literacy.	This article describes the need for university teachers to have a sufficient level of knowledge, skills, and abilities in the field of information and communication technologies. The article presents the basic requirements for information and communication technology literacy of university teachers developed on the basis of the author's pedagogical experience in teaching special disciplines.

Introduction

The Republic of Uzbekistan is conducting many reforms in the higher education system, including introducing advanced standards of higher education, increasing the role of independent work and research activities of students, paying more attention to internships at enterprises. Our country is also implementing comprehensive measures to develop actively the digital economy, as well as the widespread introduction of modern information and communication technologies in all sectors and areas, primarily in public administration, education, healthcare, and agriculture. In modern conditions of digitalization of all spheres of society, including the higher education system, teachers of higher educational institutions must have a certain level of knowledge in the field of information and communication technologies and be able to apply them in practice [1-4].

To organize the educational process, improve the quality of teaching and obtain high educational results, university teachers must have a sufficient level of knowledge, skills and abilities in the field of information and communication technologies. To clarify the basic requirements to the information and communication technology literacy, it is necessary to answer several questions:

➢ what skills should university teachers have to create teaching materials and educational content?

➢ how teachers should communicate with students using information and communication technologies?

➢ how teachers can work with databases of scientific publications, legislative documents, and digital libraries?

➢ how teachers can share their content with other educators and the general public?

This paper makes an attempt to answer these questions based on the analysis of literary sources and the study of the author's experience in teaching special disciplines.

Main part

University teachers should have a sufficient level of knowledge, skills, and abilities in the field of information and communication technologies. Let's discuss what university teachers should be able to do based on the requirements set by university managers, students, their parents, and future employers [5-16]:

1. Use of text editors. Each teacher must be able to use the basic programs included in the basic set of Microsoft Windows programs, including typing texts in text editors, for example, in Microsoft Word. The teacher must be able to use these programs in the preparation of educational and methodological materials, lecture notes, writing textbooks, teaching aids, scientific articles, and other works.

2. Using spreadsheet editors. Every teacher at a higher education institution should be able to work with various spreadsheet editors, for example, Microsoft Excel. The range of capabilities of this application program is huge, ranging from preparing simple tables and diagrams to carrying out complex statistical and econometric calculations. As basic skills of teachers, it is necessary to work with this program, have the ability to prepare a table, carry out simple operations with built-in functions, and make a diagram. To become an advanced user of this program, the teacher needs to study all the capabilities of the program, including the use of the Data Analysis Package for econometric calculations;

3. Use of programs for preparing and demonstrating presentations. Teachers conduct lectures and practical classes. They must use special programs to clearly demonstrate educational material, for example, Microsoft PowerPoint, which allows them to create a presentation, format it in accordance with the goals and objectives of the teacher, and organize the display of educational material.

4. Use of modern browser programs. It is impossible to imagine the pedagogical or scientific activities of teachers without the use of educational, statistical or information sites on the Internet. To successfully search for the necessary material, the teacher must be able to use one or more browsers, for example, Google Chrome. Also, the teacher must be able to use official data and other information posted on the websites of government authorities, including statistical data.

5. Use of electronic databases of international publications Web of Science, Scopus or ScienceDirect. Scopus is the largest single database of abstracts and citation information for peer-reviewed scientific literature, with built-in tracking, analysis and data visualization tools, indexing more than 20,000 titles from a variety of publishers. Web of Science is an Internet search platform that combines abstract databases of publications in scientific journals and patents and covers materials in the natural sciences, technology, social sciences, humanities and the arts. The platform also has built-in capabilities for searching, analyzing and managing bibliographic information. The ScienceDirect full-text database is positioned as Elsevier's leading information platform for scientists, teachers, students, medical specialists and R&D departments of industrial enterprises, which contains 25% of the world's scientific publications. ScienceDirect's multidisciplinary platform provides comprehensive coverage of literature from all fields of science, providing access to more than 14 million publications from 2,500 scientific journals and more than 37,000 books from Elsevier, as well as a huge number of journals published by prestigious scientific societies. Every teacher should be able to search the Scopus and Web of Science databases or ScienceDirect by article titles, journal names, year of publication and other criteria. Also, teachers should try to publish the results of their scientific activities in journals indexed by the specified databases.

6. Creation of electronic training courses. The teacher must be able to work with various programs that help quickly and easily develop an electronic course based on previously prepared presentations, as well as effectively organize control of students' knowledge. An example of such a program is iSpring Suite 8, which is a modern tool for rapid development of electronic courses, in which

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everyone can easily start working without prior training.

7. Using online translators and online dictionaries. In his activities, a teacher may be faced with the need to translate certain sources from a foreign language into native language and vice versa. Thus, he should be able to use various sites that specialize in translating texts and documents from one language to another, such as Google's free service, which allows to translate words, phrases and web pages from English into more than 100 languages and back. Teachers also need to be able to use various online dictionaries, for example, the Multitran dictionary located on the website www.multitran.ru.

8. Search in various electronic libraries. The teacher should be aware of again conducting a literary search in the CyberLeninka or eLIBRARY.RU electronic libraries. CyberLeninka is a scientific electronic library built on the principle of open science, the main objectives of which are the popularization of science and scientific activity, public control of the quality of scientific publications, and the development of interdisciplinary research. eLIBRARY.RU is the largest electronic library of scientific publications in the Russian Federation, which has rich capabilities for searching and analyzing scientific information and is integrated with the Russian Science Citation Index (RSCI). These electronic libraries are an invaluable source of knowledge for students and teachers teaching special subjects in Russian.

The teacher can assign the task of searching and reading one or more scientific articles as an assignment for independent learning of students. Teachers can give students the task of analyzing the content of articles and answering the following questions:

➢ what is the title of the article?

➢ who is the author(s) of the article?

➢ in which scientific journal (collection of conference materials) the scientific article (thesis) was published;

➢ what information is provided in the abstract of the scientific article?

➢ what are the keywords?

➢ do these keywords correspond to the title of the article and the text of its abstract?

➢ what sections does the article consist of? What are their names?

➢ how is the list of used literature compiled? Based on your study, can you tell which sources were used by the authors of the article and why?

➢ based on studying the title of the article, abstract, keywords and list of references used, can you predict or predict what the main content of the article will be about?

➢ what new information did you gain from reading the article?

➢ does the text of the article complement, confirm or refute your previously acquired knowledge?

➢ are there any controversial issues in the article that you would like to discuss during the practical lesson?

➢ how do the authors of the article justify their opinion?

➢ how can you use the information received in your further educational or scientific work?

➢ what new knowledge, skills and abilities did you gain while performing this type of independent work?

9. Ability to work with online legislative databases. The activities of ministries, state organizations, commercial enterprises, and various economic entities are regulated by various regulatory

documents, knowledge of which is necessary for teachers of various disciplines. A teacher at a higher educational institution must be able to use materials from the National Database of Legislation of the Republic of Uzbekistan www.lex.uz, read the contents of regulatory documents regularly.

10. Ability to work in various educational environments. Every teacher should know and be able to work with modern educational environments, including the modular object-oriented dynamic control environment Moodle, the Platonus or HEMIS systems.

11. Recording video lectures. A teacher must be able to prepare video lectures for his students for posting on a personal YouTube channel, Internet site or Telegram channel. Video lectures could be prepared on each topic of the academic discipline using any of the free programs available on the Internet, for example, Bandicam, Movavi Screen Capture or Fast Stone Capture.

12. Work on social networks. The teacher must communicate with his students on a daily basis, including the use of social networks, Telegram, Whatsapp or email. For example, teachers open a special Telegram group for each group of students, through which they actively communicate with students, duplicate the sending of assignments and receiving student responses.

13. Ability to work with video conferencing programs. University teachers must be able to conduct online conferences, for example, using ZOOM, Microsoft Teams, Google Meet which is a cloud platform for conducting online video conferences and video webinars in high definition format;

14. Preparation of electronic textbooks. One of the modern trends in the creation of educational and methodological materials is the transition from paper to electronic media, including the preparation of electronic textbooks. Each teacher must be able to have minimal skills in working in special programs.

15. Use of modern digital platforms and online services. Modern digital platforms and online services like Kahoot, Quizizz, Wizer.me, LearningApps, OnlineTestPad and others help teachers to create interactive exercises, test simulators, interactive games to improve the quality of teaching.

16. Creation of own Internet site, YouTube or Telegram channels. To demonstrate his achievements, the teacher can create his own Internet site, YouTube or Telegram channel and post publications or videos. Such sites or channels may contain books, presentations, training courses, articles, notes, videos, stories, and other teaching materials.

Conclusion

University teachers should have a sufficient level of knowledge, skills, and abilities in the field of information and communication technologies. Improving the knowledge, skills, and abilities of teachers of higher educational institutions will help improve the quality of teaching in the higher education system, including:

➤ improving the quality of educational and methodological materials of the taught subjects;

➤ increasing the quality of teaching by using modern digital platforms and online services to create interactive exercises, test simulators, and interactive games;

➤ continuous improvement of the professional competence of teachers through the use of various databases of scientific publications, electronic libraries and other sources of information;

➤ creating new ways for teachers to interact with students, as well as other participants of the teaching process;

➤ Providing teachers with the opportunity to realize their pedagogical and creative potential.

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