

# IT - Education In The Context Of Educational Activities

Olga Marchenko <sup>†</sup>, Margaryta Noskova<sup>††</sup>, Igor Fedorenko <sup>†††</sup>, Olena Semenog<sup>††††</sup>,  
Myroslava Vovk<sup>†††††</sup>, Ruslana Romanyshyn<sup>††††††</sup>

<sup>†</sup> Department of Sociology and Psychology, Kharkiv National University of International Affairs, Ukraine

<sup>††</sup> Department of Pedagogy and Innovative Education, Lviv Polytechnic National University, Ukraine

<sup>†††</sup> Department of Information Systems and Technologies, National Pedagogical Dragomanov University, Ukraine

<sup>††††</sup> Head of the Chair of Ukrainian Language and Literature, A. S. Makarenko Sumy State Pedagogical University, Ukraine

<sup>†††††</sup> Department of Content and Technologies of Pedagogical Education, Ivan Zyazyun Institute of Pedagogical and Adult Education of the National Academy of Educational Sciences of Ukraine, Ukraine

<sup>††††††</sup> Department of Professional Methods and Techniques of Primary Education, Vasyl Stefanyk Precarpathian National University, Ukraine

## Summary

The article is based on a model, in the context of which there are two fundamental building blocks of basic library skills and skills in the use of information technology. The former are formed within the framework of educational programs for users of academic libraries, the latter are formed within the framework of initiatives such as the European Computer Driving License. Between the basic and the highest levels of the concept of "information literacy" there are seven heading skills and attributes, the repeated practice of which leads from the position of a competent user to an expert level of reflection and critical awareness of information as an intellectual resource. Freshmen will likely be at the beginning of the arrow, probably practicing only the first four skills, while graduate students and young scientists will be closer to the end and will use seven skills.

### Key words:

*information technology, communication technologies, education system, educational process.*

## 1. Introduction

The emergence of the Internet, as well as many other electronic and digital resources, has delivered a number of new issues before higher education. Some students use the Internet as the main alternative to traditional literary sources. In this context, they face the problems of origin, accuracy and reliability of the material found, which are mostly unnecessary within the framework of the usual forms of academic publishing activities. The quality of information contained in books, magazines and other types of printed products was used to be provided for various factors: respected publishers who have recognized academic merit to the authors recommended by the tutorials to the texts, expenditures on the library, designed to provide access to all necessary materials. However, in relation to Internet resources, such quality assurance mechanisms do not work. The user is forced to evaluate them independently.

Information technologies made the receipt and use of information artificially light. Having obtained all the information to the standard format (recently more and more - to the format of web pages), they prevent us from recognizing the existence of differences between how information is made, and what type of information is obtained in the end.

The Internet also puts us in the face of new ethical problems, complex copyright issues, ownership of information and plagiarism.

The study of the "Installation of students in relation to electronic resources", conducted by Catherine Ray and Joan Day, revealed that "a significant number of students are obvious. Leave the university walls, not possessing action skills in the society based on information." Becta approves the need to "make students critical consumers of information" [5].

In the USA in the influential report of the American Library Association, "the need for all people to be information competent, which means that they are not only able to determine when information is required, but can also detect, identify, evaluate and effectively use the information necessary to make a specific decision or To resolve the urgent problem" [6].

In the US, the National Information Literacy Forum was established, in which many educational institutions and organizations participate.

Developing this idea, many analysts consider what is called "information literacy", as allowing individuals to not only effectively use information and information technology and adapt to their ever-changing conditions, but also to critically comprehend the information industry and the information society as a whole [7].

Shapiro and Hughes spend the parallel between the "information literate" man and the old idea of the "educated" person. Another author, describing the information as the "product necessary for survival", claims: "We intend to teach our users to become

independent and competent consumers of information in the process of continuous learning throughout life" [8].

However, there are opposite trends in different sectors of higher education. For example, BECTA (British Educational Communications and Technology Agency) has long studied information skills development as a recognized aspect of the national curriculum for primary and secondary schools [1, 3].

Corrall distinguishes between information technology skills and "information skills."

Information technology skills include:

- basic skills (using the keyboard, mouse, printer, operations with files and disks);
- possession of standard software (word processing, creation of tables, databases, etc.);
- use of network applications (e-mail, Internet, web browsers).

Information handling skills, according to Corrall, include mastery of information sources, evaluation criteria, search methods, manipulation techniques, and presentation methods.

This division is accepted by many who are trying to counter the tendency to equate computers with information and thereby misidentify computer literacy and information literacy. "This is a dangerous myth because it assumes that information is only something that can be stored and processed using a computer" [4].

This does not mean that information technologies are not the main elements of modern ways of handling information. Information technology allows us to access information resources. Information systems organize information resources in such a way that they become easily accessible. The need to understand how these systems are built and how they can be accessed today is faced not only by a limited circle of specialists, but also by all participants in the educational process in universities.

## 2. Theoretical Consideration

In higher education, this issue has several lines:

The first line, related to "research skills", in which students should feel the need in the process of carrying out research at the level of higher education, that is, the line associated with the "tools" of the student;

The second line indicates that students should be fully prepared to fulfill their duties, no matter what area of professional activity they choose after graduation.

The first line involves skills such as the ability to use the library of the university and its resources to continue their research, the ability to carry out a "literature search" of any type of depth and complexity that is required within a particular academic / disciplinary area, and the ability to demonstrate all this in a satisfactory way to tutors and experts. in any required form by quoting and referencing

the sources read and the information collected. This approach is built around the idea of a "competent student," that is, a student who is willing to function effectively as an integral part of the academic community.

Within the second line, "information skills" can be defined more broadly, including in them, in addition to those already listed, the attributes of awareness and understanding of how information is produced in the modern world, a critical attitude to the content and validity of information (associated with elements of critical thinking in general ), some practical ideas about how information is acquired, managed, distributed and applied in the real world, in particular knowledge of how relevant professional groups use information in the workplace, in business and in the world of culture and art. This "information" can be textual and printed information, but will also include other forms of information communication, both formal and informal, both planned and random, both interpersonal and mediated by information technology. It is at this level of information skills that the term "information literacy" is appropriate.

Seven headline skills

Task Force SCOUNL (Society of College, National and University Libraries) identifies seven heading types of information skills [9].

1. Ability to be aware of the need for information.
2. Ability to highlight how you can fill the "gap" in information:
  - through knowledge of the relevant types of resources, both print and non-print,
  - due to the selection of resources "best suited" to the task at hand,
  - due to the ability to understand those conditions that affect the availability of sources.
3. Ability to design information discovery strategies:
  - the ability to articulate information that needs to be discovered through resources,
  - the ability to develop systematic methods suitable for meeting this requirement,
  - the ability to understand the principles of designing and creating databases.
4. Ability to detect and access information:
  - the ability to design appropriate search techniques (e.g. using Boolean principles),
  - the ability to use communication and information technologies, including international academic networks,
  - the ability to use appropriate bibliographic and annotation services, citation indexes and databases,
  - the ability to use awareness raising techniques to keep abreast of up-to-date data.
5. Ability to compare and evaluate information obtained from various sources:
  - awareness of bias and authority issues,

- awareness of the process of abstracting scientific publications,
  - knowledge of the appropriate way to extract information, including the required information.
6. Ability to organize, apply and transmit information in other ways appropriate to the current situation:
    - the ability to create bibliographic references in project reports and dissertations,
    - the ability to create a personal bibliographic system,
    - the ability to apply information to solve pressing problems,
    - the ability to effectively communicate information using appropriate intermediaries,
    - understanding the problem of copyright and plagiarism.
  7. Ability to synthesize and collect existing information, creating new knowledge on its basis.

The Information Skills Model shows the relationship between a "competent user of information" at a basic level and the much more advanced idea of information literacy, and also shows the process by which information users progress from competence to expertise by practicing skills. Only those who have reached the final point will practice all seven skills.

The model is built on two fundamental building blocks of basic library and information technology skills. The former are formed within the framework of educational programs for users of academic libraries, the latter are formed within the framework of initiatives such as the European Computer Driving License. Between the basic and the highest levels of the concept of "information literacy" there are seven heading skills and attributes, the repeated practice of which leads from the position of a competent user to an expert level of reflection and critical awareness of information as an intellectual resource. Freshmen will likely be at the beginning of the arrow, probably practicing only the first four skills, while graduate students and young scientists will be closer to the end and will use seven skills.

Within the framework of higher education, the concept of information literacy should include the idea of an individual who is able to contribute to the synthesis of existing information, further develop ideas derived from such a synthesis, and, finally, create new knowledge in a specific subject discipline.

"Few academic library services today do not consider information skills training as one of their important functions" [4, 10].

This is noticeable in those areas of activity carried out in this area, which can be distinguished on the basis of data collected by the Department of Library and Information Statistics at Loughborough University [11]. The average volume of hours spent by library staff on initial and further orientation of students at SCOUNL institutes has increased over the past 6 years from 1 pm to

22 hours (per 100 students). These indicators differ, for example, in "new universities", where the numbers are respectively 22 and 28 hours, while for institutes included in the CURL (Consortium of Research Libraries) - 6 and 17. Although the amount of "training" differs from university to university, the general trend is quite clear. The number of users receiving orientation or post-orientation increased from 36% to 46% on average, while in the "new" universities it remained the same at 60%.

Institutions of higher education are also involved in the development of information skills within the framework of teacher training programs.

Task Force SCOUNL investigated the reasons for this growth through an informal e-mail survey. Metropolitan University, Liverpool John Moores University, Middlesaxon University, Reading University, Thames Valley University and the Universities of Sussex and Westminster) [2, 9].

The results of this survey were as follows. New technologies are cited by most respondents as the main reason. Other reasons include student diversity, changes in teaching and learning that require more flexible pedagogical forms, a modular approach, project-based methods and an orientation towards building 'ability', and an awareness of the increasing complexity of resources that students are expected to access. which is often accompanied by the recognition of the teaching staff that they themselves also need help to find their way in this "maze". Some replies mentioned the increasing involvement of library staff in the transmission of some aspects of teaching at the postgraduate and research level. In some institutions, the shift towards equipping students with basic information technology skills has sometimes required library and information staff to engage more generally in skills development. It is often noted that there is a need to reduce basic reference services in libraries by equipping students with the skills to act more independently and independently. From the answers to the questions, it becomes clear that the growth of work related to the formation of information skills is caused by factors that are determined, on the one hand, by demand, and, on the other, by the development of technologies. Some library services also recognize the need to demonstrate the value of donating money from "sponsors" in resources and services. In certain cases, such actions are perceived as part of an overall approach to maintaining the quality of the student experience. HEIs assess the importance of information skills in strategic planning for the development of their library and information services in different ways.

The scope of information skills development across universities and colleges also varies. Usually there is something like "orientation" sessions - getting to know the library and its services, their location, possibilities and

“procedural” topics (how do I get a book, how do I get a password for?). The number and content of post-orientation classes vary from university to university. Cohort-specific subject lessons are common, along with numerous examples of their inclusion in subject or modular curricula. Some services conduct regular “visit” sessions to optimize user experience. Small university services see these activities as a way to expand the library beyond the physical walls to include “virtual” sources. For example, London-based universities provide information on other available London libraries. Classes are also conducted on specialized types of information (for example, information about Europe, legal information). While the volume of this activity is impressive in itself and is constantly increasing, it is not always carried out within the framework of the priority task of training “information literate” people. Much is left to the initiative and actions of small groups of interested employees (both librarians and subject teachers) who work independently and are not connected with each other within the framework of a common structure.

Those librarians and information workers who are engaged in teaching are essentially “subject librarians” or something like that. Some universities today see this as the main job of subject librarians. Individual universities have created elements of “information services” within their structures, the task of which is to support and train users.

Many of those with whom the informal survey was conducted did not see the current need for personnel engaged in this type of work to receive formal training themselves. In a significant number of services, however, there is a clear awareness that library staff should be “trained and taught how to acquire knowledge”. The number of staff who have already been trained as faculty members naturally varies from institution to institution. The Edulib eLib program (part of the overall Digital Libraries Program funded by the Joint Committee on Information Systems, which includes various UK higher education foundations) contributes to placing librarian teaching in the context of theory and accepted educational practice.

Some respondents believed that the emergence of the Institute of Learning and Teaching would affect both subject teachers and library and information workers. “Until now, most librarians have viewed their teaching role as an insignificant part of their professional life and therefore did not feel the need to intellectualize the process,” writes Richard Biddiscombe, and then describes the attractive change in attitudes that can come when the teaching staff becomes learn from fellow librarians through formal qualification training. “Addressing the learning needs of prospective lecturers enrolled in the course will not only be important, it will change the attitude of professional information workers towards academic staff” [10].

One respondent emphasized that this approach to student support (that is, when subject tutors themselves are better equipped to help students develop similar skills) is both more effective and more realistic in terms of staff-student interaction.

Where there is a variety of practice and context, it is difficult to provide a clear picture of the unfolding activity. However, there are several key elements. Literary sources and practitioners alike speak of the absolute necessity for mastering information skills to be part of subject-specific curricula.

It should be noted that in this regard, the work currently being carried out by the Quality Assurance Agency for Higher Education in the field of curriculum development includes a recognition of the importance of elements of information handling that correspond to the subject disciplines under consideration [12].

These trends are also noticeable in other countries. There are examples of university-specific initiatives in the United States and Australia that are developing a strategic approach to information literacy education. The University of Griffiths in Australia is developing an Information Literacy Curriculum that argues that collaboration is at the core of this approach. “Teaching information literacy implies a division of responsibility between all educational workers and information providers” [13].

This paper argues that “effective information literacy education depends on collaboration between information professionals and subject matter experts to innovate curricula that fosters information literacy.”

Other principles for building information skills development programs include the following:

- Programs should aim to be suitable for all types of learners at all possible levels of learning.
- Programs should have clear objectives and be built on solid pedagogical foundations.
- Programs should include quality improvement and feedback mechanisms.
- Programs should attempt to measure initial and final competence and thereby demonstrate their effectiveness.
- Programs must be effectively managed, including financially.
- Programs must make effective use of new technologies and other innovations.

Many of these principles do not differentiate between information skills programs and any other educational content provided.

Integrating information skills into curricula requires the collaboration of university leaders, faculty, tutors, human resources specialists, librarians and information workers. The Chief Executive Committee of the Universities and Colleges Staff Development Association has created a task force to implement this approach. The establishment of the Institute for Learning and Teaching, as a professional body

for those who teach and provide learning, provides an ideal context in which the integrative work needed to build information literacy is recognized and implemented. Libraries are involved in this process in different ways - providing relevant materials, assisting in their use, providing opportunities for joint partnerships. The performance of libraries must be enhanced and evaluated in new ways, for example in terms of impact on educational and research outcomes.

## Conclusions

Thus, information technology is not the main element of modern ways of handling information. Information technology allows us to access information resources. Information systems organize information resources in such a way that they become easily accessible. The need to understand how these systems are built and how they can be accessed is today not only for a limited circle of specialists, but also for all participants in the educational process in universities.

## References

- [1] Corral, S. (1998). Key skills for students in higher education. *SCONUL Newsletter*, 15, 25-29.
- [2] Lazorko, O, Zhanna, V., Yahupov, V., Valchuk-Orkusha, O., Melnyk, I., & Sherman, M. (2021). The Safety of Professionalization Subjects in Psychological and Neuropsychological Aspects. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 12(1), 19-39.
- [3] Meera N. S. Quality education for all? A case study of a New Delhi government school, *Policy futures in education*, 2015, № 13 (3), pp. 360–374.
- [4] Mykhailo Sherman, Yaroslav Martynyshyn, Olena Khlystun, Liubov Chukhrai, Yuliia Kliuchko, Uliana Savkiv. Optimization of the Educational Environment Using Information Technologies. *IJCSNS International Journal of Computer Science and Network Security*, VOL.21 No.4, April 2021. pp. 80-83.
- [5] Alfred P. Rovai, Linda D. Grooms The relationship of personalitybased learning style preferences and learning among online graduate students. *Journal of Computing in Higher Education*. - 2004. - №16, Issue 1. - pp 30- 47.
- [6] Andrea Santo-Sabato, Marta Vernaleone From the First Generation of Distance Learning to Personal Learning Environments: An Overall Look. *E-Learning, E-Education, and Online Training*. - 2014. - №138. - C. 155-158.
- [7] Shapiro, J., & Hughes, S. K. (1996). Information literacy as a liberal art: Enlightenment proposals for a new curriculum. *EDUCOM Review*, 31(2), 31-35.
- [8] McMillan R. Man Builds Twitter Bot That Humans Actually Like. *Wired*. URL: [wired.com/2012/06/twitter\\_arm/](http://wired.com/2012/06/twitter_arm/)
- [9] Mason, R. *Globalising Education: Trends and Applications*. London: Routledge, 1998. P. 37.
- [10] Biddiscombe, R. (1999). Developing the learning support role: Some of the challenges ahead. *SCONUL Newsletter*, 16, 30-34.
- [11] Rampton S., Stauber J. *Trust us! We're experts: How industry manipulates science and gambles with your future*. Tarcher. 2002.
- [12] Dordick H.S., Wang G. *The Information Society: A Retrospective View*. Newbury Park — L., — 1993.
- [13] Knowledge management e e-learning in ambito sanitario. M. Masoni, M. R. Guelfi, A. Conti, G. F. Gensini, - Milan: Springer, 2011. - pp 65-72.