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THE ROLE OF INFORMATION TECHNOLOGY IN PROFESSIONAL TRAINING OF PROSPECTIVE ACCOUNTANTS AND AUDITORS

The emergence of new generation computers, new operating systems and applied software, their upgrading, as well as the constant updating of applied software, are the characteristics of modern computerization. Introduction of innovative approaches, information systems and technology into educational process is an important component of the professional training of accountants and auditors. Thus, university professors should introduce students to the new methods and forms of work, required from the new generation of professionals with regard to international accounting standards, rules, and principle [6, p. 219].

This necessitates changes in the content of training of prospective accountants and auditors, taking into consideration the use of information systems and technology.

Close analysis and systematization of scientific publications show that the theoretical foundation for information systems and technology application was laid in the works by S. V. Ivakhnenkov, V. D. Shkvir, A. M. Bereza, L. V. Chyzhevska, L. O. Tereshchenko, I. I. Matiyenko-Zubenko, K. V. Kharina, T. B. Poyasyuk, H. A. Tytorenko, V. F. Sytnyk, M. S. Pushkar, F. F. Butynets, V. M. Huzhva, A. H. Zavhorodny, O. P. Ilyina, et al. These scientists continue to do research in the field, contributing to the theory and practice of accounting computer systems and information technology implementation. Their numerous publications and textbooks prove the significance of information systems and technology for accountants' professional activity.

In view of large-scale development of information technology intended for conducting accounting, control, auditing, and analysis at Ukrainian enterprises,

professional training of accountants and auditors is gaining importance. Prospective professionals in this area are expected to skillfully use the acquired knowledge in the future, while occupying appropriate positions at enterprises or doing research work.

The aim of the article is to study the current development and use of information systems and technology in accounting, their role in the professional training of students majoring in Accounting and Auditing.

We believe that there are several issues that need to be further studied. For instance, optimal means (as well as their role and functions) of teaching accounting courses and organizing students' research work have not been determined, neither have been addressed all of the advantages and disadvantages of using computer programs in educational process. At present, the research in these areas is of topical significance due to their importance for both more sustainable knowledge acquisition by the students and further professional training of university professors and researchers.

Information systems and technology contributes to the intellectualization of the human activity and to the development of a qualitatively new information environment. Higher educational establishments are subject to the process of informatization in education, which requires an in-depth analysis of modern informational technology and the potential for its extensive use in prospective accountants and auditors' training. Scholars maintain that information technology will promote quality, intensity, and efficacy of educational process.

Information system is an integrated set of organizational and technological means for storing and processing information aimed at satisfying user's information needs. In our country, information systems are usually referred to as "computer-aided systems", namely, CAAS – computer-aided accounting system ("АСО" in Ukrainian), CAIS – computer-aided information system ("АІС" in Ukrainian), CAFM – computer-aided facility management ("АСУП" in Ukrainian) [10]. The technology that guarantees and supports the processes of searching for, collecting, transmitting, storing, accumulating, processing, and disseminating information, as well as ensures access to it, is called information technology [10] (for quite a long

time now, the term “information and communication technology” has been used instead).

Computer and information technology in Ukraine is not growing as rapidly as in the world’s leading economies, which is caused by the low level of information technology culture and insufficient development of IT services. However, information technology is a priority in the national development strategy of any country [3].

Creating the means for accounting information processing, information technology design and support, service rendering are a well-developed and quite profitable market area. Thus, an active and focused policy, facilitating the advance of information society’s key technologies and, on their basis, of a wide range of software and services is being implemented in many countries. This policy, called informatization, determines the economic and social standing of a country in the world economy, fashions its development prospects.

The Government of Ukraine is planning to take a series of measures to support information technology and systems development. At the beginning of 2007, the Verkhovna Rada passed the Law of Ukraine *On Conceptual Framework of Information Society Development in Ukraine in 2007 – 2015* [4]. Shortly after that, the Cabinet of Ministers of Ukraine approved of *The Action Plan* for the fulfillment of the tasks stipulated by this Law [7]. *The Plan* specifies the list of actions to ensure the development of information society in Ukraine, such as:

- to give priority to the development and implementation of a new competitive information and communication technology in all spheres of public life;
- to provide for computer and informational literacy of the population;
- to develop national information infrastructure and support its integration into the world’s infrastructure; and
- to improve the law on regulation of information relations, etc.

The measures included into *The Plan* [7] can be subdivided into two groups:

- tactical – creating favorable conditions for the development of all competitive spheres in IT; and

- strategic – investment in personnel's development by means of maintaining modern technological level of relevant educational fields and ensuring the processes of Ukraine's European and world integration [3].

Under these circumstances, computerization of accounting, auditing, and finance appears to be of great importance. Therefore, the methodology of its organization and application at enterprises and institutions and, consequently, the methods of its teaching in higher educational establishments, have to be adjusted.

This task demands that special methodological framework be developed to facilitate the use of new software for teaching courses in accounting and to address the following educational and methodological issues:

- fashioning an integrated educational and methodological approach to information technology implementation into educational process;
- developing special methodology regulating information technology application;
- organizing faculty training in information technology and its use in educational process;
- technical resource base of a higher educational institution; and
- searching for, designing, and creating appropriate computer software.

An important aspect of improving the quality of knowledge acquired by students is the selection and systematization of those information technology means that are suitable for teaching accounting disciplines. The success of this task depends on the careful choice of the requirements set for information technology means and their further scientific and methodological approbation.

In teaching accounting, attention should be paid to the use of visual materials, which make the educational process more exciting and pedagogically effective, whereas the content of education becomes more interesting and easier to understand. Moreover, they also allow to introduce lecture material logically and time-efficiently, distinguish between the more important and the less important, focus students' attention on the details that could be missed otherwise [9, p. 238].

It is a well-known fact that simultaneous visual and hearing perception of the

theoretical material is critical for better knowledge acquisition. Therefore, it is important to ensure such conditions that will enable students to create mental images of the objects, phenomena, and processes, as well as will allow them to develop their corresponding cognitive abilities. As a result, this will encourage students' own thinking and help them master the content in an easier and faster way.

Nowadays, professional and qualificational level of an employee has to conform to higher standards. One of the main requirements is his/her ability to use modern information systems and technology.

For instance, in the sphere of accounting, a qualified employee must satisfy the following requirements:

1. have a degree (certificate) in accounting;
2. have a profound knowledge of financial laws on accounting and auditing;
3. be an advanced PC user;
4. be able to work in the Internet and use e-mail service (most employers suggest sending a resume (CV) via e-mail);
5. work with 1C: Accounting or Parus software; and
6. have no less than three years of work experience.

Half of these requirements, namely items 3, 4, and 5, are directly related to computers and technology.

As for modern computer technology, close attention, in author's point of view, should be paid to: up-to-date hardware, which tends to 'grow old' really fast, and computer networks; typical network architectures; information technology at enterprises; Intranet and corporate networks; technological processes of data processing in information systems; file-server and client-server architectures, distributed data management systems, CASE technology; Internet technology in business; fax and Internet access communication programs, multi-media technology; electronic document management technology [5, p. 129]. It is also critical for an accountant to be aware of information security methods in local networks and communication systems: centralized data management (database information

security, methods of ensuring data integrity and confidentiality, joint resources management), secure data transmission via communication channels [2, p. 219]. Electronic documents circulation is an important function in the accountant's work. It is aimed at automation of cooperation between enterprises and banks, lending and treasury agencies, financial and tax authorities. Therefore, it must be included into the educational process. Though some of the issues mentioned seem not to directly relate to accountant' functions, but, nevertheless, they can influence the efficacy of his/her work.

The information model of teaching accounting disciplines can be viewed as a systemic innovation, which helps to integrate theoretical, methodological, and practical foundations of the educational process. On the other hand, all components of this process – the goal, content, students and teachers' activity, checking and evaluating learning outcomes – are subject to changes.

The process of teaching courses in accounting, based on information technology, demands setting clear goals and controlling their achievement. Computer software design actualizes a step-by-step, hierarchical approach to teaching, taking into consideration information means and methods, which will allow to determine the goals to be achieved at a certain learning stage and particular time period [9, p. 221].

The foundation for accounting computer systems is accounting methodology and the information system, organized as a totality of electronic documents and relational databases. All important products of accounting work automation are designed in accordance with the market demands, so there is no generally accepted classification, as well as there are no recommendations for their application in educational process. Businesses use both integrated automated accounting software and software for individual groups of operations. So, the course *Accounting information systems and technology* should teach at least one of these computerized accounting systems. Moreover, in order to advertise their computer products, software designers cooperate with higher educational establishments and offer purchasing educational versions of their programs with sufficient discount.

We believe that integrated automated accounting systems for middle-scale

businesses, such as *1C: Enterprise* and *Parus-Enterprise,* are best examples to be taught. These systems ensure mastering universal accounting information technology, including preparing primary documents, performing accounting functions, forming reports and are most often used in practice. In addition to this, on the websites of agencies that collect official statistical reports from accountants (State Tax Administration of Ukraine, Pension Fund of Ukraine), free software can be found – AWPs (automated workplaces) for automation of relevant reports. The latter are highly specialized, designed by Ukrainian software engineers, and characterized by an accessible and easy-to-use interface and built-in detailed help program. They allow forming electronic report files, which can be transmitted electronically and are easily integrated into corresponding databases. Mastering such AWPs should be included in the educational process as students' individual or research activities.

Modern software market offers a variety of automated accounting software, which provide quantitative, monetary, and multi-level analytical accounting, support running accounting in one-user and network modes, as well as for several related companies, and consist of functionally independent modules, which can be easily combined. In our opinion, there is no difference which program to use in educational process, because the main aim is not to learn how to use specific software, but to understand how its algorithms work, what the consequences of particular actions may be, and to trace the links between the components of a program. An accountant must be sure the program will not perform any operations without his/her command.

Almost all modern automated accounting programs have an open architecture, which means that an experienced user can individually change software functionality by adding and changing financial documents and algorithms. Quality program application implies not only studying the interface, but also its adjustment, namely performing operations such as updating electronic chart of accounts, standard operation procedures, raw documents and report forms, adapting computational tasks algorithm (based on the peculiarities of accounting at an enterprise). It is also worth mentioning that most software design companies closely watch the changes in the requirements to official reporting and timely adjust to them suggesting their users to

update the software. Profound knowledge of the principles on which automated accounting programs are based is acquired by meticulous and time-consuming practical work. Its final goal is to ‘make’ the program work properly.

Computer-aided teaching accounting courses has both advantages and disadvantages. Among the strengths of this approach are reducing the number of print media in providing students with course information. For instance, with the help of multimedia board, a lecturer can demonstrate how to fill in a certain document correctly. In this case, he can also demonstrate the relation of this particular course to other courses, which is topical for training prospective accountants: showing a properly completed document, a lecture can draw the attention of the students to possible mistakes, their correction, explain how to avoid them.

On the other hand, computer program malfunction or unexpected blackouts can create panic among students, especially if they have no opportunity to turn for instructions to the lecturer. Thus, to promote effective and well-organized work of accounting instructors, as well as to provide them with the opportunity to acquire necessary information on the topic, the higher educational establishment’s administration should take care of appropriate technical and software support, regular access to local and global electronic networks, support and timely update of databases, etc.

The information model of teaching accounting disciplines requires revising the organization of both instructors’ and students’ work. For a student, who has a PC, Internet access, learning can take place at any time and in any place (country, region, city). For all educational process participants, the boundaries between the modes of delivery are erased (at the university, at home, in the library, or in the classroom).

An undisputable advantage of information technology is its capacity to collect and store virtually unlimited amount of information and materials. At present, multimedia resources of developing and presenting learning material in accounting disciplines make any traditional class session more exciting and informative. Students learn interesting and necessary information, exchange opinions and ideas about the research on the topic, which promotes forming new views on the learning material

and ways to master it. Prospective specialists learn how to search for, use, analyze, edit, and transmit information, how to make reports and design its new forms; they become competent in applying the main accounting principles, namely credibility, consistency, reliability, relevance of information taking into account its source. Acquiring knowledge of how computer equipment functions during the first and second years, as well as the ability to work with various computer programs and use global search engines, students enhance their communicative competence and media-literacy.

It is obvious, though, that no information system or technology can replace an experienced accountant. To become a competent and qualified professional, a student working toward his/her degree in accounting should learn how to:

1. use Windows operating system and adjust its parameters;
2. prepare any type of document in Word processor (including charts, diagrams, drawings);
3. create templates for solving simple and complex economic tasks in electronic charts in MS Excel;
4. work in local network, be aware of its shared resources, one's own rights and possibilities;
5. protect information from unauthorized access, be acquainted with means and methods of information protection;
6. perform optimal search for the information on the Internet, be able to use e-mail, have his/her own e-mail address;
7. compose a resume (CV) in Word or even create an HTML or any other web-page;
8. take care of PC anti-virus protection;
9. prepare an MS Power Point presentation; and
10. use specialized software, which allows solving professional tasks.

Organization of the educational process in accounting using information technology acquires the features of scientific, cognitive, research activity and enables students to feel the freedom of creativity, happiness from their own discoveries and

immersion into a problem, which, consequently, leads to problem-solving.

We believe that information technology also develops students' spatial intelligence, graphic faculties, ability to read complex texts, understand diagrams, solve complicated economic tasks, etc. Therefore, the ultimate goal of a university instructor is to train a prospective specialist, who meets the afore-mentioned requirements and is ready to do accounting using modern information technology.

These skills lay the foundation for the students to become more competent in the future, give them the opportunity to try their hands in various branches of economy, applying the acquired knowledge in different disciplines and skillfully consolidating it, which is a critical facility for the crisis-ridden labor market of today.

Considering the above, it should be noted that the process of computerization of teaching accounting disciplines in higher educational establishments has not been fully adjusted to the professional skills requirements of the prospective specialists in this sphere.

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Kinash I. A. The Role of Information Technology in Professional Training of Prospective Accountants and Auditors

The articles focuses on the status of the development and use of information systems and technology in accounting; their importance for the training of prospective accountants is justified; theoretical issues related to the organization and application of information systems in teaching accounting disciplines is described. Strengths and weaknesses of computer technology in educational process are defined.

Key words: information systems, information technology means, computerization, accounting, electronic records.

Кінаш І. А. Роль інформаційних технологій у професійній підготовці фахівців обліку й аудиту

У статті досліджено стан розвитку та використання інформаційних систем і технологій в обліку; обґрунтовано їхню важливу роль у підготовці кваліфікованих фахівців обліку і аудиту; висвітлено теоретичні питання організації та використання інформаційних систем при викладанні облікових

дисциплін. Визначено переваги та недоліки застосування комп'ютерних технологій у навчальному процесі.

Ключові слова: інформаційні системи, засоби інформаційних технологій, комп'ютеризація, бухгалтерський облік, електронний документообіг.

Кинаш И. А. Роль информационных технологий в профессиональной подготовке специалистов учета и аудита

В статье исследовано состояние развития и использования информационных систем и технологий в учете; обосновано их важную роль в подготовке квалифицированных специалистов учета и аудита; отражено теоретические вопросы организации и использования информационных систем при преподавании учетных дисциплин. Определено преимущества и недостатки применения компьютерных технологий в учебном процессе.

Ключевые слова: информационные системы, средства информационных технологий, компьютеризация, бухгалтерский учет, электронный документооборот.

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