BASIC ASPECTS OF FORMING ICT-COMPETENCES OF SOCIOLOGISTS

Sorokina Lyudmyla
Department of Sociology, Faculty of Economics, Management, Sociology and Philology, Dniprodzerzhinsk State Technical University Dniprobudivska, 2, Dniprodzerzhinsk, Ukraine
sludmila1906@gmail.com

Karimov Ivan
Department of Informatics and Computer Technologies, Faculty of Economics, Management, Sociology and Philology, Dniprodzerzhinsk State Technical University Dniprobudivska, 2, Dniprodzerzhinsk, Ukraine
ikarimov@ukr.net

Karimov Gennadiy
Department of management of organizations and administration, Faculty of Economics, Management, Sociology and Philology, Dniprodzerzhinsk State Technical University Dniprobudivska, 2, Dniprodzerzhinsk, Ukraine
gkarimov@ukr.net

Zayarna Iryna
Department of Ukrainian and Foreign Languages,
Dnipropetrovsk Regional Institute of Public Administration,
National Academy of Public Administration under the President of Ukraine
Hohol str. 29, Dnipropetrovsk, Ukraine
ridgeback2009@mail.ru

Abstract: For the high quality transition of professionally meaningful knowledge and abilities, which are necessary for effective professional activity of future sociologists it is necessary to work out a complex of events, from the determination of professional competences and their constituents to the development of educational and methodical support of particular disciplines. The aim of this investigation is the determination of the ICT competences of students and the forming of basic approaches for their provision. Modern packages of software products are analyzed, specially worked out both for sociological information processing (WASP, SPSS) and for general-purpose tasks (Microsoft EXCEL, ACCESS, Power Point). The questionnaire of students of Sociology was conducted

with the aim to determine the degree of evolution of abilities of using ICT facilities. On the basis of analysis of qualifying requirements to the sociologists, the information-communication competences were determined. The basic approaches to the organization of educational process in higher educational establishment were formed. All of this in totality provides to the future sociologists the ability to apply modern facilities of information and computer technologies to the solution of typical professional tasks comprehensively.

Keywords: ICTs, ICT-competence, higher educational establishment, students of Sociology, e-environment of the university

INTRODUCTION

The modern stage of the development of society is characterized with a help of scale and depth of the penetration of ICTs in all spheres of vital functions of humankind (Okinava Charter).

As a result the problem of training of specialists appears sharper. Modern specialists must have the new type of thinking, skills and abilities that answer the requirements of information society. In particular, it touches future sociologists, as their activity is intimately connected to different work on various kinds of information.

The questions of content and organization of training of specialists in the sphere of sociology were studied in scientific investigations of many domestic and foreign scientists. They examined general principles and approaches to the problem (Toschenko 2008, Abramov 2008); analyzed the features of sociological education in the context of Bologna process (Narbut 2008, Vakulenko 2010) and the methodical and technological providing of educational activity in this field (Tsymbaliuk 2008).

At the same time the methodological problems of training of future sociologists to the systematic use of ICT in professional activity need further development of research, in particular, aiming at working out in detail different approaches and procedure of forming of the information and communication related competences of future specialists.

1. PROBLEM STATEMENT

Training of specialists for any industry in higher educational establishments of Ukraine is conducted in accordance with the Standards of Higher Education. The basic approach of these Standards is an integrated approach that envisages such organization of educational process, at that we have secured providing of professionally-meaningful knowledge and abilities that are necessary for future effective professional activity (Ovcharuk 2004).

For practical realization of such approach in relation to "Sociology" it is necessary to complete a complex of events, from the determination of professional competences and their constituents to the development of the educational and methodical provision of separate disciplines.

The aim of this research is to determine information and communication competences of future sociologists and forming of the basic approaches for their providing.

Results of research

Base discipline at the study of ICT-competences of future sociologists are formed - is the discipline "Basics of Informatics". Description of this discipline in the light of the investigated problem is given in the table 1.

Table 1

The Description of discipline "Basics of Informatics"

Name of the module (themes)	Content of knowledge that is provided	Content of ability that is provided	Competence, that is formed
1	2	3	4
Object and content of discipline. An introduction to informatics.	A terminological base of informatics, place and role of informatics in sociology.	Use of terminology of informatics	Ability of effective work with modern computer facilities (computer-technological competence)
Composition, architectonics and functioning of computer systems	Architecture and principles of functioning of PC. Classification of software.	Determination of necessary and sufficient configuration of PC	
Operating system Windows	Possibilities of OS and technology of work in the environment of the graphic operating system Windows	Implementation of basic operations with objects in the environment of Windows	
Basics of computer networks construction	Principles of construction and technology of work in local and global computer networks	Information processing in computer networks, remote communication	Ability of effective work with modern computer facilities (computer-technological competence)
Organization of computer security and defence of information	Principles and technological approaches to defence of information	Realization of anti-virus prophylaxis, defence of information from an unauthorized access	

Systems of the text processing	Technology of text documents processing	Usage of MS Word for preparation of various documents	
Databases and control system by the bases of data	Principles of databases planning; technology of creation, editing and control of database of MS Access objects	Creation of databases and information processing in them by means of DBMS of MS Access	Ability of effective work with information in all forms of presentation (informative competence)
Systems of the tabular data processing of Excel	Technology of creation, editing and formatting of spreadsheets and diagrams in the environment of MS Excel; basic possibilities of MS Excel on processing and analysis of data	Creation, editing and formatting of spreadsheets and diagrams in the environment of MS Excel	

Continuation of the Table 1

1	2	3	4
Using of DBMS for information processing of sociological aspiration	Technology of application of DBMS in sociological researches	Processing of sociological information by means of DBMS of MS Access	Ability to apply modern facilities informative and computer technologies with information work and solve various tasks (procedural and operational competences)
Processing of sociological information by facilities of tabular processors	Technology of application of spreadsheets in sociological researches	Processing of sociological information by means of tabular processor of MS Excel	
Informative resources of computer networks and their applications in sociology	Technology of the usage of the network informative resources in sociological researches	The use of global informative space for satisfaction of professional requirements in informative products and services	

Modern methods of organization of presentations by facilities of Microsoft PowerPoint	Technology of creation, editing and show of presentations	Application of modern technology of presentation of ideas and results of researches

Source: own work

ICT competences, indicated in Table 1 are formed on the basis of standard programmatic facilities, in particular: Microsoft Word (text information processing, including documentation, preparation of reports on the results of sociological researches, analytical review etc.); Microsoft Excel (processing of the information presented as tables, including various calculations, working of questionnaires and others like that); Microsoft Access (creation and conduct of databases); Microsoft PowerPoint (creation and revision of sliding seats, presentations, different video information); programs-browsers as Internet Explorer or Mozilla Firefox (providing access to the resources of global information network of Internet).

Fixing and deepening of the formed competences is conducted during all periods of studies. Taking into account the specifics of future professional activity of specialists in a variety of forms and facilities it follows to distinguish two basic directions:

1) use of resources of global information network and means of remote intercourse;

2) processing of sociological information by means of the modern information—communication technologies.

Clarification and fixing of competences from the first direction take place in the process of study practically for all disciplines of curriculum. It is assisted by the predefined logic of educational process, permanent necessity of certificate information retrieval, active use of educational resources (for example, the DSTU web-portal (Information Portal of DSTU)), and it also offers for many tutors a possibility of remote communication by means of e-mail and Skype.

No mean role is played by students' aspiration supported by tutors to use modern information communication technologies for the purpose of satisfying their personal requirements in information and communication, as a result a computer and other communication facilities having become an inalienable part of youth's life.

There is clarification and fixing such procedural and operational competence as an ability to apply in complexity the modern facilities of information and communication technologies to the decision of typical professional tasks, it takes place during the study of disciplines of corresponding aspiration, in particular, "Mathematical methods in sociology", ―Analsis of category data", "Quality of empiric research".

Thus next to the popular tabular processor of Microsoft Excel students study the professional packages of PSQ software (Processing of Sociological Questionnaires) and SPSS (IBM SPSS Statistics Base) (Karimov 2013). A package of PSQ (as it appears from the name) purposefully intended for organization of introduction and statistical analysis of results of the sociological questioning, providing a user with a tool for implementation of all standard stages of the sociological information processing.

The package of SPSS Statistics has a wider setting. This product is oriented to the analysts and scientists, helps them to decide business problems and research tasks, embracing all analytical process. The powerful analytical instruments of SPSS Statistics help to design different situations and accept more reasonable decisions.

The key element of the SPSS Statistics package is SPSS Statistics Base, which provides access to data, control of data and of creation of reports like PSQ.

At the same time, it is possible with the help of SPSS Statistics Base to integrate additional modules with an aim to provide activity on the planning of data collection, introduction and distribution of the results. Thus, mastering of the indicated instruments can be considered ~~as~~ a guarantee of readiness of future sociologists for the complex use of information and communication technologies in professional activity.

The Dniprodzerzhynsk State Technical University takes part in the international project «International Research Network for study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences». The project is financed by the European Commission under the 7th Framework Programme, within the Marie Curie Actions International Research Staff Exchange Scheme.

Within the framework of implementation of tasks to the project the sociological questioning was carried out among the students of DSTU, which gives an opportunity to estimate quality of the use of information and communication technologies, and also to estimate the attitude of students to the website of University and to the Systems of e-learning in general. The students of the Department of Sociology took part in this questionnaire directly.

Research results prove that most respondents (58%) quite rarely call to information that is on the website of the University and find important information in other electronic sources. Thus it should be also noted the sufficiently high percentage of people who have learned a lot of new interesting and important things from the information placed on a website of the University (42%). Undoubtedly, these data remind us about the necessity of the permanent updating of information on a website and search of interesting materials that are necessary for the students for their studies and finding a future job.

About 30% of the students would like to see methodical materials and literature on the website of the University, 15% - information about events that will be conducted

at the University, 12% - the curriculum of classes, sessions and consultations. In this context it would be desirable to mark that DSTU has its own information portal. It functions successfully, and tutors of the University have the opportunity to expound the electronic versions of the methodical materials from courses, and the students - to use them in their independent work and in preparation for classes.

A very interesting piece of information was obtained as a result of students' answers to a question about what divisions of information are major for them (Table 2). It was set that the biggest number of the DSTU students marked necessity and utility of exposition on the website of the University of resources for the distance learning and different additional educational resources (37%), and also information about additional work (29%) (Korobochka 2014):

Table 2

Distribution of the students' answers in relation to importance of information for students on the website of the University (in %)

№ n/n	Variant of answer	%
1	Resources of the distance learning and additional educational resources	37,23
2	Suggestions of additional work	28,80
3	Invitation to participating in events (conferences, actions)	22,83
4	Photo galleries and reports about events that took place	11,14
	Total	100,00

Source: own work

About the high level of students' awareness of the activity of the University indicates the fact that almost 92% of the polled students browse the pages of the University in social networks, 6% - comment these pages and 2% - add content (photo, video etc).

Research results showed that 93% of the polled students had an access to the Internet; here 78% use it every day, 16% - constantly (twenty-four hours), 4% - every week and 2% - every month. The obtained data allow us to assert that 48% of the students have the opportunity to use a computer class, software and Internet at the University after lessons, 36% - do not have such necessities and only 16% of the polled persons marked that they did not have such possibility.

An important factor that directly influences the efficiency of forming the information and communication competences of the students is a degree of readiness

of the tutors of disciplines (that is unrelated strictly with computer technologies) to the active use of ICT in the pedagogical practice.

Unfortunately, today most tutors apply information and communication technologies in teaching disciplines in a fragmentary way, giving advantage to computer diagnostics of knowledge, exchange information by means of e-mail, to the use of presentations and electronic demonstration materials.

Thematic websites, teaching programs, other multimedia facilities are used quite rarely . Practically, different authorial electronic textbooks and the personal open educational resources are not used in the educational process. Additional problems are related to the especially organizational questions. What must lead to such questions is the extent of the created electronic environment of an educational establishment and a level of regulation of the use for electronic instruments in an educational process.

It is necessary for the correction of the indicated situation, first of all, to unite all local networks of separate subdivisions in the only network of educational establishment with accessible for all electronic resources, including an e-library, various databases, information portal and others like that.

Further, it follows to enter a systematic study and advising of the tutors both on application of certain software products in pedagogical activity and for the newest pedagogical technologies on the basis of ICT.

Very important is an everyday support in the form of guidance provided by a higher educational establishment of tutors' activity aimed at mastering and making use of ICTs, input of the effective system of stimulation of information technologies introduction. Perhaps it is even possible to talk about the creation of "a cult of ICT in educational process".

In general the realization of the offered events ensures forming of the ICT competences of future sociologists, prepares them for professional activity in accordance with the requirements of modern information society.

CONCLUSION

 In the article we defined ICT competences and formed the basic approaches to the organization of the educational process in a higher educational establishment, which on the whole provide the future sociologists the ability to apply modern facilities of information and computer technologies to the solution of typical professional tasks comprehensively.

Acknowledgments

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