



## The Role of Library Laboratory (LibLab) as an Innovative Project for Science Education in University Information Environment

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### Abstract

*This paper presents an innovative concept and its accompanying methodology of teaching in the academic training of students - bachelors and masters, at the State University of Library Studies and Information Technologies (SULSIT). A special emphasis is the relationship of theoretical knowledge with the development of practical skills through integrating the educational process with the Laboratory of Library Technologies, Communications and Informing – LibLab, in the structure of the Library and Information Centre (BIC) of the University. LibLab's goals and opportunities as an experience-based science and educational project are presented - a project, providing working environment as close to the real one as possible and directed towards knowledge management and "lifelong learning".*

*This project combines educational and scientific initiatives on key strategic directions of new perspectives in science education, such as: application of the latest technological solutions in library practice for the formation of information competencies in terms of global information environment; demonstrating and testing innovative solutions, related to interactivity of electronic bibliographic resources; applying the "learning by doing" method, where students test the theoretical knowledge they have acquired in a working environment as close to the real one as possible, and accumulate practical skills for various working processes, including a survey of the status of library collections, restoration and conservation of documents, bibliographic control and prevention.*

*LibLab's activities in ICT application, including digitization as a priority in the scientific, educational and cultural policy of the European Union, are identified as an important component of science education in SULSIT. So far, experience from the realization of this educational project has shown that the friendly and attractive atmosphere is a powerful incentive for motivating both students and their tutors in the various scientific fields of university IT environment.*

*Keywords: science education project; educational Initiatives; ICT; library laboratory LibLab; knowledge management; lifelong learning; learning by doing.*

### 1. Information environment for integration of modern information technologies in the educational process.

The opportunities and prospects for achieving quality educational level of academic institutions and their equivalent partnership in world scientific and educational space is linked to globalization and the competitiveness of environment with regard to implementation of innovative educational patterns, achievement of balance between traditional forms and technological changes in information society .

According to scientists and researchers in this field, the characteristics of the information environment can be reduced to three interrelated components – information collections, information technologies and the so-called human factor. The manifestation of the human factor, which is decisive in terms of structuring the information environment, appears to be the connecting link between the first two components. [1]

In the educational policies of the State University of Library Studies and Information Technologies (SULSIT) in Sofia, Bulgaria, the integration of modern technologies into the educational process is defined as a priority area. The successful adaptation to the challenges of university information environment depends on the availability of the necessary technical equipment, the level of knowledge of their users and last, but not least on the qualification and the professional experience of the tutors. Success in this case is the result of collective actions at all academic levels - academic council, institutes, faculties, schools, departments, educational and scientific centres.

Motivation and satisfaction are function of the successful passing through three stages determined by the changing information environment. The establishment of a technological infrastructure can be considered as the first stage. The next, second stage is connected to its application at administrative, managerial and pedagogical level. The final, third stage includes the strategies in the application of innovative approaches in the educational process, hence - in actual practice.



One should talk about the role of university education in regard to social development with awareness and understanding. Information poverty is the foundation of any poverty. While traditional educational approaches are linked with activities in the students' syllabus, the application of modern technologies provides opportunities for experimentation with innovative ideas and solutions aimed primarily at raising the awareness of students.[4] Thus the potential of modern academic education of the XXI century can be reduced to two key areas - sustainability and impact assessment. Based particularly on this, we feel confident that universities are capacity centres for accumulating global topics and therefore for marking global objectives.

## 2. LibLab – innovative technologies for sciences education

The idea of establishing the Laboratory of Library Technologies, Communications and Informing - LibLab at SULSIT is innovative in its own way, because it has no analogue in educational institutions with regard to training in bibliography and library studies.

What is typical of a university structure as LibLab at SULSIT, is the correct orientation to working with students, doctoral students and tutors, as well as striving to expand its areas of application in the training process. Information infrastructure supports and provides integrated training by transforming structural units of the type LibLab into educational, information and social centres of the academic community, where thoughtful, intelligent and informed students are shaped.

Contemporary approaches imposed by the changing information environment find their expression in the development of innovative strategies for training and in establishing effective interrelations between theory and practice. In this context, the educational process at SULSIT is implemented in a way which takes into consideration the individual needs of each student, while, on the other hand the aim is to achieve maximum transparency of the individual educational components.[3]

The presence of LibLab in the structure of the Library and Information Centre of SULSIT since the beginning of 2013, can be defined as a kind of connecting link between the theoretical and practical training of students. Integrative policies for acquiring key competences in bibliography and library studies, applied into the training process of students at LibLab aim at achieving effective interactions between theoretical knowledge and practical skills, necessary for work in real library environment. What is important about the quality of educational development and the improvement of the students is the proficiencies they acquire to serve as a foundation for their future professional development and career growth.[2]

Among the educational fields in LibLab's activities are outlined the following:

- Investigating the application of information and communication technologies (ICT) and the access to "useful" information in the global information environment in library practice.
- Demonstrating and testing of innovative solutions, related to interactivity of electronic bibliographic resources.
- Applying the method of the American philosopher and educator John Dewey 'learning by doing', where students learn to master the analytical and synthetic processing of documentary sources.
- Activities for the protection of literary cultural heritage – a field, particularly relevant for the present 21st century of knowledge.

When formulated in this way, they are a logical and integral part of the educational objectives of SULSIT. Innovation is in the phased introduction of students into the details of practical library work, which appears to be a strategic component in their training and a factor in achieving a quality educational process.

The dynamics in the development of forms of publication requires changes not only in the bibliographic information structure but also in the ways of providing access to information, consistent with and fully focused on the interests of consumers.

In this context the integrative policies, aimed at acquiring key competences in bibliography and library studies in LibLab at SULSIT aim at:

- achieving a balance between traditional forms and the technological changes in the information environment;
- applying the acquired theoretical knowledge in practice by mastering the analytical and synthetic processing of documentary sources.

## 3. Building key competencies.

Traditional approaches, amid changing information environment, are no longer able to ensure the necessary visibility of bibliographic resources, because they can not ensure communication between



bibliography and the user. The change in environment brings about changes in the views about the bibliographic record, its functions, as well as the forms and methods of its performance. Following current trends, a team of tutors and students experimented and worked in LibLab on the methodology for devising bibliographic editions of mixed character. This methodology is conveyed in compiling and adapting interactive bibliographic resources that perform dynamic links between bibliography and global information environment. This innovative educational complex is an example of an effective cooperation between librarians and software developers, where the extend of the informativeness of the databases is currently enriched.

Electronic bibliography is an interactive version, where dynamic links to content, location, information about the author, the text of the book, as well as links to useful resources on the Internet, are maintained alongside the classic bibliographic record. Special attention is paid to the main challenge facing library studies at present - achieving a balance between traditional and electronic bibliographic resources, corresponding on the one hand to the socio-cultural and digital information environment of the 21st century, and on the other to the dynamically changing profile of the modern consumer.

Protecting and preserving the literary heritage is among the next priority activities of LibLab and has a variety of applications. In the "Zone for conservation, protection and restoration", established in 2015 students get acquainted with the nature of the processes concerning the protection of literary heritage, monitor and investigate the state of library documents, acquire knowledge and skills for restoration of damaged editions, get acquainted with the requirements for bibliographic control and prevention.

The formation of key competences in bibliography and library studies in the LibLab at SULSIT is in direct correlation with the methodology of the Learning by Doing approach and its application in various in nature, educational interactions. Present-day information environment logically imposes changes in traditional lecture academic formats, and they are actively updated with modern applications. In support of this fact there are the parameters of the popular Pyramid of Learning, according to which students remember mere 5% of the information from lectures; 20% to 30% of the information from demonstration, and it is important to stress on the fact that this is the maximum that can be extracted from all passive forms of learning. Discussion and practice are perceived as far more effective approaches.

The scope of learning by doing includes a wide range of pedagogical methods that reflect individual stages of the learning process. Introducing students into the details of practical library work by applying the method Learning by Doing is an essential component for achieving quality in the educational process. As a result of this approach, students acquire qualities and skills to cope in real environment, information competences, communication skills, and last but not least, a change in their attitude towards the library profession and their motivations for professional development.

The new virtual reality dictates new opportunities and the aspiration, in terms of application, is aimed at planning, analysis, description and evaluation of individual actions, which, as a whole, represent a pattern of linking theory with practice. It is through the forms of this cyclic sequence of actions that the training process is structured. The Learning by Doing model is particularly popular in areas related to opportunities for practical application of the theoretical settings. In support of the above mentioned is the fact that webinars or web-based seminars, such as "E-books - Present and Future" and "Integrated Library Systems" are currently conducted in LibLab. The topicality of the themes for online discussions is a catalyst of ideas and a kind of generator for the interest of the participants with projections that are expressed in a series of informal talks.

The desire for change perceived as a focal point for the successful implementation of innovation is a factor for real integration of library systems in practice. The interest and activity of the students who perform the practical tasks easily can be considered an indicator for the effectiveness of the training process. From the standpoint of the new information paradigms in the work, the change in the students' attitude towards the educational process itself is visible.

#### **4. Conclusion**

Innovative training methods are implemented in LibLab at SULSIT in line with global practice (these methods and their practical implementation were thoroughly discussed and analyzed at the Congress of the American Library Association - ALA, held in 2015 in San Francisco, USA). The concept of acquisition of theoretical competences and practical skills is broadly supported in the educational frames of a number of elite universities. In a growing number of curricula and syllabuses the objectives of training in particular subjects are defined in a manner, identifying competence as the ability to meet complex needs, to draw and mobilize psychosocial resources (including skills and attitudes) in a particular context. The acquisition of these basic skills is determined as a result of the pedagogical





process and as an integral part of the conceptual shift in approaches, based on the transition from theoretical-educational content towards professional competences.

In conclusion, we can sum up that SULSIT is an organization that strives to introduce and ensure better teaching and learning through friendly and welcoming environment, combined with the advantages of the new technologies.

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