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14th International Technology, Education and Development Conference

2-4 March, 2020 - Valencia (Spain)

## CONFERENCE PROCEEDINGS



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#### INFORMATION LITERACY IN THE FRAMEWORK OF HIGHER EDUCATION: FOCUS ON INTELLECTUAL PROPERTY TRAINING

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#### Abstract

With the rapid development of new technologies, when information becomes one of the most valuable resources, Information Literacy (IL) plays a leading role. With the global penetration of the Internet, social networks, the digitalization of information arrays and the emergence of new tools for managing and using information resources, people's expectations for access to information have increased significantly. New technologies and modes of communication have broken many barriers to access, calling into guestion the efficiency of the search, selection, evaluation, correct, ethical and legal use of information, which also necessitated the acquisition of new competences and skills. Information literacy is one of the key competences of today's society. Her upbringing is the initial step in the ability and ability to seek and use the huge information flow. Intellectual Property (IP) can be seen as an element of information literacy in the higher education framework. In order to successfully develop students at university and in life, they must learn to use efficiently and effectively the wide variety of information and communication technologies to search, find, organize, analyze and evaluate the information they need. In addition, they must understand the ethics of the use of the information, including in violation of subjective intellectual property rights such as plagiarism, use without permission of the author of works of literature, art, science, as well as patented inventions, industrial design, designations (trademarks, geographical indications, domain names, companies). Finally, they must be able to systematize all this knowledge into one in order to create an effective end product. This requires them to assemble the full suite of basic research, technological, critical thinking and evaluation skills. In today's society, experts who are able to interpret IP issues, such as library and information professionals, play an important role. It is their responsibility to create policies to promote the understanding and resolution of legal disputes and conflicts that are unique to this aspect of the information society. One way to achieve this is through the educational impact of information literacy programs that incorporate IP issues as part of the curriculum. The aim of this paper is to present an overview of the current state of intellectual property as an element of information literacy of the students at the university. To achieve the set objective are defined the basic concepts and is made an analytical overview of their essence. Finally, are made, some major conclusions and recommendations.

Keywords: Information Literacy, Intellectual Property, Information Technologies, Higher Education.

#### **1** INFORMATION LITERACY – A SHORT OVERVIEW OF THE DEFINITIONS

With the rapid development of new technologies, when information becomes one of the most valuable resources, effective information literacy plays a leading role, both in the personal development of scientists and in their ability to pursue basic scientific research. In today's information and knowledge based society, we are witnessing the expansive development of information and communication technologies (ICTs), which has led to the globalization of information and a new "revolutionary wave", the so-called information wave or wave of knowledge [1]. Some authors call this turning point "the second Gutenberg advent." [2]. The amount of electronic information flow is growing exponentially and is reaching the so-called information boom. As Alvin Tofler points out, the creation and dissemination of information has become a major activity and source of power for humanity [3].

According to some authors, the increase in the growth of electronic information flow is due to the advancement in the field of printing, the multiplication of traditional sources of information and their dissemination on the Internet with the use of web technologies [4].

Information literacy (IL) has become a concept in recent years and is embedded in many international projects, programs and initiatives, with the main task not only to promote information literacy, but also to promote it as one of the possible solutions to overcome the "digital divide" [5], [6].

With the global penetration of the Internet, social networks, the digitalisation of information arrays, and the emergence of new tools for managing and using information resources, people's expectations for access to information have increased significantly. New technologies and modes of communication

have broken many barriers to access, calling into question the effectiveness of the search, selection, evaluation, correct, ethical and legal use of information, which also necessitated the acquisition of new competences and skills.

IL is one of the key competences that builds the fundamental knowledge of modern society. Her upbringing was the initial step in the ability and ability to seek and use the huge information flow. [7].

The introduction of the term "information literacy" into the scientific space is linked the name of Paul Zurkovsky and his 1974 report "Priorities and Relationships in the Information Services Area" prepared for the US National Library and Information Commission, which is one of the most cited headlines on information literacy. In his report, he notes that "information is not knowledge; it is concepts or ideas that enter the individual field of perception, are evaluated and assimilated by reinforcing or altering the personal perception of reality and / or ability to act" and to " being literate means being able to discover what is known or known in every field."

In its almost 40-year history, the concept of IL and its significance in the educational process and in the context of the concept of lifelong learning has been the subject of a number of discussions, analysis, research and international forums, acting as the roots of their final views, as follows:

- The Prague Declaration: Towards an Information Literate Society adopted at the 2003 Meeting of Information Literacy Experts in Prague, organized by the US National Library on Information Sciences and National Forum on Information Literacy - NFIL, and supported by UNESCO. 23 countries from 6 continents take part in the meeting [8];
- Alexandria Proclamation on Information Literacy and Lifelong Learning Adopted in 2005 by the High Level Colloquium on Information Literacy and Lifelong Learning, organized by UNESCO, the National Information Literacy Forum and the International Federation of Library Associations and Institutions - IFLA [9];
- Fez Declaration on Media and Information Literacy Adopted at the first international media and information literacy forum organized by UNESCO, Sidi Mohamed Ben Abdellah University (Morocco), Organization for Islamic Education, Science and Culture (ISESCO), Arab Bureau of Gulf States Education (ABEGS) and the United Nations Alliance of Civilizations (UNAOC), held on June 15-17, 2011 in Fez, Morocco. More than 200 participants from 40 countries representing the 5 continents take part in this forum [10];
- The Moscow Declaration on Media and Information Literacy adopted at the UNESCO and IFLA conference held in Moscow from June 24 to 28, 2012, which stated the need for the public to increase its knowledge of media and information literacy and to increase interest in this type of literacy internationally [11].

Leading International Organizations involved in this topic also provide their definitions on information literacy. For example, in 1989 the final report of the Committee on Information Literacy at the American Library Association (ALA) stated that "in order to be literate, one must be able to recognize when there is an information need, to have the skill to determine the location, evaluate and use the information required effectively ".

Information literacy (IL) is defined as the set of knowledge and skills needed to discover, analyze, retain and use particular information. IL is the ability to naturally select in the age of information. Information literate people know how to find, evaluate, and use information effectively to solve a particular problem or to decide, regardless of whether the information comes from a computer, book, news agency, film or any other additional resources.

According to the definition in the Alexandria Declaration, adopted at the Alexandria High Level Colloquium on Information Literacy and Lifelong Learning, information literacy is defined as "the ability of people of different backgrounds and professions to effectively seek, evaluate, use and create information to achieve their personal, social, professional and educational goals.

In the context of this study, we could not miss the definition of the 2003 UNESCO experts, who has defined IL as: "knowledge of what information relates to and what information need it can satisfy and the ability to identify, find, evaluate, organize and effectively create, use and transmit information to resolve specific issues and issues; it is a prerequisite for effective participation in the information society and is part of fundamental human rights for lifelong learning."[12].

The most common definition of IL, which is accepted in most countries around the world, is the definition given by the Association of College and Research Libraries (ACRL), which reads as follows: "Information

literacy is a set of abilities that require people to recognize the need for information, find and evaluate information, and use it effectively. " In other words, IL forms the foundations of lifelong learning. It is general literacy for all subjects, for all learning environments and for all levels of education. IL allows people to be more independent and in control of their own lives [13].

From the brief overview of the basic definitions of IL, we can see that they all put information first, as a means of achieving goals of different nature, but it is here that the issue of intellectual property rights is brought to the agenda. The ever-evolving development of information technology and the Internet is putting a serious challenge to intellectual property rights. It is a set of legal norms for regulating public relations in relation to the creation, recognition, legal protection and use of intellectual results and other intangible goods - objects of intellectual property. Thus, exclusive subjective intellectual property rights arise in order to influence and control, including the copying and dissemination of, what is created by man. In the information society, the Internet operates precisely because of the ability to repeatedly reproduce and transmit information and is based on the free use of intellectual results.

#### 2 THE INFORMATION LITERACY AND INTELLECTUAL PROPERTY ACCORDING THE STANDARDS FOR HIGHER EDUCATION

The importance of intellectual property in the modern world goes far beyond the protection of the creations of the mind, as it influences all aspects of economic and cultural life. Today, the one who creates, stores, uses information has an advantage, and that advantage is much higher than the property right holder - even the property right. As a result, university-level intellectual property education is increasingly used in educational programs [14], [15].

IP connects directly to the information held by its objects, or in other words IP is the ownership of the information that intellectual products contain, with their creators having exclusive rights over them. The right to IP as a system of legal norms regulates public relations in relation to the creation, acknowledgment, publishing, distribution, inheritance and legal protection of IP objects, including objects of copyright and related rights [16]. In the knowledge-based economy, experts such as library and information professionals, journalist, etc., that can interpret IP-related issues, have an important place. It is they that bear the responsibility to create a policy to encourage the understanding and resolving the legal disputes and conflicts that are unique to this aspect of the information society. One way to achieve this is through the educational impact of information literacy programs that include IP issues as part of the curriculum. [17].

IP can be seen as an element of IL in the university information environment. In order for students to successfully develop in the university and in life, they must learn to efficiently and effectively use wide array of information and communication technologies to search, find, organize, analyze and evaluate information they need. In addition, they need to understand the ethics of using said information, including the breach of subjective IP rights such as plagiarism – the use of literature, art, science, patented inventions, designations (markings, geographical indications, domain names, businesses) without the authorization of their creator. Finally, they must be able to systematize all this knowledge together in order to create an effective end product. This requires them to assemble the whole set of basic skills for scientific research, technological skills, critical thinking and evaluation.

#### 2.1 Information Literacy Standarts for Higher Education

A set of standards on IL in higher education was created in 2000 and were updated in 2016. There are five standards and are developed by the Association of College and Research Libraries and include indicators that measure performance and results, showing how well the relevant standard has been accepted. These standards are developed specifically for higher education and have been adopted by a number of colleges and universities around the globe.

The ACRL standards are as follows:

- **Standard one** the information literate person determines the nature and scope of the information required;
- Standard two the information literate person has access to the necessary information, uses it effectively and efficiently;
- **Standard three** an information literate person evaluates information and sources critically and incorporates selected information into his knowledge base and value system;

- **Standard four** the information literate person, individually or as a member of a group, uses the information effectively to achieve a specific goal;
- Standard Five An information literate person understands many of the economic, legal and social aspects associated with the use of information sources and has access to and use of information ethically and legally.

Of the five presented ACRL standards, directly related to intellectual property, as part of information literacy in a university setting, is Standard Five. It defines the information literate as being economically, legally and socially literate, aware of these aspects in relation to the product it seeks to create, and uses the information ethically and legally. By sticking to the three indicators of Standard Five of IL in higher education, it is necessary to emphasize that intellectual-legal literacy is an extremely important element of IL of the students in a university information environment. In order to be as precise as possible in their practice, they should possess broader, more specialized knowledge of the theory and practice of the essence of the objects of IP, as well as their legal protection and defense. Until recently, the positioning of IP as part of IL of students in a university information environment was distant and out of reach, but the expansion of students' competencies from all educational levels has been the subject of analysis of the past 15-20 years in research by leading experts dealing with quality of educational process, accreditation of educational establishments, as well as some educational, library and scientific organizations [18]. Various tools are being developed to assess the level of information literacy to highlight "bottlenecks" and propose adequate training methods to overcome them. There is an expansion of the spectrum of questions for the already presented Standard Five for IL, which is evident by the formulated topics of the European IL conference for the 2013-2018 period.

### 2.2 Information Literacy with IP focus – the experience of University of Library Studies and Information Technologies (ULSIT) in Bulgaria

In June 2012 T. Trencheva started the implementation of a research project on the topic: "Analysis of customary practices in the use of intellectual property products in a university information environment", funded by Contract No DMU 03/3 - 19.06.2012. in a competition session for the Young Scientists of the National Science Institute at the Ministry of Education and Science, which is aimed at exploring students' level of knowledge and awareness of intellectual property issues [19], [20], [21]. In the same year 2012, T. Todorova started the implementation of a research project on "Copyright Policy of Library and Cultural Institutions", financed under Contract № DNI - K01 / 0002 of 21.11.2012 in a competitive session of the National Science Foundation of the MES, which aims to study the level of knowledge and awareness of intellectual property [22], [23], [24], [25].

In December 2019, ULSIT launched two more projects that are directly related to information literacy with a focus on intellectual property in various accredited fields of knowledge. The first project is entitled "A Conceptual Educational Model for Enhancing Information Literacy in an University Information Environment" with Contract No. KP - 06 - H35 / 10 of 18.12.2019, led by Prof. DSc Stoyan Denchev. The main objective of the project is to systematically and purposefully to investigate the issues related to raising information literacy in the university information environment in the field of humanities and social sciences, both among students and trainers in Bulgaria, by creating and validating an educational model for enhancing information literacy, in particular intellectual property competence [26], [27]. The second project is entitled "Model for Research and Increase Copyright in the Media in the University Environment" with Contract No. KP - 06 - M35 / 1 of 18.12.2019, led by Evelina Zdravkova - Velichkova, PhD. The main objective of the project is research and practical activities related to the formation of copyright competence of students and the creation of a concept for its further improvement [28], [29], [30].

All four projects are funded by the National Science Fund of the Ministry of Education and Science of the Republic of Bulgaria, implemented by UniBIT and aiming to make the connection between theory and practice, thus establishing the so-called "knowledge gap" and propose an approach to resolve it. According to T. Todorova, "it is important for every informed citizen to understand the applications and importance of copyright law, not only to comply with legal requirements, but also to be a better informed user." T. Cortellainen emphasizes the importance of the ability to recognize and meet relevant information needs [31], which in ACRL Standard 5 is linked to understanding the economic, legal and social issues surrounding the use of information and its ethical use.

Having said all that, it must be concluded that the positioning of intellectual property in the context of a broad framework of information literacy is timely and necessary.

The Republic of Bulgaria is a Member State of the European Union and European Union Law is integrated into the Bulgarian legal system. IL assumes the acquisition of knowledge and mastery of skills for legal defense and use of IP objects under the supranational legislation, including on the Internet. Under a Commission of the European Union resolution, universities and public organizations have to manage the IP created in their activities and during the provision of knowledge, especially to businesses. Curriculums in relation to IP training should include the assimilation of knowledge aimed at forming IL in the university environment.

#### 3 CONCLUSIONS

Intellectual property is a complex and dynamically evolving phenomenon of human culture with a recognized role and importance for the creation and development of a modern information society of legal, economic, social and scientific character.

The observed correlation between intellectual property and its place as part of information literacy in a university information environment shows that universities, as public-sector organizations with specific goals, namely providing educational services and creating public goods in the educational sphere, need to be included as Knowledge in the field of intellectual property rights is natural and necessary.

The achievement of information literacy, which not only corresponds to the contemporary social practice, but also anticipates its development, is based on adequate educational models. At the heart of each modern educational model are values, standards, methods and requirements, with the research process based on them being the main approach to training in the context of transdisciplinary topics [32], [33]. In accordance with this principle, the structure of educational models generally includes a specific research program, which includes innovative training in order to achieve both its educational and scientific objectives.

Intellectual property (IP) reaches the everyday life of each and every one of us, as a part of information literacy in a university information environment. Therefore, awareness of the importance and understanding of intellectual property is essential for today's students, who are the future information specialists, engineers, researchers, lawyers, politicians, and managers of tomorrow.

In the university information environment students have to master the important IP related matter and its application in their upcoming career development. Students and universities have to know how to utilize and benefit from the unparalleled richness of the technical and commercial information, found in IP-related documentation. It is necessary for universities to make efforts to raise awareness of IP issues in the academic community, to research IP right, by engaging in a transfer of technology to industrial partners to create value and benefit for society. Last but not least, students and universities have to be aware with the consequences of the lack of knowledge and the inability to protect their intangible assets under the form of IP, including from risks such as misuse of foreign intangible assets, industrial espionage, etc. [34].

The new information environment imposes new requirements on the competences and knowledge of the young modern professionals, graduating from higher education. Basic IP knowledge are of particular relevance to the fields of information and social sciences, as currently they are the most dynamically developing. The main areas of realization of specialists in the fields of information and social sciences are: regional and national media; government and non-government organizations and administrations; cultural, archival, and educational institutions. The specifics of the work in these areas are related to the use of a wide range of information resources and products, which is the basis of professional activity and condition for a successful realization. Here, however, the question of awareness and preparedness of IP professionals comes to the agenda. Their competence in the main aspects of IP, in particular the protection of copyright, related rights and industrial property, is an essential part of their complex information literacy, especially in regards to using IP objects on the Internet and the lawful use of digital content. It is here where the actuality of the researched problem is determined as the main goal of IP integration as part of the information literacy in the university information environment is to create a culture of respect towards IP among the academic fields and to increase the competitiveness of future specialists.

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