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13TH **INTERNATIONAL CONFERENCE** OF **EDUCATION, RESEARCH** AND **INNOVATION**

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INTELLECTUAL PROPERTY TRAINING AS PART OF INFORMATION LITERACY IN UNIVERSITY ENVIRONMENT

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Abstract

Introduction: Literacy is one of the basic skills needed in education, understood as the ability, willingness, and confidence to acquire new knowledge. But today literacy is essential in every part of the learning process and it is also a vital part of the information literacy. The information literacy combines a major set of skills, such as media literacy, digital literacy, and critical thinking and in the end – transliteracy, which is a new concept and combination of skills, knowledge, thinking and acting. In every skill set in the new digital age, we are all part of, the intellectual property plays an essential role – it is an inseparable part of information literacy (IL). We witness the fast development of human intellectual activity that leads to creating intellectual products, thanks to the personal creativity.

The goal: The main goal of this paper is to make a definition of intellectual property literacy (IPL), demonstrate the value of IPL and how it should be integrated in education. The training in IPL gives understanding the importance of protecting the rights of people that create something unique. Intellectual property rights give innovators the opportunity to protect their rights, providing legitimate commercial opportunities. Intellectual property literacy training should be integrated into the information literacy programs and be an obligatory discipline, part of the curricula for every university degree.

The methodology for achieving the objective of the study and solving the set research tasks include the following specific methods: content analysis, comparative analysis, and synthesis of the obtained information

Conclusion: The positive education environment suggests that information literacy programmes should be promoted as a way of enhancing students' understanding of intellectual property issues. Intellectual property is vital for creativity if students are aware and able to use IP effectively. The IPL training will even encourage collaboration across the academic community.

Keywords: literacy, information literacy, intellectual property, university information environment.

1 INTRODUCTION

UNESCO has been at the forefront of global literacy efforts since 1946, advancing the vision of a literate world for all. The organization dedicated to education, science and culture proclaimed the 8th of September for International Literacy Day in 1966 to remind the international community of the importance of literacy for individuals, communities and societies, and the need for intensified efforts towards more literate societies. The issue of literacy is a key component of the UN's Sustainable Development Goals and the UN's 2030 Agenda for Sustainable Development. As understood, literacy is the ability to identify, understand, interpret, create, communicate, and compute, using printed and written materials associated with varying contexts. And literacy is implemented in every aspect of our lives. Learning in today's digital age is facilitated and enabled by resources that learners can easily access on the Internet. This involves a set of skills also including the ability to search, evaluate, and select resources to support students' learning. Academic skills for learning success in higher education covers a wide range of skills, for example: reading for meaning, note taking, academic-writing, problem-solving, critical thinking, and communication skills. As a result, the 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" [1]. 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 [2]. Due to this rapid development, IL now includes a whole set of skills and competencies, and that is also the digital literacies, that for academic learning involve more than Facebook, Snapchat or Twitter and the associated technical skills in using these technologies. One of the essential skills that is arising, thanks to the contribution of digital literacy, as

part of IL, is the understanding of the ownership of someone's creative work. Intellectual Property (IP) has become a basic skill and a discipline that should be studied in all university's degrees, no matter the main specialization. This way the university culture of respect and honoring the research work that someone has done will rise. And mostly students will be aware who "owns" the work they have created while studying at university [3]. IP is so valuable that a 2015 study found that intangible assets (which include branding, patents, trademarks, and copyrights) for companies listed on the S&P 500 represented 85% of the average company's total value, compared to 2005 when that percentage was just 46% [4]. Considering mainly the fast development of information and communication technologies (ICT) and the main driving force for that, precisely the intellectual activity expressed in the creative and original works, the intellectual property literacy (IPL) should be treated the same way as the IL. Including IPL into academic IL programs enriches the understanding that students of the discipline literature have about the role of IP in their studies and future employment [5].

2   METHODOLOGY

The main goal of this paper is to make a definition of intellectual property literacy (IPL), based on definitions of information literacy and the concept of intellectual property rights. But also, to demonstrate the value of IPL and how it should be integrated in education. An overview of the Bulgarian universities that already offer education in IP is done.

The methodology for achieving the objective of the study and solving the set research tasks include the following specific methods: method of study and content analysis, comparative analysis; synthesis of the obtained information.

3   INTELLECTUAL PROPERTY AS PART OF INFORMATION LITERACY

3.1   Information literacy and standards – short overview

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), a division of the American Library Association (ALA), 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 [6].

The introduction of the term "information literacy" into the scientific space linked to 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." As Pinto, Cordón, and Diaz [7] point out, information literacy has stimulated considerable, long-standing interest throughout the second half of the twentieth century, and more significantly from the 1980s onward.

The term "information literacy" describes a set of abilities that enables an individual to acquire, evaluate, and use information. IL combines five components: identify, find, evaluate, apply, and acknowledge sources of information. IL is a lifelong learning process, something beginning before arriving at university and is developing all the time. While each skill is individually important, understanding how they fit together is essential to becoming an information literate person. The understanding of every component of IL is essential, mainly because each component is directly linked to IP (identifying someone's work, finding information in that work, etc.) [8].

Definitions and descriptions of information literacy (IL) can be summarized as referring to:

- the use of information and communication technologies (ICTs) to retrieve and disseminate information.
- the competences to find and use the information in information (re)sources;
- the process of recognizing information need, and finding, evaluating, and using information to acquire or extend knowledge.

In 1998, the American Association of School Librarians and the Association for Educational Communications and Technology published "Information Literacy Standards for Student Learning", which identified nine standards that librarians and teachers in K–12 schools could use to describe information literate students and define the relationship of information literacy to independent learning and social responsibility:

- Standard One: The student who is information literate accesses information efficiently and effectively.

- Standard Two: The student who is information literate evaluates information critically and competently.

- Standard Three: The student who is information literate uses information accurately and creatively.

- Standard Four: The student who is an independent learner is information literate and pursues information related to personal interests.

- Standard Five: The student who is an independent learner is information literate and appreciates literature and other creative expressions of information.

- Standard Six: The student who is an independent learner is information literate and strives for excellence in information seeking and knowledge generation.

- Standard Seven: The student who contributes positively to the learning community and to society is information literate and recognizes the importance of information to a democratic society.

- Standard Eight: The student who contributes positively to the learning community and to society is information literate and practices ethical behaviour in regard to information and information technology.

- Standard Nine: The student who contributes positively to the learning community and to society is information literate and participates effectively in groups to pursue and generate information.

A set of standards on IL in higher education was created in 2000. The five standards 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 several 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.

The ACRL rescinded the Standards and replaced them with the Framework for Information Literacy for Higher Education, which offers the following set of core ideas:

- Authority is constructed and contextual.
- Information creation as a process.
- Information has value.
- Research as inquiry.
- Scholarship as conversation.
- Searching as strategic exploration.

Due to the large amount of information that students encounter in their whole educational process, while developing their IL, was developed the CARS Checklist for Online Source Evaluation [9], that is an appropriate means of determining when assessing the credibility of the information coming up in online searches.

- Credibility – Trustworthy source, author's credentials, evidence of quality control, known or respected authority, organisational support. Goal: an authoritative source, a source that supplies some good evidence that allows you to trust it.

- Accuracy – Up to date, factual, detailed, exact, comprehensive, audience and purpose reflect intentions of completeness and accuracy. Goal: a source that is correct today (not yesterday), a source that gives the whole truth.

- Reasonableness – Fair, balanced, objective, reasoned, no conflict of interest, absence of fallacies or slanted tone. Goal: a source that engages the subject thoughtfully and reasonably, concerned with the truth.

- Support – Listed sources, contact information, available corroboration, claims supported, documentation supplied. Goal: a source that provides convincing evidence for the claims made, a source you can triangulate (find at least two other sources that support it).

3.2   Intellectual property – basic concept

The importance of intellectual property was first recognized in the Paris Convention for the Protection of Industrial Property (1883) and the Berne Convention for the Protection of Literary and Artistic Works (1886). Both treaties are administered by the World Intellectual Property Organization (WIPO). IP is usually divided into two branches, namely industrial property (inventions protected with patents, trademarks, industrial designs, new varieties of plants and geographic indications of origin) and copyright (literary and artistic works). For the purposes of copyright protection, the term "literary and artistic works" includes every original work of authorship, irrespective of its literary or artistic merit. The ideas in the work do not need to be original, but the form of expression must be an original creation by the author. Article 2 of the Berne Convention states that: "The expression "literary and artistic works" shall include every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature; dramatic or dramatico-musical works; choreographic works and entertainments in dumb show; musical compositions with or without words; cinematographic works to which are assimilated works expressed by a process analogous to cinematography; works of drawing, painting, architecture, sculpture, engraving and lithography; photographic works to which are assimilated works expressed by a process analogous to photography; works of applied art; illustrations, maps, plans, sketches and three-dimensional works relative to geography, topography, architecture or science. " Article 1 (3) of The Paris Convention states that "Industrial property shall be understood in the broadest sense and shall apply not only to industry and commerce proper, but likewise to agricultural and extractive industries and to all manufactured or natural products, for example, wines, grain, tobacco leaf, fruit, cattle, minerals, mineral waters, beer, flowers, and flour" [10], [11].

We define intellectual property as a general concept of copyright, patent, and other protected rights over the results of human creative activity. International treaties are essential for the establishment of intellectual property. With the WIPO Convention, signed at Stockholm on 14 July 1967, intellectual property is finally and permanently anchored as a concept that refers to all the intangible results of human intellectual property protected by law. Intellectual property legislation aims to protect artists and other creators of intellectual goods and services by giving them certain time-limited rights to control the use of such works. Rights are not valid for the physical object in which creation can be embodied, but for intellectual creation as such. Intellectual property, in general, can be divided into two main categories – "industrial property" and "copyright" [12].

Article 2 (viii) of the WIPO Convention provides that "intellectual property" shall include the rights relating to: literary, artistic and scientific works; performances of performing artists, phonograms, and broadcasts; inventions in all fields of human endeavour; scientific discoveries; industrial designs; trademarks, service marks, and commercial names and designations; protection against unfair competition; and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields.

The WIPO Convention sets the following merged groups of intellectual property objects:

- Objects of artistic and literary property with the legal equivalent of "copyright and related rights".

- Objects of industrial property with the legal equivalent of "patent, design, trademark, and competition law".

- New intellectual property objects, arising from the dynamics of human ingenuity, the development of new information and communication technologies, the improvement of biotechnology and the system of traditional human knowledge.

The Cambridge Dictionary defines Intellectual property in the everyday English (with abbreviation IP) "someone's idea, invention, creation, etc., that can be protected by law from being copied by someone else". The Oxford Learner's Dictionaries sets as Intellectual Property "an idea, a design, etc. that someone has created and that the prevents other people from copying". The Merriam-Webster Dictionary has the following definition for IP "property (such as an idea, invention, or process) that derives from the work of the mind or intellect; also: an application, right, or registration relating to this". It is set that the first use of intellectual property is in 1769, in the meaning defines above. The Collins Dictionary defines "Intellectual Property is something such as an invention or a copyright which is officially owned by someone".

IP rights may be acquired for the following categories of intangible assets [13], [14]:

- Innovative products and processes (through patents and utility models).

- Cultural, artistic, and literary works including, in most countries, also for computer software and compilation of data (through copyright and related rights protection); Trademark, Collective mark, Certification mark, in some cases, Geographical indications

- Creative designs, including textile designs (through industrial design rights); Industrial design

- Distinctive signs (mostly through protection of trademarks including collective and certification marks, but in some cases through geographical indications); Trade secrets

- Microchips (through protection of layout-designs or topographies of integrated circuits); Copyright and Related rights

- Denominations for goods of a given quality or reputation attributable to the geographical origin (through protection of geographical indication); Geographical indication

- Trade secrets (through protection of undisclosed information of commercial value): Protection of layout-designs or topographies of integrated circuits.

3.3 Intellectual Property Literacy and its place in education

Based on the definitions of IL and IP, we can say that IPL is a set of abilities requiring individuals to recognize where IP is needed and to have the ability to collate, evaluate, and effectively used the needed IP [5]. T. Trencheva says that IP could be an element of IL in the university information environment and if students want 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, analyse 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 [2]. IPL helps students easily identify plagiarism and understand the need for reliability [15].

European Intellectual Property Office (EUIPO)' Intellectual Property and Education in Europe report (September 2015) shows that in Bulgaria, IP education does not enter at primary level, but is integrated as a theme across different curriculum areas from lower secondary level on. Copyright is the most taught IP right, with 15 EU countries/regions teaching it, and that includes Bulgaria.

As a regard to the higher education, the Ministry of Education and Science of the Republic of Bulgaria has a Register of Higher Education Institutions. The Register of Higher Education Institutions is kept by virtue of Art. 10, para. 2, it. 3 of the Higher Education Act; the Register includes information about all the higher institutions that have an accreditation in the Republic of Bulgaria.

From a total of 52 higher education institutions in Bulgaria 34 offer education in intellectual property, and 18 do not. And that means that 65% of all higher education institutions in Bulgaria offer education in Intellectual Property and 35% do not. More than the half of the Bulgarian universities' information environment is aware and the students there have knowledge in Intellectual Property. Among the disciplines dedicated to IP are: "Protection of IP" (includes the basics of IP), "Trademarks and patents", "Copyright licensing", "Concession, licensing and patent legislation", "Industrial property and copyright", "Literature and copyright", etc. The disciplines cover all branches of IP [16], [17]. The universities offering education in IP are including:

- Academy of Music, Dance and Fine Arts – Plovdiv.
- Academy of Ministry of Interior – Sofia.
- Academy of Economics "D.A. Tsenov" – Svishtov.
- Burgas Free University – Burgas.
- College of Tourism – Blagoevgrad.
- European Higher School of Economics and Management - Plovdiv.
- European Polytechnical University – Pernik.
- Higher School of Security and Economics – Plovdiv.
- International Business School – Botevgrad.
- University of Telecommunications and Post – Sofia.
- University of Shumen "Konstantin Preslavsky" – Shumen.
- National Academy for Theatre and Films Arts (NATFA) "Krastyo Sarafov" – Sofia.
- National Academy of Music "Professor Pancho Vladigerov" – Sofia.
- Plovdiv University "Paisii Hilendarski" – Plovdiv.
- New Bulgarian University – Sofia.
- Military Academy "Georgi Rakovski" – Sofia.
- Sofia University "St. Kliment Ohridski" – Sofia.
- South-West University "Neofit Rilski" – Blagoevgrad.
- University of Veliko Tarnovo "St. Cyril and St. Methodius" – Veliko Tarnovo.
- Technical University – Sofia.
- Technical University – Varna.
- Technical University – Gabrovo.
- Trakia University (TrU) – Stara Zagora.
- University of Architecture, Civil Engineering and Geodesy – Sofia.
- University of Chemical Technology and Metallurgy – Sofia.
- University of Economics – Varna.
- University of Forestry – Sofia.
- University of Library Studies and Information Technologies – Sofia.
- University of Mining and Geology "St. Ivan Rilski" – Sofia.
- University of National and World Economy – Sofia.
- University of Ruse "Angel Kanchev" – Ruse.
- National Military University "Vasil Levski" – Veliko Tarnovo.
- University of Agribusiness and Rural Development – Plovdiv.
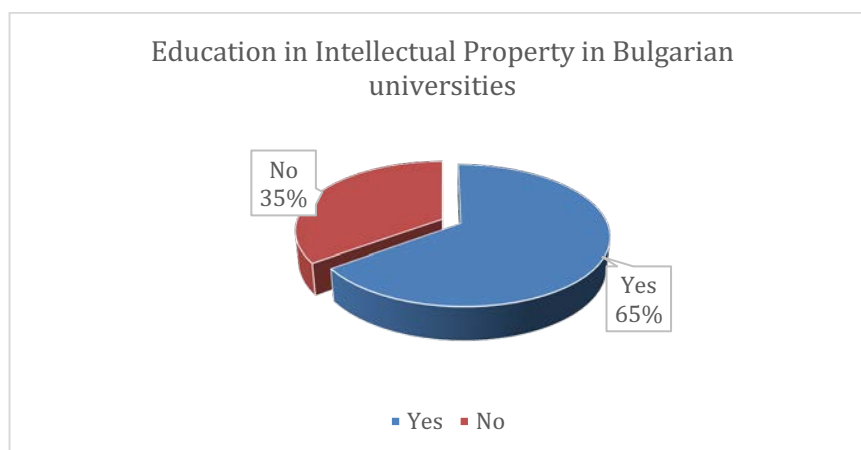- Varna Free University "Chernorizec Hrabar" – Varna.

Figure 1. Percentage of universities that offer and that do not offer education in IP

The above-mentioned universities are offering education in various professional fields, including:

- − 1.3. Pedagogy of teaching in…
- − 2.2 History and archaeology.
- − 3.3 Political Sciences.
- − 3.5 Public Communication and Social Sciences.
- − 3.6 Law.
- − 3.7 Administration and Management.
- − 3.8 Economics.
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- − 5.2 Electrical engineering, electronics, and automation.
- − 5.7 Architecture, construction, and geodesy.
- − 8.1 Theory of Arts.
- − 8.2 Arts.
- − 8.3 Music and dance art.
- − 9.1 National Security.

The education in IPL is applicable and finds its place in diversified professional fields in the university information environment in Bulgaria.

4   CONCLUSIONS

Information literacy skills are vital to success in everyone's personal, professional, and academic life. In university environment, these skills are used by the students to perform well on research papers, projects, and presentations. IL also helps in situations where you must seek out new information to make logical decisions. Each situation requires engagement in the information literacy process. On the other hand, IP promotes economic and social wellbeing through advancement of innovative discovery, protect IP, and IP rights (Article 27, Universal Declaration of Human Rights). As a result, it is not enough to simply teach students how to code, design and invent; they must also learn how to protect what they create. Without this knowledge, their work is susceptible to theft, misappropriation, and potential legal attacks. Equipping students with even a basic knowledge of IP can go a long way in avoiding much larger problems [18], [19], [20].

ACKNOWLEDGEMENTS

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