

# Intellectual Property Knowledge at the University's Information Environment: A Comparative Study

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## Abstract

The paper aims to present some of the main findings from the first stage of realization of the scientific project of the State University of Library Studies and Information Technologies (SULSIT). "Analysis of the Common Practices in the Use of Products of Intellectual Property in University Information Environment" (2012-2014), financed by National Science Fund of the Bulgarian Ministry of Education and Science, Contract No. DMU 03/3-19.06.2012 in competition for "Young Scientists", led by Dr. Teresa Trencheva. The project aims to explore the mind and culture of behavior among young people in Bulgaria, particularly students, to protect intellectual property on the Internet. The paper summarizes the results from the empirical study "Intellectual Property Protection on the Internet", conducted among the students in nine Bulgarian universities accredited in the educational and professional field "Public Communication and Information Science." The survey aims to explore, analyze and summarize the level of the respondents' familiarity with the issues related to intellectual property protection from the lectures at the university, and what is also their attitude about the preservation and protection of copyright in the Internet. The data were accumulated in the period October-November 2012.

## Keywords

Intellectual Property; Copyright; University Education; SULSIT; Bulgarian Universities; Empirical Study

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## 1. Introduction

Scientific interest in the problems of Intellectual Property in the digital realm takes an important position in the research. Copyright and legal issues in the digital reality are of interest for researchers and practitioners, in both, the member countries of the European Union and throughout the world [1]-[6]. There are many discussion issues related to the problematic of Intellectual Property Rights, Copyright and the Internet, but a thorough study of intellectual property as part of the information literacy of students is missing in some European countries including Bulgaria.

Intellectual property is directly related to the information containing in its objects, and in this sense the information resources on the Internet can be assigned to the objects of Intellectual Property. In other words, Intellectual Property is the ownership of the information contained in Intellectual Products and their creators have full ownership of them.

Developing with an unusual rapid pace, Internet is a phenomenon not only in geographical but also in socio-legal sense. Internet is changing the known socio-economic paradigms and the Intellectual Property Right is no exception to this.

Internet was created initially as a tool for military and research purposes in 1969, today it is a global telecommunication network linking computers around the world. Its usage is growing extremely fast. According to the latest statistics from June 30, 2012 Internet users are 2,405,518,376 people, or about 34.3% of the world population. Some of them are so grown accustomed to the “surfing” in its vast space that could hardly imagine their daily life without Internet. This is easily explainable, considering the fact that through the opportunities offered by the network, people around the world achieve nearly simultaneous access to virtually unlimited number of products, services and information.

The surveyed issues are gaining currency with a view to the increasing role and importance of the Internet, which has become an inseparable part of the character of the contemporary student society. The fact is that students are the largest group of our society using scientific products and materials via the Internet. Another key feature, determining actuality of the topic is the increasing importance of the trends for free use of information sources in the digital space for scientific and educational purposes [7].

Accession of Bulgaria to the European Union increased the mobility of teachers and students. The development of this process helps the right to work in each of the Member States which imposes the uniformity of training of specialists related to their awareness on the copyright protection.

This paper is a result of the national survey of attitudes of young people, the students, respectively, to the protection of Intellectual Property in the digital space in the period October-November 2012 as the first stage of the scientific project's realization of the State University of Library Studies and Information Technologies (SULSIT). “Analysis of the Common Practices in the Use of Products of Intellectual Property in University Information Environment” (2012-2014), financed by National Science Fund of the Bulgarian Ministry of Education and Science, Contract No. DMU 03/3-19.06.2012 in competition for “Young Scientists”, led by Dr. Teresa Trencheva.

## 2. Intellectual Property Protection on the Internet—Description of the Survey

### 2.1. Goals, Objectives, Hypotheses and Empirical Research Methods

The contemporary information (already transformed as a knowledge) society imposes new requirements on the competences and adequate knowledge of modern young professionals, graduated their higher education [1]. This is especially true for the professional fields related to information and social sciences, as currently these sciences are one of the most dynamically developing [8]. Analysis of completed procedures for program accreditation of professional fields “Public Communications and Information Science” in Bulgaria gives reason to claim that trained professionals in this field have the knowledge and skills necessary for a successful career. Trained in the professional field are with good theoretical and practical preparation that matches the needs of the country by university graduates in this field [9]. As the main spheres of realization of these specialists are: regional and national media, institutions, governmental and non-governmental organizations, and the use of information resources is the basis of their professional activity and condition for their successful realization, they need to be well informed on the issues of the protection of Intellectual Property.

For this reason, as a target group of the survey “Protection of Intellectual Property in the Internet”, are pre-

ferred students from specialties involved in the professional field “Public Communications and Information Sciences” of all universities in Bulgaria possessing valid accreditation program for training in this professional field. The goal of the empirical study is to identify, analyze and summarize up at what extent the students are aware of copyright issues of the lectures at the university, and what is their attitude to the problems of copyright protection via the Internet. Objectives of the study are to investigate: 1) The level of knowledge and awareness of intellectual property issues; 2) Attitude to intellectual property issues.

Within the framework of the empirical study objective is achieved by solving the following research tasks:

- 1) To establish the level of awareness of the students to the questions related to the protection of intellectual property on the Internet;
- 2) To identify and analyze the level of competence of students in terms of different modes of intellectual property protection in the digital environment;
- 3) To determine the effectiveness of training in intellectual property field “Public Communications and Information Science” and the need to introduce this type of training in universities which do not offer it;
- 4) To register the main types of violations by students against intellectual property of various products on the Internet;
- 5) To determine the attitude of the respondents to the violations in the use of products of intellectual property via the Internet.

The theoretical model of the study and collected and analyzed information to date in the form of publications, as well as the project manager and team members allows towards the empirical part of the study to be approached with hypotheses formulated in the process of theoretical understanding of the problems, related to the protection of Intellectual Property on the Internet by the respondents and the direct connection of training in intellectual property in university environments with increasing responsibility and change in their attitude to the problem, namely:

1) The specifics of education in the professional field “Public Communications and Information Studies” is directly related to the dissemination of information and knowledge. Therefore, professional knowledge, skills and experience that students receive during training are analogous to those necessary for dissemination of information and knowledge in the field of intellectual property. This makes them prepared to work in this area.

2) Object of training in the professional “Public Communications and Information Studies” is a wide range of information products, services, equipment and technologies that are inherently intellectual products, so it’s logical for students to have good knowledge in this field. Lack of competence in the field of intellectual property graduates the above mentioned professional field reduces the effectiveness of their realization and this affects on the state of information literacy.

3) Including training in Intellectual Property rights in the curricula of students in the professional field “Public Communications and Information Studies” is a natural and necessary.

The questionnaire is made for the purposes of the particular survey. It uses a different type of scales—nominal, grades and interval (ex. 5-degrees Likert scale). The questions in the questionnaire have been prepared in accordance with sub-goals resulting from the basic purpose.

After the survey of all persons within the nests inquiry materials are subjected to logical view and control data then entered and subsequently processed with statistical package SPSS for Windows 19.0.

For clarifying the psychometric characteristics of the methods and test the hypotheses are applied the following methods of statistical treatment: descriptive statistic, Student’s t-distribution, correlation analysis; regression analysis; cluster analysis; factor analysis; analysis of variance (ANOVA) [10].

## 2.2. Scope and Limitations of the Survey

Empirical sociological survey is organized and held by a team of young scientists from the State University of Library Studies and Information Technologies. Collection of the data was carried out by both the team and specially hired for this purpose interviewers. The study was done on the principle of systematic random selection with stratification compared to 10% of students in the professional field Public Communications and Information Sciences. The sample covers 9 universities and includes 5 towns. The general aggregation consists of 570 effectively surveyed adult Bulgarian citizens (working in libraries and other cultural institutions), which makes the survey representative for the country.

Data for general aggregation are from the register of National Agency for Evaluation and Accreditation

(NAEA) and the Register of Higher Education Institutions in the Ministry of Education and Science and refer to September 2012. Until September 2012, accredited to conduct training in the professional field “Public communications and information sciences” are 9 universities in Bulgaria:

- 1) Sofia University “St. Kliment Ohridski”;
- 2) State University of Library Studies and Information Technologies;
- 3) Veliko Turnovo University “St. Cyril and St. Methodius”;
- 4) South-West University “Neofit Rilski”;
- 5) New Bulgarian University;
- 6) Shumen University “Bishop Konstantin Preslavski”;
- 7) American University in Bulgaria;
- 8) Bourgas Free University;
- 9) University of National and World Economy.

To achieve maximum accuracy in the study of the general aggregation in view of specificity resulting of the survey information there is a limit, which refers only students in degree “Bachelor”. Data were collected using a questionnaire in the period 1st October-15th November 2012. **Figure 1** presents the distribution by number of the respondents in the surveyed universities [1].

The questionnaire survey was conducted among students who have studied or are studying the course “Intellectual Property Rights” or a related discipline, including a module “Copyright Protection”. For this reason, general aggregation is divided into the first year and fourth year students.

### 3. Status of the Survey Variables

In the research tools for achieving the first sub-goal of the study is included a relatively independent questionnaire containing a block of questions through which is collected information by the third research task, namely to establish the effectiveness of Intellectual Property Training in the professional field “Public Communications and Information Science” and necessity of introducing this type of training in universities which do not offer it (see **Table 1**).

It is notable that the picture of the individual opinions of the students regarding the teaching of Intellectual Property and Copyright is quite colorful. Averages, minimums and maximums, and the great dispersion of the responses to some questions indicate that respondents are impossible to be approached as a homogeneous mass.

From the data in the table it is clear that the answers of the respondents are in the full range of available options. It is clear that with respect to all matters estimates range from  $-2$  to  $+3$ , so the analysis needs to develop in the direction of the distribution of the answers of the respondents in each of the questions in this block of the survey (see **Table 2**).

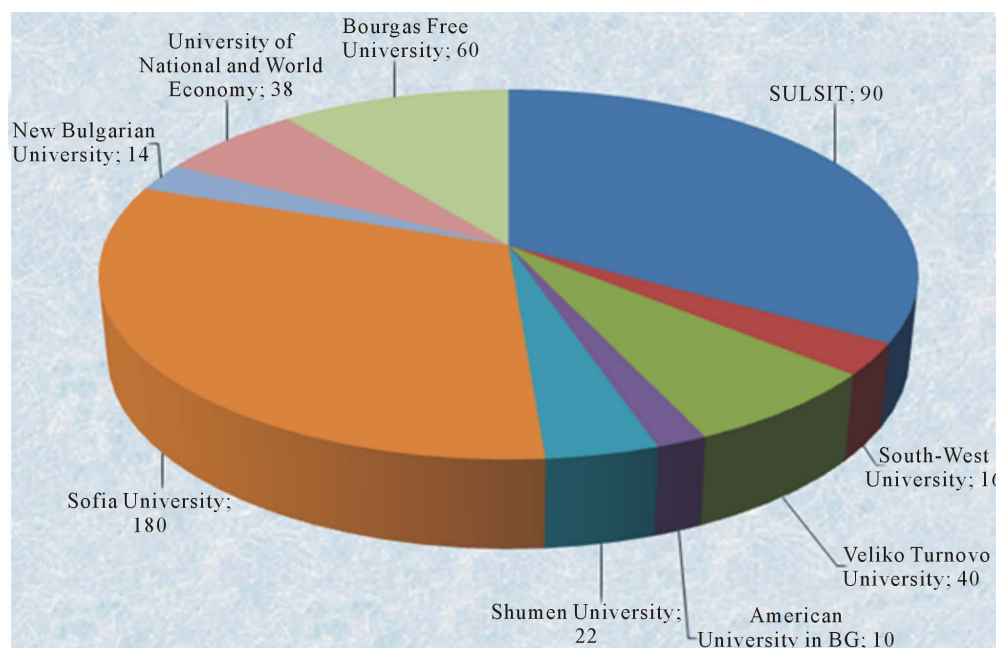
It is noteworthy the high proportion of students (89%) who think it is indisputable contribution of lectures and seminars on Intellectual Property to enhance their information literacy. Only 2.8% see no benefit from training, and 8.1% have no clearly formed position.

The proportion of respondents who believe the educational content in complex intellectual property is 35%, with predominance this time students have no clear position on the issue of the complexity of programs by intellectual property—51%. Only 14% of students in the professional field “Public Communications and Information Studies” are of the opinion that the educational content is simple.

Extremely encouraging is the fact that 71.3% of the respondents consider that the issues and problems involved in curricula Intellectual Property are current. The proportion of students with no opinion on the matter is 21.7%, and only 7% believe that the topic is not relevant.

The following figure gives a visual representation of the profile of the views expressed by the respondents regarding the effectiveness of training in intellectual property field “Public Communications and Information Sciences.” The analysis of the profile shows that the curve in the figure is entirely conditional positive part of the continuum of the rocks, which allowed the development of this problem coincides with the expected trend direction (see **Figure 2**).

The data shows that in the studied professional field there is a certain potential to be developed and used effectively for the development and implementation of training programs in Intellectual Property that will contribute to the professional development and prosperity of graduates falling in that direction. This, on the other hand will contribute to improving the information literacy of students and thus enhance their competitiveness.



**Figure 1.** Target group of the survey.

**Table 1.** Descriptive statistics of the results of the survey.

Questions	Min	Max	M	SD
Contribution of lectures and seminars on intellectual property to promote information literacy (1)	-2	3	1.74	0.99
Level of complexity on the intellectual property educational content (2)	-2	2	0.26	0.78
Relevance of the themes and issues covered in the curriculum for intellectual property (3)	-1	2	0.84	0.81

**Table 2.** Distribution of the respondents' responses on the items of the scale questions.

Question	-3		-2		-1		0		+1		+2		+3	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1			2	.8	5	2.0	20	8.1	51	20.6	119	48.2	50	20
2			1	.4	33	13.6	124	51.0	71	29.2	14	5.8		
3					17	7.0	53	21.7	127	52.0	47	19.3		

The normality of the distribution of responses is represented graphically on the histogram (see **Figure 3**).

Coefficients are: Skewness (-0.97) and Kurtosis (1.28)—therefore, it is quite normal and the data are diverted to the right, *i.e.* to the positive end of the continuum. The data are in the range of normal distribution, according to the aforementioned rules.

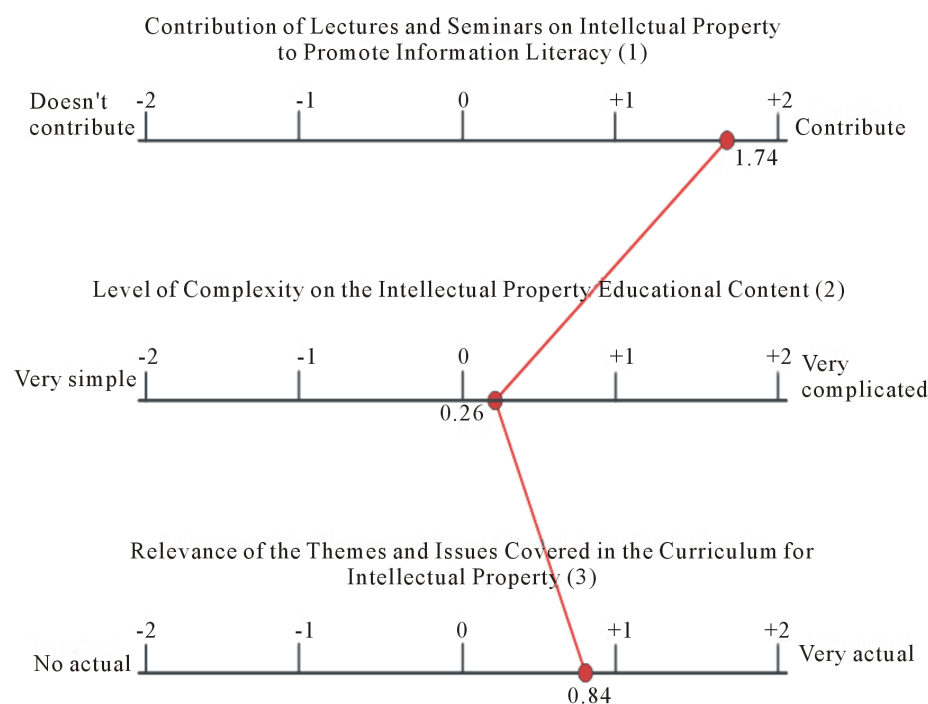
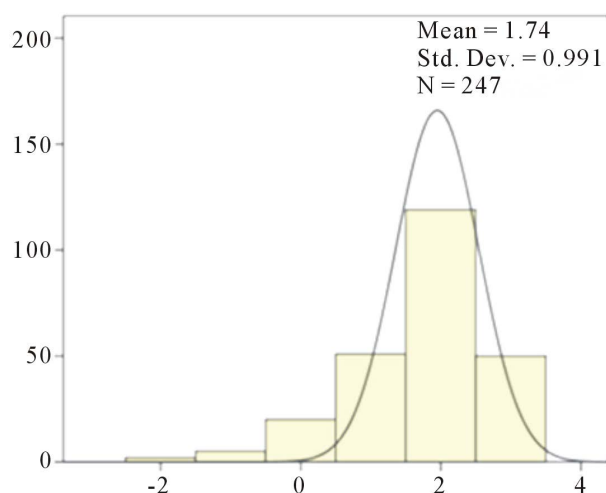
Interrelationships and influences between the measured factors are examined using correlation analysis. The next table shows the results of correlation analysis between the views expressed in the responses to the survey questions and the satisfaction of lectures. Since ordinal data used is the coefficient of rank correlation Spearman. The level of their significance is indicated in the legend to the table.

From **Table 3** it is apparent that the majority of the connections are of mild to moderate. The highest correlation coefficient ( $r = 0.43$ ) between the opinion to promote information literacy as a result of the lecture courses on protection of intellectual property and the actuality included in these lectures topics and issues. The moderate correlation between answers to these questions give reason to claim that respondents valued lectures as useful information to enhance their literacy, a fact that will have an impact on their professional competence. The complexity of the educational content was evaluated by them as adequate to the topic being studied ( $r = 0.28$ ).

**Table 3.** Relationship between the opinions of the respondents regarding satisfaction of the lectures.

№	Questions	1	2	3
1	Contribution of lectures and seminars on intellectual property to promote information literacy (1)	*	0.14*	0.43**
2	Level of complexity on the intellectual property educational content (2)		*	0.28**
3	Relevance of the themes and issues covered in the curriculum for intellectual property (3)			*

\*Significant at level 0.05, \*\*Significant at level 0.01.

**Figure 2.** Profile of the level of knowledge and awareness of the respondents regarding the effectiveness of training in Intellectual property.**Figure 3.** Frequency distribution of the answers of the respondents to the question "Contribution of lectures and exercises to improve your information literacy" with an imposed normal curve.



## 4. Conclusion

The analysis of the profile, examining the effectiveness of training in intellectual property field “Public Communications and Information Science”, and the need to introduce this type of training at universities that do not offer it are entirely contingent positive parts of the continuum of the scales that allowed the development of this problem to correspond to the expected tendencies direction. The profile of the attitude of students to issues relating to intellectual property emerged in a positive trend in which the majority of the opinions of students studying professional field “Public Communications and Information Sciences” are entirely in the positive part of the continuum, which is sufficient to justify the fact of making recommendations to universities, training students in the aforementioned direction, to awaken their citizenship and to think seriously about the investigated problems in this article. The inclusion of disciplines concerning issues of intellectual property protection on the Internet, is natural and necessary, considering the profile of training and realization of the future specialists.

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