Managing Intellectual Property Rights Protection in the System of Comprehensive Secondary Education

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Abstract. This paper provides the results of the survey conducted among the teachers and principals of comprehensive secondary schools of Kharkiv as to their awareness of how to abide by, draw up and defend intellectual property rights. The paper suggests implementing a system of actions to further the qualifications of educators in this area by introducing relevant special courses, delivering lectures and workshops, or obtaining a second higher education degree.

Raktažodžiai: komercializacija, tolesnis kvalifikacijos tobulinimas, išsami vidurinio ugdymo sistema, pedagogai, švietimo naujovės, intelektinės nuosavybės teisės, apklausa.

Keywords: commercialization, further qualification development, comprehensive secondary education system, educators, educational innovations, intellectual property rights, poll.

Introduction

Becoming a country that guarantees adherence to the international regulations in the sphere of intellectual property and related rights protection within its territory, the Ukraine has taken many practical steps to improve this work in certain spheres of economics and social relations. Nowadays, in the system of education the emphasis is on prevention of academic plagiarism in the sphere of higher education and science. However, comprehensive secondary education is left out of the scientific and public debate, though comprehensive secondary education develops and publishes a considerable amount of methodological materials, inventions by authors, elements of best pedagogic practices, didactic, educative and managerial methods and techniques and, on top of it all, participates in scientific research by means of experimental work conducted in comprehensive secondary education institutions. According to statistics, at the beginning of the academic year 2016-2017 the Ukraine had 438,000 teachers, most of whom were innovatively active (State Statistics Service, 2017). Thus,
protection of their intellectual property rights is not only the requirement of international and domestic legislation, but also a certain accelerator of innovative developments in comprehensive secondary education, which is undergoing reforms.

**Objective and purpose of research.** The objective of this research is highlighting issues in the comprehensive secondary education system as to the educators’ awareness of intellectual property protection in order to make certain management decisions to accelerate the preparation processes of protection documents according to the results of innovative activity.

**Literature Review**

Intellectual property rights protection in education is a rather complicated issue. Ukrainian and foreign scientific literature considers the above issues majorly in terms of higher education paying virtually no attention to other branches of education. These issues have been considered by such authors as G. A. Androshchuk, A. I. Boiko, Y. L. Boshitskiy, P. T. Bubenko, O. B. Butnik, O. M. Kozhemyakin, M. L. Lazarev, O. P. Orliuk, V. P. Rubashka, V. M. Timaniuk, N. S. Fesenko and others (Boshitskiy, 2014; Lazarev et al., 2017; Lunyachek, Ruban, 2017). V. E. Shteinberg in particular mentions the complexity of this issue focusing on the necessity to enhance dualism of intellectual property rights protection in this sphere as it is important to clearly distinguish between new pedagogic developments per se and materials that bear plagiarism characteristics and are used by educators inappropriately (Steinberg, 2012).

O. O. Guzhva (2016) states that spreading various forms of academic dishonesty cannot be called a purely national problem, it is a world tendency (McCabe et al., 2001; Wawrzak, 2014), which acquires the form of cheating, plagiarizing and inadequate grading. Development of information technologies, easy access to search for information on the Internet have resulted in the spread of the so-called Internet plagiarism (Jones, 2011).

On the other hand, a high rate of plagiarism and a growing public exposure to plagiarism have an adverse effect, which makes the academic environment more tolerant. Voices have already been heard that if it is such a wide-spread phenomenon, why not start regulating and monetizing it? (Brown, 2015). Today, the issue of plagiarism is even described in the comics *Copyright* published by agreement between the National Institute of Competition and Intellectual Property Protection and the World Intellectual Property Organization (Copyright, 2016).

S. A. Novosyolov highlights that the lack of legislatively defined intellectual property belonging to teachers and educational institutions results in unlimited and unauthorized disposition of their rights for developments. He states that a school principal may be convicted of copyright infringement for using computer software, however, pedagogical systems created by teachers or lecturers are used by anybody and with no perceivable consequences. The created didactic and methodological materials are used with no credit to the authors, which hinders educational innovations and decreases the commercial effect from them (Novosyolov, 2015). S. S.
T. Balok proves that an important condition of creating intellectual property in education is the teacher’s preparedness for innovative activity (Balok, 2008).

In this context, A. P. Shpak mentions the necessity to align the Ukrainian legislation with the EU laws and regulations on intellectual property protection in education in order to ultimately create favourable legal, organizational and economic conditions to ensure legal entities and individuals to obtain, execute and protect their intellectual property rights. The author concludes it is a necessity to upgrade the legal framework through development and adoption of acts on protection of innovations in education as objects of intellectual property (Shpak, 2014).

S. P. Masov conducted a thought-provoking research in patent statistics in education, although he focuses on higher education. He draws a conclusion that it takes specialists four years to obtain copyrights and draw up other protection documents, which practically equals the time required to conduct research for a thesis and perform rather than comply with the standards of the innovative process (Masov, 2015).

It should be noted that Ukrainian scientists pay insufficient attention to intellectual property protection in the system of comprehensive secondary education. There are very few research publications in this sphere. Thus, L. I. Danilenko emphasizes in his work that it is vital to protect patent rights for innovations in education. This paper addresses the issues of innovative activity organization in the system of comprehensive secondary education (Danilenko, 2004). I. Shmanko brings up the problem of providing universal education in protection of intellectual property rights to the staff of pre-school, out-of-school and comprehensive educational institutions on the basis of regional institutions of postgraduate pedagogic education (Shmanko, 2010).

T. O. Redchits suggests equipping the pedagogical and academic staff with competences necessary to adhere to intellectual property regulations and introduce a systemic approach to raising awareness of intellectual property when using information and communication technologies (Redchits, 2011). An example of this strategy is a distance-learning course DL-101 Foundations of Intellectual Property introduced by the Academy of the World Intellectual Property Organization. The course was designed for promoting self-education among the pedagogical staff within the system of post-graduate pedagogical education. Its programs were developed to satisfy the need of educators for knowledge and skills in the field of intellectual property.

O. P. Orlyuk insists that promoting understanding of intellectual property should start as early as in secondary school, if not earlier. Thus, it is vital not only to enhance the qualification level among secondary education staff, but also to impart this knowledge to pupils. For example, the USA has been running the long-term Project XL since 1987 (Orlyuk, 2007).

O. O. Izbash mentions that intellectual property should be regarded as the most valuable resource of an educational institution, which can be a real factor in its economic development as the main source of fundamental and applied knowledge,
which in future may serve as the basis for scientific inventions and discoveries (Izbash, 2014).

Works by authors that come from highly-developed countries certainly deserve our attention. For example, Sh. Lakhan and M. Khurana highlight the necessity to protect intellectual property rights in education worldwide. They claim that more educators should be properly trained in the field of intellectual property in a wider context without limiting themselves to legal aspects only (Lakhan, Khurana, 2007). A. Springer is another researcher who has paid considerable attention to the issues of protecting intellectual property rights for materials used in teaching (Springer, 2004). Another massive long-term study of intellectual property and education in Europe yielded results highly relevant for our research. The authors’ conclusion is that European countries share serious problems in these issues and differentiate the countries by their attitude to tackling the problem. The research provides solid statistics, provides information as to which schools have their curricula include courses in intellectual rights protection (Office for Harmonization in the Internal Market, 2015).

**Results and discussion**

In 2017m the Department of Creative Pedagogy and Intellectual Property of the Ukrainian Academy for Engineering Pedagogy within the planned research activity No. FN 17-1 “Theoretical and methodological foundations for further professional development of educators in intellectual property” studied the awareness of the staff at Kharkiv comprehensive secondary schools of problems related to intellectual property protection. There were 285 participants in the poll. They represented educational institutions of Osnovanskiy, Kholodnohirskiy, Industrialniy, Kyivskiy and Novobovarskiy districts of Kharkiv. The respondents were selected in compliance with the requirements of this type of research. Specialists of the Information and Analytics Department of Kharkiv Regional Institute of Public Administration of the National Academy of Public Administration under the Office of the President of Ukraine participated in the research and data analysis, too. They compiled a corresponding datasheet and processed the materials obtained using the OSA computational program. The polling procedure consisted in filling out a standardized answer sheet in the physical presence of the authorized person. The respondents were 8% male and 92% female. Their age range is represented in Table 1.

![Table 1. Age range of the respondents](image)

<table>
<thead>
<tr>
<th>Respondents’ age</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>16.2</td>
</tr>
<tr>
<td>30-39</td>
<td>16.9</td>
</tr>
<tr>
<td>40-49</td>
<td>29.6</td>
</tr>
<tr>
<td>50-59</td>
<td>29.9</td>
</tr>
<tr>
<td>60 and over</td>
<td>7.4</td>
</tr>
</tbody>
</table>

*Source: created by authors.*
91.8% of the respondents had a higher education degree, including Master’s (32.8%) and 2.9% had a PhD. Most of the respondents (72.6%) had been working in comprehensive secondary education for more than ten years; 8.9% – from 6 to 10 years, and 18.5% – less than five years. The respondents’ distribution by their positions is presented in Table 2.

Table 2. Respondents’ distribution by position

<table>
<thead>
<tr>
<th>Position</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary school principal</td>
<td>15.2</td>
</tr>
<tr>
<td>Deputy principal of the secondary school</td>
<td>13.4</td>
</tr>
<tr>
<td>Teacher</td>
<td>71.4</td>
</tr>
</tbody>
</table>

Source: created by authors.

It is noteworthy that 94% of the respondents stated that they use other persons’ developments and innovations in their work in part or in whole. This majorly happens when they design educational materials while getting ready for classes, drawing up materials and defending their pedagogical experience for the regular evaluation, etc. However, only 67.6% credit the authors of those developments and innovations; 24.5% do this occasionally, which indicates this tradition is lacking in development in secondary schools in the Ukraine. Table 3 presents the survey results for the response to the proposal to provide additional training (professional development) in intellectual property to ensure adherence in the work of the legal regulations on intellectual property and related rights protection.

Table 3. Poll results from comprehensive secondary school educators as to the form of professional development (professional training) in intellectual property

<table>
<thead>
<tr>
<th>Forms of professional training (professional development)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual lecture</td>
<td>68.3</td>
</tr>
<tr>
<td>Special course</td>
<td>10.7</td>
</tr>
<tr>
<td>Planned professional development</td>
<td>18.1</td>
</tr>
<tr>
<td>Second higher education (another Master’s Degree)</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Source: created by authors.

The results obtained prove that most educators working in comprehensive secondary education are not prepared to acquire systemic knowledge in the protection of intellectual property which can be conditioned by their low motivation resulting from their poor legal standards and indicative of faulty legislation in the field. At the present stage of Ukrainian social development, control of copyright protection in many spheres, including education, remains inadequate. This problem for the Ukraine can be classified as systematic. Its solution will not only contribute to the Ukraine’s positive image in the international arena, but will also contribute to attracting foreign investment. At the same time, the best way of shaping the relevant culture is working
with the educational staff and pupils in comprehensive secondary schools.

This statement finds support in the opinion of the absolute majority of the respondents (71%) who consider conducting classes or other events for teaching intellectual property foundations to be essential for 10-11th graders; 28.3% – for 8-9th graders. Only 4% believe that such classes are useless in comprehensive secondary education. 77.3% of the respondents answered the question “What are the objects of copyright?” correctly (literary and fiction works, computer software, data bases, etc.). Besides, most of the respondents chose several variants of the answer, including incorrect ones, which is also indicative of lack of knowledge in the given area and attempts to find the correct answer intuitively. Only 42.8% of the respondents gave the correct answer to the question of how copyright for a piece of work emerges (as a result of its creation). There were also interesting answers as to the persons or organizations that may be subjects of intellectual property rights. The correct answer was given by only 61.7% of the respondents (Table 4).

Table 4. **Poll results as to persons or organizations that may be subjects of intellectual property rights**

<table>
<thead>
<tr>
<th>Multiple Choice</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only governmental and social organizations where the author works</td>
<td>3.9</td>
</tr>
<tr>
<td>Only the author of the object of the intellectual property rights and other persons to whom the personal non-material and/or property rights belong</td>
<td>61.7</td>
</tr>
<tr>
<td>Only the author(s) of the object of the intellectual property rights</td>
<td>25.1</td>
</tr>
<tr>
<td>Only employers of the author of the object of the intellectual property rights</td>
<td>9.7</td>
</tr>
<tr>
<td>Any private individuals or legal entities during the term of validity of the protection document</td>
<td>-</td>
</tr>
</tbody>
</table>

*Source*: created by authors.

As for the organization that registers and issues the inventor’s certificate in the Ukraine, only 22.9% of the responders answered correctly (Ukrainian Agency of Copyright and Related Rights). The results are available in Table 5.

Table 5. **Poll results as to organizations in Ukraine that register and issue inventor's certificates**

<table>
<thead>
<tr>
<th>Multiple Choice</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual Property and Rights Institute</td>
<td>55.6</td>
</tr>
<tr>
<td>Ukrainian Institute of Industrial Property</td>
<td>4.0</td>
</tr>
<tr>
<td>Ukrainian Agency of Copyright and Related Rights</td>
<td>22.9</td>
</tr>
<tr>
<td>State Enterprise &quot;Intelzakhist&quot;</td>
<td>9.5</td>
</tr>
<tr>
<td>Ministry of Education and Science of Ukraine</td>
<td>7.6</td>
</tr>
</tbody>
</table>

*Source*: created by authors.

Awareness is low among the educators employed in comprehensive secondary schools of copyright on the Internet, developing applied and basic software, etc. Only
55.2% knew that computer programs (data bases) are protected by the Law of Ukraine “On Copyright and Related Rights” as literary pieces (collections). In fact, none of the respondents had any idea how certain content on the Internet is protected, and what is their intellectual property. As for the objects protected with copyright, most of the respondents (84.5%) have a correct idea about them, i.e. when using such objects in their work, educators of comprehensive secondary schools must understand the necessity to credit the authorship. However, this happens sporadically. The indicators that concern objects protected by related rights proved to be much lower. Only 53.5% of the respondents chose the correct answers. At the same time, it was discovered that only 28.83% of the answers were correct to the question of what a copyright sign must contain and be followed by (the Latin letter “c” in a circle: ©, the name of the person who holds the copyright, the year of the first publication of the piece of work).

Concerning the question about the property copyright duration, the correct answer (throughout the author’s life plus 70 years after his/her death) was given by 55.6% of the respondents. As for the duration of the property related rights, the correct answer (during 50 years after the first recording of the performance (publication, promulgation) counting down from January 01 of the next year) was given by 44.02%. Generally speaking, the problem of inheritance of property copyright has not been properly analysed, which results in systemic infringement of the inheritors’ rights. The awareness of the respondents of the aspects that can be considered as such that violate intellectual property rights, is low. The correct answers (piracy, plagiarism, unfair competition, forgery and falsification of data) was provided by only 45.6%. Other respondents generally chose only one of the correct infringements of intellectual property, for instance, plagiarism – 44.8%. This indicates poor knowledge of not only laws in the sphere of intellectual property protection, but also of basic provisions of laws in the sphere of education, which today clearly defines such notions as “academic plagiarism”, “self-plagiarism”, “false evidence”, “falsification”, etc.

Another important problem for the Ukraine is intangible assets accounting. Research proved that only 44.9% of the respondents understood in which form intellectual capital in the context of financial accounting is carried out at enterprises (at organizations) (in the form of intangible assets). The respondents also demonstrated poor results when performing competence-based tasks. For example, the task involving interpretation of the following sign: © PATRIOT, 2017 (copyright that belongs to the Patriot organization; 2017 is the year of the first publication) was completed correctly by 56.7% of the respondents. As for the question who can manage property rights for copyright and related objects, it was correctly answered by 57.6% of the respondents. 50.4% of the survey participants knew the duration of the personal non-property rights of authors for a piece of work. As for the question about how to manage property rights of copyright and related rights subjects, it was answered correctly (personally, or with the help of a solicitor, or an organization of collective management) by 58.4% of the respondents.
Despite the fact that the regulatory bodies and scientific communities have recently been paying much attention to the problem of plagiarism, making certain amendments to the norms and regulations (which has been mentioned above), only 68.6% of the respondents understood the meaning of plagiarism (promulgation (public release), in whole or in part, of someone else’s work under the name of the person who is not the author of the given work). The staff in comprehensive secondary schools are still poorly aware of what legislation the Ukraine relies on in case of discrepancies between the legislative acts or provisions of the Ukraine and international regulations on protection of intellectual property rights. Only 32.3% of the educators gave the correct answer. As for what creative spheres are conventionally regarded from the standpoint of intellectual property objects, this question was answered correctly (art and technology) by 61.6% of the respondents. Only 39.3% of them understand what document is issued to certify copyright for objects (a certificate). Just 18.6% of the respondents know that the document for a related right object is not issued. At the same time, 69.4% of the respondents know that data bases are protected as copyrighted.

A total of 52.4% of the respondents gave the correct answer to the question of what group of intellectual object property includes performances, lectures, speeches and other oral compositions. This indicates that most secondary school educators do not dwell on protection of their intellectual content when teaching. A positive thing that was revealed by the survey, is that most of comprehensive secondary educators know what legal liability according to the Code of the Ukraine on Administrative Offenses for illegal use of objects of intellectual property rights, misappropriation of copyright, or other intentional infringements of intellectual property rights, which entails a fine at the rate of ten to two hundred non-tax minimum incomes of citizens, including confiscation of the illegally manufactured products, equipment and materials that are intended for its manufacture. 87.2% of teachers and managers of comprehensive secondary education institutions gave the correct answer (Code of Ukraine on Administrative Offenses, 1984).

The majority (87.9 %) know about plagiarism being classified as a felony. According to Article 176 of the Criminal Code of Ukraine, “...illegal copying, distribution of works of science, literature and art, computer programs and data bases, as well as illegal copying, distribution of performances, phonograms, video-grams and broadcast programs, their illegal circulation – <...> are punishable with a fine at the rate of two hundred to one thousand non-tax minimum incomes of citizens, or corrective labour for a term of up to two years, or imprisonment for the same term” [8,9]. Another aspect of the issue analysed deserves attention. When carrying out the research, we also studied the patents for objects of intellectual property in the system of comprehensive secondary education in Ukraine. The results obtained revealed a number of trends, in particular:

- patents have mostly been issued to inventors of instruments and devices for elementary schools, textbooks for literacy training, complexes of learning tools, etc. At the same time, their proportion is quite low in the total number...
of the protection documents obtained;
- inventors and holders of these patents are mainly education workers who act as individuals, but not as representatives of certain educational institutions;
- registered inventions are mainly of no commercial use.

Thus, institutions of comprehensive secondary education as subjects of innovations are not at the forefront of protection documents issuance for inventions of their employees, which, on the one hand, hinders the process of innovation creation, but, on the other hand, provides for mass infringements of rights for the intellectual property created in these institutions.

Conclusions

1. Ukraine lacks a practice-oriented system for protecting the intellectual property rights of comprehensive secondary school educators during the innovative activity they are conducting. In fact, heads of education management bodies and principals of educational institutions fail to ensure strict adherence to copyright when publishing the author’s materials of teachers and other staff members. Consequently, when evaluating staff and management employees at comprehensive secondary educational institutions, it must be mandatory for them to have a copyright certificate for the approved best pedagogical practice, certain innovative developments, etc. In this regard, it is vital to focus on commercialization of the inventions of the authors employed in comprehensive secondary education as an important part of innovative activity. It is also be desirable to work out a system of stimuli (both moral and financial) for the staff of comprehensive secondary educational institutions for execution of protection documents for their author’s inventions, which, in its turn, will become a catalyst of innovative processes in education.

2. Ukraine has not developed a tradition of wide public discussion of problems that address intellectual property rights protection in the system of comprehensive secondary education, which requires some improvements both at the governance level and when cooperating with mass media. The pedagogical community’s activity is low when it comes to applying for protection documents for certain author’s inventions in comprehensive secondary education.

3. An urgent and timely requirement is systematic professional development in the sphere of intellectual property of the pedagogical and managerial staff in the system of comprehensive secondary education. For institutions of comprehensive secondary education, which are leaders in innovative activity, it is desirable to employ a specialist (for example, a chief librarian) who has a second higher education degree in intellectual property management.

4. The Ministry of Education and Science of Ukraine must handle the issue of designing a course of training sessions (perhaps, optional) at the level of laws and regulations in order to provide pupils with information on protection of intellectual property rights. This knowledge should be imparted to junior and middle schoolers in a game format.
5. As to perspective research areas, we can single out studies to be conducted among the workers in the comprehensive secondary education system who work in rural districts, designing of special courses for professional development in intellectual property, preparation of practice-oriented research and methodological guidelines for teachers and managers of institutions of comprehensive secondary education.

References
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Intelektinės nuosavybės teisių apsaugos valdymas visuotinio vidurinio ugdymo sistemoje

Anotacija

Šiame straipsnyje pateikiami apklausos, atliktos tarp mokytojų ir valdininkų, atsakingų už visuotinį vidurinį lavinimą Charkovo mokyklose rezultatai. Straipsnyje analizuojami respondent požiūriai apie tai, kaip laikytis, parengti ir ginti intelektinės nuosavybės teises. Galiausiai siūloma įdiegti veiksmų sistemą, siekiant tobulinti pedagogų kvalifikaciją šioje srityje, pristatant atitinkamus specialius kursus, paskaitas ir praktinius užsiėmimus arba antrosios aukštojo mokslo laipsnio įgijimą.

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