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## Intellectual property in digital communication and the education of information architects

For many years in different academic centers, research on the degree of adaptation of students to the needs of future employers are conducted, which translates, among other things, into modifying the plans and curricula and the creation of new fields of study. In 2008, according to estimates of the World Intellectual Property Organization (WIPO), around 700 universities worldwide provided courses in the protection of intellectual property[1]. In connection with the introduction of the Polish Qualifications Frameworks it was considered that the system of education in this respect is warranted and needed. Due to changes in the program a few years ago the educational offer of the Polish universities was enriched with a new faculty – Protection of intellectual property, assuming the orientation of the educational process onto the needs of the labor market and the development of the knowledge-based economy[2].

In the works on intellectual property executed by different communities, its essence and role of its protection in today's innovative enterprise was stressed (copyright, industrial property, know-how), with particular reference to of industrial property. The functioning of the intellectual property on the national, European and international scale was presented and characterized. Benefits and drawbacks of the protection of intellectual property were shown along with its particular role in innovative activities of enterprises and in the process of commercialization and technology transfer[3].

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1   M. Salamonowicz, *Prawo własności intelektualnej jako przedmiot na studiach prawniczych (zakres, metody i efekty akademickiego kształcenia)*, „Studia Prawnoustrojowe" 2015, no. 28, p. 123–143.

2   The issue bears some similarities to a study conducted under the auspices of the European Union in Poznan which analyzed employers' expectations of the project *Kadry dla Gospodarki* (KdG) [HR for the Economy]. Cf. *Stopień dostosowania umiejętności studentów do potrzeb przyszłych pracodawców. Raport metodyczny*, M. Andrałojć et al., Poznań 2015, p. 4.

3   S. Motyka, *Ochrona własności intelektualnej w działalności przedsiębiorstw*, [in:] *Innowacje w zarządzaniu i inżynierii produkcji*, ed. R. Knosal, Opole 2012, p. 78–88. Cf. A. Karaś, A. Mikos, *Ochrona własności intelektualnej w przedsiębiorstwach regionu małopolskiego*, „Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie" 2015, vol. 27, no. 2–3, p. 55–65.

In accordance with the requirements of the development of plans and programs of education taking into account the national qualifications framework, and now the Polish Qualifications Framework, for individual fields of study provided for implementation of the scope, methods and effects of the subject matter of the protection of intellectual property. It is worth mentioning that in the Pedagogical University of Cracow it is not a course for general academic faculties or practical ones, nor is it adjusted to a particular curriculum or course of study, but rather, it is a general course and it is identical for all the faculties of the University. The Protection of Intellectual Property is a 15-hours long course, obligatory in the 1st semester of the 1st year of study and is awarded with 1 ECTS point. At the Pedagogical University these classes have been realized by students for several years in the form of e-learning course.

It is addressed to all students of education as a 15-hours long course on the first year of study as a general subject. Therefore, it is hard to assume that it will provide appropriate, specialized preparation of the architects of information, who, for the purposes of their future careers, should have competence to settle complicated issues related to the intellectual property law in the fast-changing digital environment. It is interesting to note that the rapid development of new technologies constantly generates new challenges for the regulatory system related to intellectual rights protection.

A major concern is the diagnosis of achieving adequate results of the implementation of this course in individual provided for responsibility circles. Diagnosis of effectiveness and determination of possible deficiencies in knowledge or educational expectations in this area indicated the need to conduct research among students of information architecture (currently conducted in three university centers) who do not have additional courses related to intellectual property issues – students of the field of architecture information at the Pedagogical University of Cracow (UP) and at the Nicolaus Copernicus University in Toruń (UMK)[4].

In accordance with the Polish Qualification Framework in both centers a course in The protection of intellectual property is offered, and at the Pedagogical University of Cracow, 15 classes are devoted to it in the 1st semester of study, while in Torun, 20 classes in the 2nd semester of study are offered. The curricula of both universities do not offer any other subjects directly associated with this issue at this present moment. The Information Architecture major prepared by the Maria Curie-Skłodowska University (UMCS) in Lublin is quite different in the case of the study curriculum. Apart from the standard course on intellectual property protection (15 hours), there are also courses on similar topics extending the knowledge of students in this field, i.e.: *Law in information activities* (15 hours) and *Media law* (30 hours).

In order to verify the formulated hypothesis, an appropriate questionnaire was constructed and adequate research was carried out[5]. The basis for the findings in the area of the students' competences was a questionnaire – a tool widely used in various types of surveys.[6] The content of the questions was adapted to the subject matter

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4  Due to the different curriculum the AI studies in at UMCS in Lublin were not included here.

5  L. Ippoldt, *Badania ankietowe w pracy bibliologa*, „Annales Academiae Pedagogicae Cracoviensis. Studia ad Bibliothecarum Scientiam Pertinentia" 2008, vol. 6, p. 124.

6  C. Frankfort-Nachamias, D. Nachamias, *Metody badawcze w naukach społecznych*, Poznań 2001, p. 267.

of the study. The questionnaire was constructed in such a way that the obtained answers be a specific source of data used to test the research hypotheses. The applied questionnaire included appropriately ordered (content, structure, order) questions about facts, and the whole was preceded by brief particulars verifying the field of study, age, gender and date of completing the questionnaire[7].

The questions used in the questionnaire concerned the knowledge, attitudes, motivation and expectations of respondents in the field of knowledge of issues related to the protection of intellectual property. The questions (except for the metric ones) can be divided into two main groups: facts and related to subjective experiences. In the conducted study, due to the fact that it was directed to a specific group, i.e. students of a specific faculty, the so-called metrical questions were brought to a minimum, and the questionnaire was based on questions directly related to knowledge about intellectual property law. Precise industry vocabulary was used to minimize the interpretation or misunderstanding of the merits of respondents.

In the constructed questionnaire, closed questions were included that enabled the researchers to compare the results obtained relatively easily between two different academic centers[8]. It was assumed that the whole range of knowledge related to the questions should legitimize the graduates of AI. The knowledge was supplemented with questions about, among others, self-assessment of the level of competences held by the respondents in the scope of knowledge about the protection of intellectual property, the level of usefulness of the content delivered in this field in the classroom and their compliance with the needs of the studied field.

The so-called "funnel strategy" was used, so that the subsequent questions would result from each other, and would create a compact structure to allow clarifying the knowledge of AI students in the field of intellectual property acquired during the implementation of the obligatory course on intellectual property protection.

The respondents were asked to answer specific questions about the key competences in the field of intellectual property. The acquisition and application of knowledge, the use of knowledge in practical operation or skills of own work and ethical behavior were evaluated.

In the case of assessment of the scale of the competencies held, the students applied the following grades: 0 – I do not have such competence, 1 – very poor, 2 – poor, 3 – average, 4 – good, and 5 – very good. Opinions concerning the usefulness of the competence on the labor market were measured as follows: 0 – not useful at all, 1 – not very useful, 2 – just a little useful, 3 – somewhat useful ,4 – useful, and 5 – very useful.

The results obtained in the research became the basis for analyzing and testing the research hypothesis regarding the level of knowledge acquired by students during the course. For the purpose of determining competency gaps, the arithmetic mean was used. The study was performed in May 2018. Finally, 28 questionnaires from the Pedagogical University were obtained (they were completed by first year AI students who completed the intellectual property protection course in the previous semester) and 18 questionnaires from the Nicolaus Copernicus University in Toruń (completed by second year students, because the subject of intellectual property

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7  Ibidem, p. 267–268.
8  Ibidem, p. 271.

protection is implemented there during the 2nd semester, so the current first year students have not yet finished it).

According to the assumptions made, the first two questions concerned the copyright law. The majority of responses from both universities were correct, with slightly better results obtained by students from Toruń (correct answers were at the level of: question 1: 53.6% – UP; 66.7% – UMK; question 2: 60.7% – UP and 77.8% UMK). The next two questions, this time related to industrial property law, posed a lot of difficulties for students from both universities – the vast majority of them did not know that a trademark is granted a protective right (incorrect answers: 78.6% – UP and 66.7% – UMK); they also had problems with defining the necessary condition to ensure protection of an Internet domain as a trademark (incorrect answers: 71.4% – UP and 50% – UMK). It is worth noting that the students from Torun again performed better (though of course not completely satisfactorily).

Interestingly, only half of the respondents were able to correctly answer the question number 5 related to restrictions on the permitted personal use in both universities. Some justification may lay in the fact that the correct solution of this issue requires a broader knowledge of the subject literature and the ability to deepen the interpretation of copyright law[9]. The next question regarding property rights to computer programs created as part of the performance of the employment contract again got a significant proportion of incorrect answers from the students on both universities (42.9% – UP and 33.33% – UMK).

The next two issues, i.e. the perpetuation of the image of another person (e.g. digital photography) and the right to protect the image on the Internet posed a huge problem for the students. The vast majority gave incorrect answers, but this time their percentage was higher in the case of the University of Toruń (question 7: 68.0% – UP and 88.9 – UMK and question 8: 60.7% – UP and 77.8% – UMK).

Regarding the issue of lawful dissemination of fanfiction without the consent of the author/authors of the original work, the respondents showed a bit more knowledge, though some of them gave incorrect answers (46.4% – UP and 33% – UMK).

The students of both universities agreed that they do not have professional experience related to the use of knowledge in the field of intellectual property protection. Some of them point to work unrelated to their study profile. Only a small percentage (and only from the UP) declared contact with intellectual property issues in the context of student internships (other than compulsory) and volunteering.

The low (although in the context of the obtained results, fully justified) self-esteem of the students in relation to their competence in the field of knowledge about the protection of intellectual property is noticeable. It is worth noting that the students from Torun had higher self-esteem, and considered their level of knowledge in this area as average (83.3%) or high (16.7%); in the case of students from Cracow, although the largest group also considered their level of competence as average (53.6%), however, not a small part of them stated that it was weak (25%) or even very weak (10.7%) and few rated it as good (3.6%). Probably problems in providing correct answers to questions in the first part of the survey have contributed to such a relatively low self-esteem.

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9   J. Markowski, *Dozwolony użytek prywatny gier komputerowych*, „Palestra" 2016, no. 7/8, p. 34–40.

The usefulness of the knowledge acquired during the course was rated defi-
nitely higher by the students from Torun. Several facts may have contributed to this:
the classes conducted there have a slightly larger number of hours, they are held in
direct contact with the teacher, and their program is more clearly directed at the
needs of this field than in the case of the Cracow University.

The majority of respondents commenting on the use of knowledge in the field
of intellectual property in practical activity indicated its medium or high usefulness.
However, when assessing the scope of knowledge about intellectual property ob-
tained during the course and referring to the issue of its adequacy to the studied
direction, the largest number of respondents in Cracow rated it as "average" (46.4%)
and in Toruń – "good" (66.7%) .

In the research that concerned academic education in the field of intellectual
property, attention was paid to the frequent use of e-learning tools to familiarize
students with the discussed content and to limit the role of the lecturer to the posi-
tion of a mentor or guide in the selection of sources[10]. In the light of the analysis of
market needs and competences acquired by students in the discussed area, it seems
that students pay a lot of attention to knowledge, for example in the field of fair use,
freedom of citation and reprint law, i.e. the institution of copyright law – focusing on
the level of needs used when writing diploma theses and academic homework – but
by realizing themselves as employees, they definitely broaden the spectrum of the
need to apply knowledge in the field of intellectual property.

In the applied research questionnaire the aims were described as survey ques-
tions. Responses provided by the respondents allowed us to test the hypothesis con-
cerning the insufficient level of knowledge in the field of intellectual property pro-
tection obtained by information architecture graduates. This is particularly evident
in the case of students of the Pedagogical University of Cracow. The obtained results
confirmed the intuition of the authors that the students acquired basic knowledge
in the field of the copyright law, but unfortunately they lack current information
on the use, processing and dissemination of information in the digital environment.
They do not fully understand the very concept of intellectual property and treat it
rather narrowly, not taking into account the multifaceted nature of this issue and its
significance for various activities related to, for example, the creation of online ser-
vices, using domain protection as a trademark or protecting the image in the digital
environment. It seems that the educator should increase the emphasis on the ability
to analyze the diversity of layers of intellectual property subject to protection in
the case of websites or computer games. It is also worth noting that students often
underestimate one of the basic functions related to the intellectual property right,
which is to motivate to the production of intangible goods[11].

It seems advisable that the subject *Protection of intellectual property* be taught
at the Pedagogical University in a form involving direct contact with the lecturer, and
not as an e-learning course standardized for all faculties. In the case of educating fu-
ture information architects, a stronger orientation of this course to the professional

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10  M. Salamonowicz, *Prawo własności intelektualnej jako przedmiot na studiach praw-
niczych (zakres, metody i efekty akademickiego kształcenia)*, „Studia Prawnoustrojowe" 2015,
no. 28, p. 141.
11  I. Bałos, *Prawo własności intelektualnej a metody badań w Internecie*, [in:] *Metody
badań online*, ed. P. Siuda, Bydgoszcz 2016, p. 441.

needs of graduates is definitely needed. The research conducted indicates the necessity of introducing an additional subject related to intellectual property in digital communication in all universities to provide education for information architects.

## Własność intelektualna w komunikacji cyfrowej i edukacja architektów informacji

### Streszczenie

Przygotowanie absolwentów *architektury informacji,* których kompetencje zawodowe w oczywisty sposób wiążą się z przetwarzaniem informacji, przede wszystkim w środowisku cyfrowym, wymaga wyposażenia ich w odpowiednią wiedzę z zakresu szeroko rozumianej ochrony własności intelektualnej. Istotne wydaje się pytanie, czy wystarczające kompetencje studenci *architektury informacji* mogą uzyskać, realizując jedynie podstawowy kurs: *ochrona własności intelektualnej*, obowiązujący na wszystkich kierunkach studiów I stopnia w naszym kraju, czy też potrzebne/wskazane jest wprowadzenie dodatkowego przedmiotu specjalistycznego uwzględniającego specyfikę tego zawodu oraz dynamiczny rozwój nowych technologii stale generujący nowe wyzwania w tym obszarze.

**Słowa kluczowe:** architektura informacji, kształcenie, ochrona własności intelektualnej, przygotowanie do zawodu

**Survey for the students of information architecture on the issues related to the protection of intellectual rights**

city/town/location:                          date:
age:                                         gender:

     Please circle the correct answer

1. A work is subject to copyright from the moment of establishment:
   a) but it must be completed
   b) even if it i not completed
   c) but it must be registered.

2. Unauthorised use is:
   a) not permitted free in the case of already disseminated work for personal purposes
   b) permitted free in the case of already disseminated work for personal purposes
   c) permitted for a charge in the case of already disseminated work for personal purposes

3. A trademark Can be granted:
   a) for a patent
   b) for a license
   c) for a right of protection

4. Protection of a domain as a trade mark is:
   a) possible in any case
   b) possible if distinct
   c) not possible

5. The so-called "permitted personal use" cannot include legal copying and use for personal needs of:
   a) a book
   b) a computer game
   c) a film or sound file

6. As a rule (unless the contract provides otherwise), the substantial rights to a computer program created in the execution of employment belong to:
   a) the employer in 100%
   b) the employee in 100%
   c) the employee in 50% and the employer in 50%

7. Registration of an image of another person (i.e. photography) is:
   a) prohibited by the law on copyright currently in force
   b) allowed in respect of persons who are commonly known in connection with the exercise of public functions
   c) the law currently in force in Poland does not regulate this issue

8. The right of publicity on the Internet:
  a) is lifelong
  b) is lifelong and 20 years after death
  c) is lifelong and never expires

9. The works of fanfiction popular on the Internet can be distributed without the consent of the author/authors of the original work if:
  a) the fanfiction is a work inspired by the original
  b) the fanficiton is a subsidiary work
  c) the fanfiction includes several creative elements

10. How do you rate your work experience in the context of using knowledge of the scope of protection of intellectual rights?
  a) I have no professional experience in this regard
  b) work within the profile of the studies
  c) work outside the profile of the studies
  d) student traineeship and internships
  e) Volunteering
  f) work for student organizations

11. How do you rate the level of competence you hold in terms of knowledge about the protection of intellectual rights?

0        1        2        3        4        5

      0 – I do not have such competence
      1 – very poor
      2 – poor
      3 – average
      4 – good
      5 – very good

12. How do you rate the suitability of the knowledge acquired during the course of intellectual rights protection?

0        1        2        3        4        5

      0 – I do not have such competence
      1 – very poor
      2 – poor
      3 – average
      4 – good
      5 – very good

13. How do you rate the level of knowledge about the use of intellectual rights in practice?
0        1        2        3        4        5

0 – not useful at all
1 – not very useful
2 – just a little useful
3 – somewhat useful
4 – useful
5 – very useful

14. How do you rate the scope of knowledge about intellectual rights acquired during the course? Does it respond to the needs of your field of study?

0       1       2       3       4       5

0 – I do not have such competence
1 – very poor
2 – poor
3 – average
4 – good
5 – very good

Thank you for completing this survey!