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### **Цели, задачи и принципы профессионально-общественной аккредитации образовательных программ**

**Аннотация.** В статье рассматриваются особенности развития систем общественно-профессиональной аккредитации образовательных программ инженерного образования в США, странах Западной Европы и в России.

**Ключевые слова:** *компоненты инновационной культуры, новшества в образовательном пространстве, технология моделирования инновационной культуры, проектная деятельность.*

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### **Digital Literacy in the Area of Digital Safety Among Parents of the Secondary School Students**

The article presents the results of research on the level of digital literacy among parents of secondary school students. The study was commissioned by the Ministry of national education and conducted among 466 parents and guardians in 2016. The aim of the study was to show the level of knowledge and skills regarding electronic threats and views on education in the era of digital media dominance. A competency test measuring knowledge and skills served as a research tool. The results showed that parents have a relatively high level of knowledge in terms of ergonomics of using new media, but an unsatisfactory level of awareness in the field of copyright. The data helped formulate guidelines for improving digital security in the family and school.

**Key words:** *parents, digital literacy, digital competence, electronic security, youth, home.*

**Digital literacy among parents – theoretical framework for the analyses.** Digital literacy (DL) has become the benchmark of modernity, an element that drives the economy and enables more complete social participation, development of digital economy and individual successes (Hobbs et al., 2010; Ziembra, 2018). Technical abilities to use digital media

(installing software, using all the options, website operation, using e-services etc.) are important DL component. However, the holistic view of DL also involves the area of human behaviours, that is, understanding how new media may determine different behaviours, both desirable and risky. In this paper DL will be presented as technical skills of using hardware, software and websites, as well as understanding the mechanisms of changes in behaviours influenced by the new media. This broad definition includes both technical and social aspects of DL.

Most frequently, the literature of the subject presents a utility approach towards digital literacy (McDougall et al., 2018). Sometimes, it is presented as something more than the ability to use digital devices like tablet, phone or computer connected to the Internet, but also all other devices to archive data in the digital form, for example, cameras (Friedman, 2016). DL involves also the ability to receive and interpret media messages critically.

Properly developed DL among parents is of particular importance for modeling the critical cognitive abilities of children and teenagers (Sánchez-Valle et al., 2017). The right level of DL determines the effectiveness of digital literacy among children from the very early age (Davidson, 2012). Thank to socialization and media education, parents develop the patterns of using the new technologies regarding both, the functional aspect and the “soft areas”. It is during the early education when the DL level of parents stimulates the development of e-skills in children and ensures safety of the family environment. The holistic approach to DL among children should also consider peer education (Kirova, Jamison, 2018) and pedagogical activities introduced in schools and pre-schools. In the holistic view, it is parents who are one of the key determinants of the balanced development and education in the digital era (Potyrała, 2017).

The factors which decrease the general DL level may include: being part of disfavoured groups, e.g. immigrants (Machado-Casas, et al., 2014), age, attitude towards the new technologies, e.g. dislike (Tomczyk, Wasiński, 2017), technological ignorance (Tomczyk et al., 2015). Therefore, there are many non-formal educational initiatives all over the world to support the development of DL among parents (Suárez et al., 2016). Educational activities assume positive parenthood with the use of ICT. In Poland, such solutions are, for example, projects commissioned by the Ministry of National Education within the program Bezpieczna+ (Safety+), promoting digital safety in school and family environment. Participation of students, parents and children and youth in different forms of education (competitions, presentations, study visits, lectures, numerous problem-solving methods) is to improve the general level of safety in the cyberspace by eliminating behaviours like: Internet addiction (problematic use of the Internet),

cyberbullying, sexting, piracy or hoaxing, and at the same time strengthening digital resilience.

**Methods.** The purpose of the research was to determine parents' level of digital literacy regarding the digital safety. The study was focused on the online threats connected with problematic situations in the family, with some references to socialization and media education. The study was conducted in Poland, in the 2<sup>nd</sup> half of 2016, among 466 parents of primary school students (grades 4–6, second educational cycle). The sample consisted of 389 women (83,5 %) and 77 men (16,5 %). The respondents lived in: village (56,2 %), town up to 50,000 residents (12,2 %), city with population of more than 200,000 (11,6 %), town with population of 50,000–100,000 (10,9 %), city with population of 100,000–200,000 (9,0 %) Education of parents was: higher (42,9 %), upper-secondary (24,0 %), vocational (13,7 %), primary (12,9 %), post-secondary (6,2 %), lower-secondary (2,32 %), lower-primary (0,2 %). In terms of financial standing, the parents declare their families live: at average level (63,3 %), wealthy (23,0 %), modestly (13,7 %).

The analyses were commissioned by the Polish Ministry of National Education (MEN) and conducted by the Cities on the Internet Association. NAVIGO, the education and research agency, was responsible for the technical aspects of the research. The results presented herein are only a small part of the large nation-wide project focused on raising the awareness of the new media-related threats (Tomczyk, Srokowski, Wasiński, 2016).

The research tool consisted of two parts (competence test and survey). The diagnostic character of the analyses was feasible thanks to the use of the competence test which measured the actual level of knowledge of e-threats. The test consisted of 6 thematic modules: ergonomics of using the digital devices, credibility of information available in the Internet, safe interactions with other users, setting secure logins and passwords, safety of online image and copyright. Every module included three questions about the knowledge and skills of the parents. There were 18 indicators total. The parents got positive point for each correct answer. The competence test allowed to provide 100 % of correct answers. Additionally, the tool was supplemented with the socio-demographic part (metrics) and the part measuring the educational attitudes towards the digital media.

The study was compliant with the ethical principles. Every parent had the complete freedom to refuse to participate in the data collection procedure. The tool was tested in the pilot study. The whole report was submitted to MEN and served as a basis to design non-formal education activities increasing the level of digital safety in Polish schools.

**Results.** The respondents obtained the highest test results in the area of ergonomics of using the digital devices and safety of online image. The weakest component is the knowledge about the copyrights. Thus, the subject

of copyrights requires extra focus in terms of: legality of downloading and sharing files, different types of licenses, understanding the functioning of warez services or recognizing the legal responsibility in terms of protection of intellectual property. Table 1 presents the average results of the competence test consisting of 18 questions in 6 areas.

*Table 1*

**Average results in test measuring the DL level in the area of safety**

Average result	Ergonomics of using digital devices	Credibility of online information	Safe interactions with other users	Logins, passwords, safe logging in	Safety of image in the internet	Copy-rights
56 %	74 %	51 %	55 %	53 %	68 %	32 %

The above average results are diverse due to several important factors. For example, we have noticed, using the single-factor variance analysis ANOVA, that higher test results were obtained in families where: there are set and obeyed rules of using the new media  $F(4,461) = 4,4307$ ,  $p = 0,00160$ ; parents often talk to their children about e-safety  $F(5,460) = 11,701$ ,  $p = 0,00000$  and adults use e-administration services  $F(3,462) = 11,604$ ,  $p = 0,00000$ . In addition, the higher test results in the group of parents and caregivers obtained the respondents: with higher and secondary education  $F(5,460) = 26,535$ ,  $p = 0,0000$  and living at an average financial level  $F(2,463) = 3,0859$ ,  $p = 0,04663$ . Gender did not differentiate the results  $F(1,464) = 0,34466$ ,  $p = 0,55743$ .

Parents in the analysed group are aware of their DL level. There is a confirmed relation that with the higher self-assessment of own DL the competence test results slightly increased  $F(5,460) = 4,8159$ ,  $p = 0,00027$ . Another interesting results were found for the two extreme groups: parents declaring very low level and very high level of DL. Parents who evaluate their DL as very high got the most diverse results. It is also interesting that respondents in the group declaring their DL is very low underestimated their competencies. Therefore, self-evaluation does not always show the actual DL level.

At the same time, we noticed that place of residence influences the results. Those parents who live in the bigger cities obtained slightly higher results in the competence test than the ones living in the rural areas  $F(4,461) = 7,1449$ ,  $p = 0,00001$ . The difference between the average values reached up to 10 %. The correlation is presented on Fig. 2.

The detailed analysis of the identified DL components shows that knowledge and skills in one area are connected with the knowledge and skills in others. This dependency does not always occur in terms of copyrights. The results prove the coexistence of different types of average

knowledge and skills regarding the safe use of the digital media. Thus, DL is a complex, heterogeneous construct.

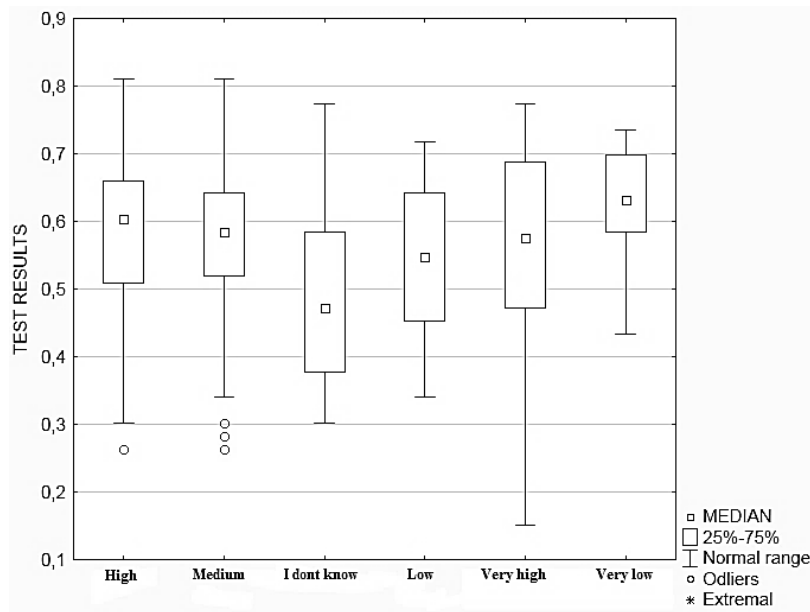


Fig. 1. DL level (test results) and self-evaluation of competencies in the area of digital safety

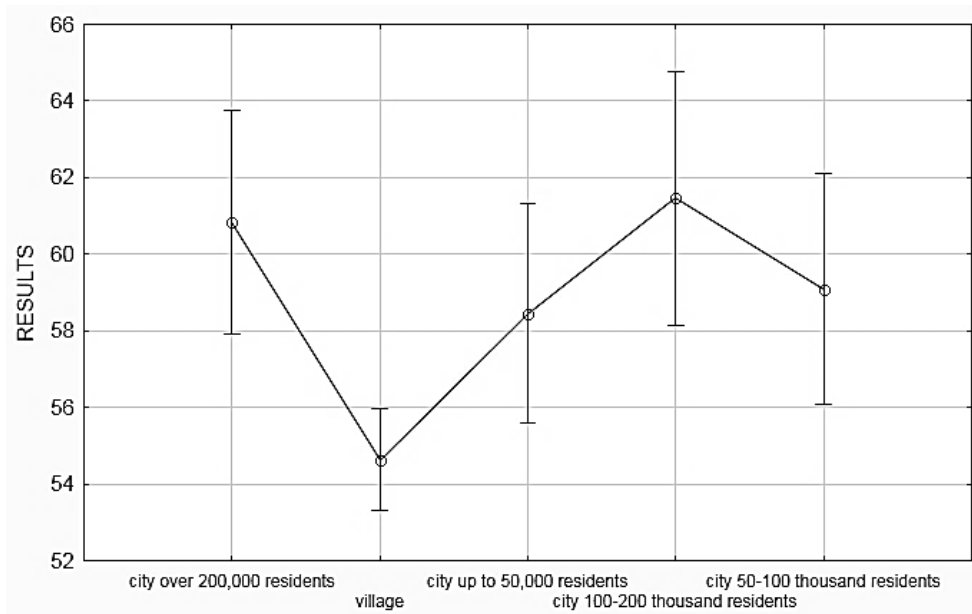


Fig. 2. Differences in the competence test and place of residence

**Discussion.** DL among parents is one of the key elements improving the digital safety in the family. Awareness of adults not only determines the safe use of media, it also helps, by modeling, to increase the level of digital literacy among the youngest family members. Lack of ICT-related technical skills and insufficient awareness of the new media mechanisms may support the development of the risky behaviours mediated by the Internet (Stošić, 2014). Also, based on the gathered results, we noticed that there are many factors differentiating the level of DL such as: place of residence, education,

frequency of using e-services, self-diagnose of knowledge and skills. As for the DL level, parents, teachers and students are a heterogeneous group.

Table 2

**Relations between DL components in the area of safety**

	Ergonomics	Credibility	Image	Interactions with others	Passwords	Copyrights
Credibility	0,2403***	1,0000				
Image	0,3397***	0,3073***	1,0000			
Interactions with others	0,3073***	0,1839***	0,3766***	1,0000		
Passwords	0,3348***	0,1837***	0,3579***	0,2988***	1,0000	
Copyrights	0,0482	0,0956*	0,1048*	0,0985*	0,0821	1,0000

\* < 0,05, \*\* < 0,001, \*\*\* < 0,0001

But this heterogeneity refers also to the definition of DL. The analysed phenomenon includes both, technical and soft skills related to the new media use (Novković Cvetković, Stošić, & Belousova, 2018). In addition, the result analysis confirmed that awareness in one area of DL does not always mean the same level of information about e-threats in another areas. Thus, the concept of DL needs to be further operationalised. It is also worth to emphasise that the dynamically growing use of digital services and applications, and constantly emerging new e-solutions require constant updates in the list of the DL components.

**Conclusions.** The presented research are in line with the principles of the risk paradigm and opportunity paradigm of media pedagogy. In the one hand, it shows the complexity of the DL concept, on the other hand, it proves the importance of activities to reinforce the knowledge and skills and re-orientation or strengthening the attitudes regarding digital safety and positive use of the new media at home and in school. The author is aware of the limitations in the presented analysis of DL (e.g. limited number of e-threats, minimized number of indicators for the variables). This situation was determined by the social research methods, in particular the length of the research tool and the selection of the analysed e-threats set determined by the commissioning institution-project. The presented results also allow to enrich the insights into the educational processes which take place in the family environment in the digital age.

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### **Цифровая грамотность в области цифровой безопасности среди родителей учащихся средней школы**

В статье представлены результаты исследований уровня цифровой грамотности среди родителей учащихся средней школы. Исследование было заказано Министерством национального образования и проведено среди 466 родителей и опекунов в 2016 г. Цель исследования заключалась в том, чтобы показать уровень знаний и навыков относительно электронных угроз и взгляды на образование в эпоху доминирования цифровых медиа. Исследовательским инструментом послужил тест на компетентность, измеряющий знания и навыки. Результаты показали, что родители имеют относительно высокий уровень знаний в плане эргономики использования новых медиа, но неудовлетворительный уровень осведомленности в области авторских прав. Эти данные помогли сформулировать руководящие принципы повышения уровня цифровой безопасности в семье и школе.

**Ключевые слова:** *родители, цифровая грамотность, цифровые компетенции, электронная безопасность, молодежь, дом.*

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