

# State of the Art on Serious Gaming & Internet Safety Skills

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## 1. Introduction

[2-3 paragraphs - a) introduction to the topic, b) importance of the topic, c) summary of the report]

With the advancement of technology and emergence of Web 2.0, young people spent more time in the online world than in the offline one. Children are introduced by parents to the Internet and mobile devices as early as in early-preschool age and start to develop their digital skills. Although it is believed by many, that digital skills reduce the risk of encountering dangerous situations online, the researches of Livingstone and Helsper from 2010 or Sonck and De Haan from 2012 show that reality is different. The higher the presence of youth online the higher the level of encountering online risks (Sonck Nathalie and de Haan, 2014). Thus, the need for the developing Internet Security Skills was recognized.

E-safety, or Internet Security skills, consist of the so-called C3 – cyberethics (online etiquette, protection of copyright, hacking and online addiction), cybersafety (online predators, unwanted communications, avoiding viruses, spyware and malware) and cybersecurity (firewalls, antivirus software, filters to avoid specific internet content and password protection). Youth online is more exposed to encounter risks regarding personal data, cyberbullying and malware that fall into C3 categories. Lack of awareness of youth regarding the risk and how to prevent encouraging it, is a problem that many academics and policymakers worldwide try to address by, for example, organizing “Safer Internet Day” that aims to “aim to promote the safer and more responsible use of online technologies, especially among children and young people across the world” (Nicolaidou & Venizelou, 2020). Research of Annansingh and Veli (2016) show that many internet safety procedures and policies are not up-to-date with ever-changing online environment. Thus the need to create more resources to teach Internet Security Skills to youth. Many researchers worldwide used gamified activities that focus on different aspects of e-safety, such as the protection from hackers, protection of personal data or protection from cyberbullying to teach abovementioned skills. Examples of such games are “Net-Detectives”, “Cybersmart Detectives” or “Auction Hero”. Although the results of this researchers and games show that youth self-assess their Internet Security Skills

as higher than before playing, the results are not objective and quantified (Nicolaidou & Venizelou, 2020).

The first section of this report consists of the summary of existing resources, project or platforms related to Internet Safety Skills in Poland. The training approaches to teaching Internet Safety Skills in Poland are presented in the second section, while all data are concluded in the last part of the report with some recommendations for the learning design concept of the game.

## 2. Application of serious games to enhance Internet Safety Skills

*[1-2 pages - empirical studies that have been conducted in your country or existing resources, projects or platforms related to Internet Safety Skills]*

Many empirical studies have been undertaken in the period of 2000-2019 in Poland regarding the safety of children in the Internet. One of the most recent ones, the report prepared in 2019 by NASK National Research Institute regarding the teenagers in the Internet, indicated that the current curriculum in Polish schools does not prepare student to live in ever-changing technology-based environment. This situation leads to students being ill-informed, for example for many students internet security means cleaning their browser history or blocking access to their devices from their parents or siblings. Taking into account that many respondents that took part in this research indicate to spent more than 4 hours daily online, the possibility of encountering risk online is high for them, and their misinformation about the various risks and how to prevent facing them may lead to dangerous situations online (Bochenek & Lange, 2019).

Over the years, numerous action have been undertaken by the government, foundations or internet providers from Poland to bring the topic of internet security to the forefront and teach the procedures and policies of internet safety. Polish Ministry of Education and Science prepared short online course regarding Internet Safety on their Integrated educational platform (*Bezpieczeństwo w Sieci - Zintegrowana Platforma Edukacyjna*, n.d.). The course consists of videos, texts, exercises and glossary of Internet Safety terms that help to develop Internet Safety Skills. It is not suitable for the young children, but older ones and elderly can find there some useful information. The Centre for Education Development that

undertakes to provide self-development services to teachers also has a course about Internet Safety Skills dedicated to teachers. The course is full of informational materials, reports and books for teachers, as well as infographics that can be shared with students and recommendation of other Internet Safety Skills related projects (*Bezpieczeństwo w Sieci - Ośrodek Rozwoju Edukacji*, n.d.). NASK National Research Institute has an webpage about teaching Internet Safety Skills that is full of books, guides and reports prepared by them, providing teachers and parents with useful knowledge on how to teach their children e-safety skills (*Biblioteka - Publikacje i Materiały | Akademia NASK*, n.d.).

KURSOR is an educational project implemented by NASK and the Science and Knowledge Foundation since 2012 available online on [www.edukator.pl](http://www.edukator.pl). The target group of the project is the entire school community - students, parents, educators and school principals of primary, secondary and high school education. Its main goal is to support the process of safe and effective use of new technologies at school by increasing the awareness of students, teachers, school principals and parents about online threats, as well as by increasing the knowledge and skills of teachers in the field of using modern technologies, multimedia and edutainment in teaching. Within the project, multimedia materials were developed to support members of the school community in acquiring appropriate knowledge and competences. A total of 9 animated films from the "Dwarfs 2.0" series were produced, 12 training multimedia presentations, 3 feature spots supplementing the content appearing in animated films (plus a spot promoting the project); an interactive decision-based game "Rufus in Danger", and an e-book for teachers, containing proposals for lesson plans and methodological materials in the form of information posters (Rywczyńska A. & Wójcik S., 2018; *Kursor | Akademia NASK*, n.d.).

Saferinternet.pl - a program aimed at increasing public awareness of the threats posed by the latest communication techniques. Among the undertaken activities, the priority is given to the education of both children and parents, as well as raising the competences of professionals in the field of safe use of the Internet. The project is one of the main three project founded by Polish Safer Internet Center (PCPSI) that was established in 2005 as part of the European Commission's Safer Internet program, and currently operates under the Connecting Europe Facility program. The Centre were created by the state-owned research



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institute NASK (PCPSI coordinator) and the Empowering Children Foundation. The project itself is carried out by FDDS and NASK in cooperation with the Orange Foundation (*Safer Internet w Polsce | SaferInternet*, n.d.).

Sieciaki.pl is an educational project run since February 2005 by the Empowering Children Foundation as part of the "Child on the Web" program. The Sieciaki.pl project is part of the "Safer Internet" program. The main partner of the project is the Orange Foundation. The basic element of the Sieciaki.pl project is an educational website for children aged 9-11, devoted to children's safety on the Internet, movies, games, songs and educational materials. The Sieciaki.pl project is primarily aimed at educating children about online safety. Within the project materials for teachers, such as e-learning course, class scenarios, an e-book and podcasts, and for parents, such as pointers on how to talk with children about Internet Safety, e-learning course, e-book and podcasts were prepared (*Sieciaki.Pl - Dla Rodziców i Nauczycieli - O Projekcie*, n.d.).

MegaMisja is a free, nationwide educational program for primary schools founded by Orange Foundation. The results of the project can be used during classes or at the school common room. MegaMisja is addressed to teachers and children aged 6-10. The goal of the project is to increase the knowledge and digital competences of teachers, day care educators and their students. To make sure that the youngest are safe and aware multimedia users, and that teachers have access to proven materials, thanks to which they can conduct modern classes for children. MegaMission provides a solid basis for wise and safe movement in a world in which today we will not do without technology. Teachers taking part in the project are provided with the platform full of class scenarios to be used during their classes and children have an access to the educational game (*MegaMisja - Kompetencje Cyfrowe Dla Dzieci i Nauczycieli w Świetlicach Szkolnych*, n.d.).

### 3. Training approaches

There were various training approaches used by those project and entities in Poland regarding teaching of Internet Safety Skills. The most prominent one is the awareness rising approach among parents and teachers about risks that children may encounter online. This is achieved by various reports, e-books, infographics and promotional materials that can be distributed in schools. Materials focused on teaching Internet Safety Skills dedicated to children are full of colorful videos, comics, infographics suited to their interests and needs.

Online comics, videos and serious games are used to teach children Internet Safety Skills. Project Sieciaki.pl allows children to play many different games during which they can learn the most important terms and rules regarding Internet Safety. Online courses for



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teachers and parents are also used to raise awareness between adults and provide them with training and ready-made materials to teach Internet Safety Skills in their classrooms.

Reports suggest that the main difficulty is to stay up-to-date with ever-changing online environment. New risks and threats can be encountered daily (malware or viruses) and out-of-date rules and techniques on how to avoid them may not be enough.

## 4. Conclusions and recommendations

*[Summarise your results and draw some conclusions based on the results. Include also some recommendations for the learning design concept of the game based]*

The results show that Internet Safety Skills are very important in ever-changing digital world. The young members of Internet society has to be equipped with skills that will allow them to surf the net safely and responsibly. Programs and projects available in Poland focus preeminently on rising awareness among parents and teachers, to prepare them to teach the Internet Safety Skills. More and more project that focus on educating young children are being introduced to the public and some of them acknowledge the usefulness of Serious Games.

This study show that the most important thing is while preparing materials for teaching Internet Safety Skills is being up-to-date. The rules and regulations from years ago are not



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useful in current digital world, that's why it is imperative to prepare materials that not only include universal rules of internet security that will always be relevant, but also up-to-date information's that prepare children how to protect themselves from current threats (malware or cyberbullying).

The second thing resulting from this research is the importance of adequateness of the materials to the target group. It is necessary to have in mind, while preparing the learning and game plan, to fit the need, interests and skills of the target group.

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