

Directions and scope of child grooming in the context of modern technologies – a challenge for contemporary education

Authors' Contribution:

- A** Study Design
- B** Data Collection
- C** Statistical Analysis
- D** Manuscript Preparation
- E** Funds Collection

Adam Podolski , Tomasz Warchoń , Krystian Tuczyński 

Institute of Pedagogy, University of Rzeszow, Rzeszow, Poland

Received: 09 October 2023; **Accepted:** 25 October 2023; **Published online:** 06 November 2023

AoBID: 16589

Abstract

The authors of these scientific essay emphasizes the growing threats to children associated with the use of modern technologies, such as smartphones, the Internet, and social media. Children at increasingly younger ages come into contact with electronic devices, exposing them to cyberbullying and grooming. The article focuses on a theoretical and practical analysis of child grooming in the context of contemporary technologies and identifies challenges related to education in today's system.

Various forms of cyberbullying, such as trolling, hate speech, sexting, and grooming, are discussed in the article. These experiences can lead to serious emotional and social consequences, even to suicide attempts. Special attention is given to child grooming, a process of building a relationship with a child for sexual exploitation, which poses an increasing threat to the youngest users of the Internet.

The authors draw attention to the potential dangers of internet applications that allow perpetrators to hide their identity and establish private contacts with children. They also describe the role of schools in the digital world of children, emphasizing the need for education on online safety, the development of digital citizenship skills, and collaboration with parents.

The authors concludes with a discussion of educational challenges related to child grooming and advocates for the creation of a separate school subject dedicated to online safety, ethics, awareness of threats, and crisis management skills in cyberspace. This proposal includes diverse modules such as basics of online safety, privacy protection, cyberbullying, online law, and safe use of modern technologies, aiming to comprehensively prepare students for internet use.

Keywords: cyberbullying • education • hate speech • sexting • trolling

Copyright: © 2023, the Authors. Published by Archives of Budo

Conflict of interest: Authors have declared that no competing interest exists

Ethical approval: Not require

Provenance & peer review: Not commissioned; externally peer-reviewed

Source of support: Departmental sources

Author's address: Adam Podolski, College of Humanities, Institute of Pedagogy, University of Rzeszow, 24 Ks. Jałowego Str., 35-010 Rzeszow, Poland; e-mail: apodolsk@ur.edu.pl

WoS – Web of Science.

Innovative agonology – is an applied science dedicated to promotion, prevention and therapy related to all dimensions of health and regarding the optimization of activities that increase the ability to survive from micro to macro scales [50, p. 274].

INNOAGON – acronym 'innovative agonology' [48].

INTRODUCTION

The contemporary progression of technology, the Internet, and social media introduces a variety of risks for children. Research results confirm that a child's first interaction with a smartphone occurs as early as the first year of life [1, 2]. Ownership and usage of smartphones begin in some cases at the age of 5-6, and in primary school, nearly every student (97.7%) possesses such a device, mainly for communication with parents but also for personal use [3, 2].

In this way, a child gains access to an environment (cyberspace) with Internet access, with the possibility of installing various applications and communicating not only with parents but with the entire online community.

In the chosen topic of this article, the main focus is on the theoretical and practical analysis regarding child grooming in the context of the progression of current modern technologies and applications, which provide a wide spectrum for cybercriminal activities. The article also identifies the challenges existing in the context of contemporary education. In the case of the current educational system, the focus is on identifying educational strategies that can help increase awareness among children, parents, and teachers, as well as in effective prevention and response to cases of cybercrime committed through the use of modern technologies. The content of the article presents compelling arguments for the contemporary need to introduce a subject related to cybercrime committed in the context of children and adolescents into education from an early age.

The aim of this scientific essay is to synthesize children's threats to the phenomenon of cyberbullying, especially grooming, resulting from the expansion of modern technologies, as well as the most important implications and recommendations for prevention in the area of school education.

Contemporary forms of cyberbullying in the realm of children

International research on cyberbullying indicates that over half of children have experienced cyberbullying [4]. Cyberbullying is the phenomenon of intentionally and persistently harming others using various technologies. It encompasses a range of actions such as offensive messages, online harassment, spreading hurtful content,

manipulating others through fake profiles, threats, social exclusion, misuse of private information, and other forms of online aggression [5].

Definitions of cyberbullying may significantly vary depending on the source; however, it is generally understood as a form of online aggression (utilizing electronic devices) that can cause serious emotional and social consequences, ultimately leading to attempts on the victim's life.

It is acknowledged that cyberbullying occurs using electronic devices, most commonly phones or computers. It is also referred to as cyberbullying, online harassment, torment, or persecution on the Internet. Regardless of the terminology, its aim is always to inflict harm on another person. Cyberbullying, like traditional violence, involves deliberate, premeditated actions against a weaker individual who cannot defend themselves [6].

Analysing the phenomenon of cyberbullying in the context of children mainly involves the following forms of cyberbullying: trolling, hate speech, flaming, sexting, happy slapping, grooming [7, 8]. Trolling is intentional behaviour aimed at stirring up conflict among a particular group or online community. Trolls actively provoke other users to participate in discussions, often using an intrusive and vulgar style. One of the key characteristics of such behaviour is sending false information, which serves as bait to provoke conflicts [9-11].

Hate speech is a related phenomenon to trolling, differing in that it involves hatred towards everything and everyone. It mainly consists of insults, negative comments directed at participants of forums, blogs, or websites. A characteristic feature of this phenomenon is that it occurs within online communication [12, 13]. In the context of hate speech, it is worth noting its variation called flaming arguments. It involves the use of vulgarities and insults, similar to hate speech, but not limited solely to social media; it can also occur through text messages and emails [14, 15]. A vastly different issue within child cyberbullying is sexting. It involves sending electronic messages in the form of MMS or publishing private content, mainly photos, with sexual, erotic, or intimate contexts on portals (social media) [16, 15, p. 188]. A popular form of cyberbullying among children is happy slapping, which involves randomly

attacking a child, either by a group or individually, and filming the entire incident. Such videos are then posted on social media platforms and become a means of blackmail against the humiliated person [17, p. 85; 5, p. 14].

Sexual cybercrimes also include grooming, where an adult establishes contact with a child, especially via the Internet, with the intention of sexual exploitation [18, 17, 19]. This form of cyberbullying is increasingly prevalent on the Internet and poses a significant threat to young children who start using electronic devices.

The significance of child grooming in the context of modern technologies

Child grooming is a complex issue that is difficult to define in terms of its beginning and end. Grooming is a prolonged process that involves creating a unique relationship between an adult and a child, often with the aim of seducing and ultimately persuading them into sexual interaction [20, p. 184-190]. Grooming is based on building trust, with the goal of maintaining the perpetrator's anonymity [19, p. 72-74].

Grooming, a modern form of paedophilia, is one of the phenomena that threaten the safety of minors using the virtual space. This phenomenon, in the context of the progress of modern technologies such as the Internet and social media platforms, provides new opportunities for criminals [20]. The Internet provides favourable conditions for paedophiles to plan and execute dangerous actions aimed at manipulating children. Its global and ubiquitous nature, as well as anonymity, enable perpetrators to access new, previously unavailable possibilities. In the online realm, paedophiles can effectively conceal their identities, gradually building relationships with children and manipulating them by gaining their trust and friendship. This opens the door to exposing children to increasingly dangerous situations, where the ease of action is incomparable to the real world [21, 22].

The primary environment for building a 'unique' relationship between an adult and a child is social media platforms. Various studies confirm that every fourth child or teenager has between 5 to 8 accounts on social media platforms, and one-third have more than 8 accounts. Additionally, elementary school students spend over 4 hours on social media platforms exclusively [23, 24]. This provides

a wide spectrum for various criminal activities in the context of finding potential victims. Each action by a perpetrator who utilizes social media platforms is associated with characteristic stages. It often starts with the creation of a fake account on a social media platform by the perpetrator, who posts false information about themselves. It frequently happens that profiles are tailored to potential victims, for example, by establishing a similar age and interests. The foundation of the perpetrator's profile is credibility, enticing their victims to further develop the relationship [25].

In the next stage, using various social media platforms, groomers search and browse materials shared by children to identify their potential victim. Through the popularity of sharing everything in the form of stories, photos, and videos, children's potential victims are identified very quickly [24]. It is worth noting that through the Internet, a perpetrator can find several potential victims simultaneously.

Using modern technologies, groomers quickly initiate communication with their victims and try to gain their trust, aiming to become their best friend [26]. The groomer spends time with their 'target' and builds trust, which becomes their highest priority. In the subsequent stages of acquaintance, closer relationships may develop, including sending pornography from the groomer's side, or the victim sending photos to the groomer in partial undress.

The final stage may involve a meeting with the manipulated child, who is unaware of the dangers awaiting them from the groomer [23, p. 36]. Social media platforms are the environment that provides such an opportunity because they currently lack established and effective tools to verify such issues. Despite efforts by manufacturers to implement various safeguards, it is difficult to guarantee that children are aware of their existence [27].

In summary, the characteristic feature of the Internet and social media platforms is their ubiquity and rapid spread. The possibilities offered by the Internet and the tools available within it make grooming perpetrators feel almost immune. In conclusion, the conditions for grooming have a technological basis, with a decisive human factor among them [27, p. 12-13].

The perpetrator potential of internet applications in the aspect of child grooming

Currently, there are numerous internet applications that are particularly popular among children. Each application allows users to remain anonymous under a pseudonym [28]. These two aspects are the main perpetrators' potentials concerning internet applications used by children, facilitating the concealment of the true identity of the person on the other side of the screen. Internet applications harbour perpetrator potential in terms of private interactions [28, p. 69]. Each internet application provides the capability of sending private messages, creating private chats, which can serve as potential venues for child grooming perpetrators. They enable the establishment of contact with children without the knowledge of other users.

Another significant perpetrator potential lies in privacy infringement [28, p. 9] through the ability to locate victims using internet applications. Existing internet applications, where users can share their current location, pose a significant threat to children who use these applications. As a result, perpetrators can quickly locate their victim, track them, or even abduct them [29].

Internet applications undoubtedly offer another important element through the potential for emotional manipulation by allowing the animation of the message sender. Through the victim's internal conviction of the sender's good intentions, a 'safe channel' is created [19, p. 74-76]. The victim trusts their friend and emotionally attaches themselves to their 'friend' through the internet application, confiding their secrets, plans, and problems.

Another perpetrator aspect is the lack of content filtration in chats created within internet applications. This allows for uncontrolled transmission of content through internet applications, exposing children to inappropriate materials [30]. Furthermore, harmful content for children can somewhat encourage contact with strangers, promote unhealthy patterns, aggression, or negative behaviour on the internet [31]. Currently, all internet applications collect sensitive personal data. This is an easy source for potential groomers, who often purchase stolen data, steal data, or breach passwords to obtain private personal information. Undoubtedly, internet applications have their perpetrator potential. Application designers, internet service providers, lawyers must focus on preventing such threats by implementing online

safety principles, supervising the content available in applications for children, as well as educating children, parents, and teachers.

The role of school in the digital world of children

In the easy accessibility of modern technologies, it is imperative to teach proper Internet usage, social media, applications, and platforms in schools. However, it is not just about proper handling but about technological safety and accountability for actions taken by students online.

Schools should focus on educating students about online safety by organizing classes related to the threats encountered on the Internet. Students should be familiarized not only with the range of benefits of modern technologies and their use in education but also with the potential risks they may face [32]. Cyberbullying, cybercrime, online hate, and internet scams should be part of the curriculum. These issues are currently so extensive and pose a threat to all students that they are becoming more common than writing traditional SMS messages.

Another important aspect is the development of digital citizenship skills. Schools must support students in evaluating online information, in terms of respecting privacy and building positive relationships in the online space provided by the Internet. Ethics online becomes important in this aspect, which contemporary students should be exposed to from an early age [33].

Another aspect of the school in the digital world is the implementation of a digital resource filtration formula. It is not possible to protect students from inappropriate content only in school, so teaching proper filtration of online resources is necessary [33, p. 78]. There is no proper preparation of students for using modern technologies if there is no friendly online culture. The school's task is to promote internet culture based on respect, safety, and collaboration [34]. Therefore, it is very important to modify educational programs in such a way that they motivate students to be responsible digital citizens, both at school and in online communities. Contemporary schools seem prepared to respond to incidents related to online safety. However, they should constantly modify their response procedures, allowing for better preventive actions as well as quicker access to victims with appropriate support [35].

However, in the context of child grooming, besides the above issues, two aspects are crucial. The first is the collaboration of the school with parents, which in this aspect is the foundation of quick intervention. The school should actively and systematically conduct non-formal education workshops during which mandatory training for parents should be provided to give them information and tools to effectively monitor their children's online activity, discuss online safety with them, and work together to create a safe home environment. The last aspect, absolutely flexible, tailored, and supportive of contemporary needs of students and parents, is access to psychological assistance, which must be very well trained also in the field of cyberbullying and child protection in the digital world [36].

Educational challenges in the field of child grooming

Child grooming is a phenomenon that is complicated to detect quickly due to the specificity of the entire process. However, analysing contemporary research results, it must be stated that it poses a challenge for modern education. Without a doubt, modern education should focus on taking swift actions that will raise awareness among students from an early age that various situations can occur on the Internet, they can meet different people, and the Internet is a dangerous place for the younger generation.

Currently, dedicating a few computer science classes or meetings with a school counsellor is not enough. Grooming and other cybercrime phenomena online will expand and intensify their expansion across all possible fields of internet activity. Currently, modern education faces a challenge in terms of online safety. It seems that a proposed and forward-thinking action in this regard is to create an initiative that would aim to establish a separate school subject focusing on aspects of security, ethics, awareness of threats related to grooming, and other crimes. This initiative seems justified because, as research shows, the lack of awareness of the dangers that await students on the Internet is significant.

To the main aspects of such a subject, several content modules can be included. The main and fundamental one is the module concerning the basics of online security. Its scope would involve familiarizing students with basic knowledge of online security. The module's assumption

would be knowledge and skills in creating secure passwords and their management, developing mechanisms to secure passwords, two-factor authentication mechanisms for logging into applications and electronic devices, and the rules of using secure internet connections [37].

Another important module is the significance in terms of privacy protection online, which is associated with principles of managing personal data, effective use of privacy settings on online platforms, and the consequences of irresponsibly sharing personal information [29, p. 18]. Another specification of such a subject is a module on cyberbullying and psychological safety. Its main objective would be to recognize various forms of cyberbullying, the psychological and emotional effects it can lead to, strategies for coping with cyberbullying, and support for victims [38].

It is also postulated that the greatest risk in the context of young children is posed by child grooming, so a module on online grooming is one of the most important. As part of educational activities, students should be introduced to the specifics of this concept, as well as various forms of grooming. They should be taught how to recognize warning signs of online grooming and what safe online practices to maintain in Internet interactions with strangers [27, p. 56].

Given that grooming is a phenomenon mainly developing in social media, responsibility for publishing online content should be taught, practical situations should be created involving the identification of fake profiles and internet scammers, as well as indicating the consequences of cyberbullying on social media platforms [27, p. 53]. Significant in the context of the proposed suggestions is also data security and the assessment of the risk of cyber-attacks [39]. Such a module would involve recognizing the types of cyber-attacks, principles of safe opening of attachments, clicking on links, behaving logically and responsibly in case of suspicion of a cyber-attack.

From various data, it appears that games are the primary activity of students, so assumptions regarding safe online gaming and youth cyber-crime should also be developed. Such a module would include activities aimed at raising awareness of the risks associated with participating in online games, safe use of gaming platforms. The proposal for another module is online law and the

responsibility of netizens, the aim of which is to review the basic principles of law concerning the Internet, responsibility for illegal online content, consequences of copyright infringement, and fair use principles [40].

The subject area should also complement the module on wearable technology and the Internet of Things (IoT) security [29, p. 18]. Currently, every student, even in primary school, wears and uses smartwatches. Therefore, it is necessary to acquaint them also with the risks associated with using these devices, mainly in terms of safe use of wearable devices and those related to IoT, the risk associated with data collection by wearable devices, as well as the principles of safe use of smart devices at home.

The last proposal for an area is the development of reporting and coping skills in crisis situations. This is the last of the proposed areas that may include reporting procedures for threats at school and online, practical exercises on responding to threat situations, developing empathy skills and support for other students [35, p. 19-36]. The educational challenges in the proposed scope represent a comprehensive approach to cyber threats. The proposed content is extensive but seems comprehensive for all students, both in primary and secondary schools. Therefore, one must ask whether such a subject should not appear in the basic and secondary education cycle, such as the subject of Polish, mathematics, or physics. It seems to be a contemporary challenge for many countries and their education systems.

Artur Kruszewski and Bartłomiej Gasienica Walczak determined that since 1902, in scientific journals included in the WoS literature database, authors have used the word 'self-defence' in the titles of over 1,600 works [41]. There is a surprising number of scientific disciplines that are not related to the subject of defensive combat or combat sports [42], or only to human motor activity, as is the case, for example, when fighting a fire, fighting an animal, etc. [43]. Not only the term, but actual self-defence against cyberbullying [44], cyborgization in sport [45], child grooming and other pathologies [46], not excluding science [47], is the special subject of exploration of the new applied science

INNOAGON [48], which covers agonology, i.e. the narrowly understood struggle between people [49, 50].

CONCLUSIONS

In summary, contemporary trends and scopes of child grooming are crucial educational aspects of the 21st century. It must be acknowledged that the modern progress of technology, the Internet, and social media platforms bring numerous threats to children, with one of the most serious problems being child grooming.

The presented article focuses on the theoretical-practical analysis of this issue in the context of the progress of modern technologies and applications, which open up a range of opportunities for cybercriminals. The article presents various forms of cyberbullying, focusing mainly on child grooming. It outlines its process, stages, and the dangers it poses to children using modern technologies. Not without reason, the article focuses on social media platforms because, as the presented data shows, they are mainly the places where child grooming occurs. This situation is caused by the lack of effective tools to verify the identities of the people using them.

The article mainly focuses on the educational challenges related to the phenomenon of child grooming. The authors propose the implementation of a special area of teaching or subject in education dedicated to online safety, ethics, and awareness of the threats posed by grooming. The proposed solution includes specific action proposals in the form of thematic modules, such as fundamental aspects of online safety, privacy protection, cyberbullying, safe participation in online games, legal aspects related to the online space, as well as reporting and coping skills in crisis situations.

A complementary approach to education regarding the threats associated with the area of child grooming is a key element in ensuring the safety of children using modern technologies. The outcome of education should be digital awareness among citizens, possessing the ability to responsibly and safely use internet resources.

REFERENCES

1. Bąk A. Jak małe dzieci korzystają z urządzeń mobilnych? Raport na podstawie danych zebranych od rodziców. *Dziecko Krzywdzone* 2015; 14(3): 55-82 [in Polish]
2. Rideout V, Robb MB. *The Common Sense census: Media use by kids age zero to eight*. San Francisco: Common Sense Media; 2020
3. Urząd Komunikacji Elektronicznej. *Badanie konsumenckie 2021 – dzieci, rodzice oraz nauczyciele* [accessed 2023 Sep 25]. Available from: URL:<https://www.uke.gov.pl/akt/badanie-konsumenckie-2021-dzieci-rodzice-oraz-nauczyciele,412.html> [in Polish]
4. Smahel D, Machackova H, Mascheroni G et al. *EU Kids Online 2020: Survey results from 19 countries*. London: EU Kids Online network, London School of Economics and Political Science; 2020
5. Patchin JW, Hinduja S. *Cyberbullying: An Update and Synthesis of the Research*. In: Patchin JW, Hinduja S, editors. *Cyberbullying prevention and response: expert perspectives*. New York: Routledge; 2012: 13-35
6. Borkowska A. *Cyberprzemoc włącz blokadę na nękanie: poradnik dla rodziców*. Warszawa: Naukowa i Akademicka Sieć Komputerowa – Państwowy Instytut Badawczy; 2020 [in Polish]
7. Kowalski RM, Limber SP, Agatston PW. *Cyberbullying: bullying in the digital age*. Malden: Blackwell Publishing Ltd; 2008
8. Król K, Zawadzki A. *Zjawisko cyberprzemocy w kontekście bezpieczeństwa dzieci w sieci*. *Eduk Ter Opieka* 2020; 2: 179-197 [in Polish]
9. Wallace P. *Psychologia Internetu*. Hornowski T, translator. Poznań: Rebis; 2003 [in Polish]
10. Jachyra D. *Trollowanie – antyspoleczne zachowania w internecie, sposoby wykrywania i obrony*. *Zesz Nauk Studia Inf* 2021; 28: 253-261 [in Polish]
11. Harper D. *Online Etymology Dictionary* [accessed 2023 Sep 28]. Available from: URL:<https://www.etymonline.com/>
12. Pyżalski J. *Agresja elektroniczna dzieci i młodzieży – różne wymiary zjawiska*. *Dziecko Krzywdzone* 2009; 8(1): 1-15 [in Polish]
13. Szymczak E. *Hejting jako przykład współczesnego zagrożenia w przestrzeni społecznej*. *Stud Eduk* 2015; 37: 91-107 [in Polish]
14. Alonzo M, Aiken M. *Flaming in electronic communication*. *Decis Support Syst* 2004; 36(3): 205-213
15. Siemieniecka D, Skinińska M, Majewska K. *Cyberagresja: zjawisko, skutki, zapobieganie*. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika; 2020 [in Polish]
16. Horn T. *Sexting: The Grownup's Little Book of Sex Tips for Getting Dirty Digitally*. Minneapolis: Quarto Publishing Group; 2016
17. Pyżalski J. *Agresja elektroniczna wśród dzieci i młodzieży*. Sopot: Gdańskie Wydawnictwo Psychologiczne; 2009 [in Polish]
18. Craven S, Brown S, Gilchrist E. *Sexual grooming of children: Review of literature and theoretical considerations*. *J Sex Aggress* 2006; 12(3): 287-299
19. Truskolaska EM. *Grooming, czyli uwodzenie małych dzieci przez internet: aspekty kryminologiczne oraz prawne*. *Prawo Dział* 2021; 47: 72-81 [in Polish]
20. Wojnicz P. *Współczesna pedofilia – uwodzenie małego dziecka z wykorzystaniem systemu teleinformatycznego lub sieci telekomunikacyjnej: charakterystyka problematyki*. In: Mrozek J, Banach S, Mazepa S, editors. *National security in modern world: legal, technological and social communication aspects*. Olsztyn: Uniwersytet Warmiński-Mazurski w Olsztynie; 2021: 181-195 [in Polish]
21. Bębas S. *Patologie społeczne w sieci*. Toruń: Wydawnictwo Edukacyjne Akapit; 2013 [in Polish]
22. Dacko-Pikiewicz Z, Walancik M. *Child grooming: niebezpieczne przyjaźnie w cyberprzestrzeni*. In: Dacko-Pikiewicz Z, Walancik M, editors. *Współczesne społeczeństwo w wirtualnej rzeczywistości: wielość szans i dylematów*. Kraków: Oficyna Wydawnicza Impuls, Wyższa Szkoła Biznesu w Dąbrowie Górniczej; 2014: 107-123 [in Polish]
23. Lange R, Wrońska A, Ładna A et al. *Nastolatki 3.0: Raport z ogólnopolskiego badania uczniów i rodziców*. Warszawa: Naukowa i Akademicka Sieć Komputerowa – Państwowy Instytut Badawczy; 2023 [in Polish]
24. Socialpress. *Ile użytkowników na świecie korzysta z mediów społecznościowych* [accessed 2023 Sep 28]. Available from: URL: <https://socialpress.pl/2017/02/ilu-uzytkownikow-na-swiecie-korzysta-z-mediow-spoleszczyownych> [in Polish]
25. Mysior R. *Grooming – uwodzenie dzieci w Internecie*. *Remedium* 2012; 9: 4-5 [in Polish]
26. Płonka J. *Wystarczy jedno kliknięcie. Wykorzystywanie seksualne dzieci za pomocą technologii cyfrowych*. *Probl Opiek Wychow* 2021; 605(10): 41-52 [in Polish]
27. Dąbrowska M. *Grooming: wybrane aspekty prawne i kryminologiczne*. Warszawa: Biuro Rzecznika Praw Dziecka; 2018 [in Polish]
28. *Naukowa i Akademicka Sieć Komputerowa. Bezpieczeństwo dzieci online: Kompendium dla rodziców i profesjonalistów*. Warszawa: Naukowa i Akademicka Sieć Komputerowa; 2014 [in Polish]
29. *Naukowa i Akademicka Sieć Komputerowa. Cyfrowy ślad małego dziecka*. Warszawa: Naukowa i Akademicka Sieć Komputerowa – Państwowy Instytut Badawczy; 2018 [in Polish]
30. *Naukowa i Akademicka Sieć Komputerowa. ABC cyberbezpieczeństwa*. Warszawa: Naukowa i Akademicka Sieć Komputerowa – Państwowy Instytut Badawczy; 2022 [in Polish]
31. Romańczuk-Grącka M. *Grooming – między politycznokryminalną potrzebą a prawnodogmatyczną krytyką*. *Stud Prawnoustroj* 2013; 19: 23-35 [in Polish]
32. Kłak E. *Wykorzystywanie internetu przez dzieci i młodzież – pozytywne i praktyczne aspekty oraz zagrożenia*. *Kult Przem Eduk* 2020; 8: 193-203 [in Polish]
33. Płusa A. *Nauka w cyfrowym świecie transformacji technologicznej i globalnych wyzwań*. Warszawa: Ośrodek Rozwoju Edukacji; 2023 [in Polish]
34. Batorowski D, Filiciak M, Zając JM. *Znaczenie internetu w promocji i dystrybucji treści kultury*. *Studia BAS* 2016; 2(46): 179-203 [in Polish]
35. *Departament Wychowania i Kształcenia Integracyjnego Ministerstwa Edukacji Narodowej. Bezpieczna szkoła: Zagrożenia i zalecane działania profilaktyczne w zakresie bezpieczeństwa fizycznego i cyfrowego uczniów*. Warszawa: Ministerstwo Edukacji Narodowej; 2017 [in Polish]
36. Ciszewska K, Żyża S. *Wspomaganie szkół w zakresie interwencji kryzysowej*. Warszawa: Ośrodek Rozwoju Edukacji; 2015 [in Polish]
37. Żuk J, Żuk M. *Zagrożenia w cyberprzestrzeni a bezpieczeństwo jednostki*. *Rozpr Społ* 2016; 3(10): 71-77 [in Polish]
38. Wojtasik Ł, editor. *Jak reagować na cyberprzemoc: Poradnik dla szkół*. Warszawa: Fundacja Dzieci Niczyje; 2008 [in Polish]
39. Wasiut O, Klepka R, editors. *Vademecum Bezpieczeństwa Informatycznego*. Kraków: AT Wydawnictwo, Wydawnictwo Libron; 2019 [in Polish]
40. Rubisz S. *Normalne korzystanie z utworu i słuszne interesy twórcy jako ograniczenia dozwolonego użytku w prawie autorskim*. *Zesz Prawn* 2021; 21(3): 141-167 [in Polish]
41. Kruszewski A, Gąsienica Walczak B. *Although "self-defence" is an individual case of human defensive struggle and the object of research of the specific sciences dedicated to struggle, it also is a term borrowed by other categories of sciences classified by WoS*. *Arch Budo* 2023; 19: 61-75
42. Harasymowicz J. *Dialogue of an expert with artificial intelligence about the importance and teaching of self-defence*. *Arch Budo Sci Martial Art Extreme Sport* 2022; 18: 147-155
43. Krzemieniecki LA, Barczyński BJ. *The battle with marlin and sharks in Ernest Hemingway's "The Old Man and the Sea" – a perspective on literary descriptions of extreme human activities in the prevention and therapy of innovative agonology*. *Arch Budo Sci Martial Art Extreme Sport* 2020; 16: 137-145

44. Podolski A, Forystek K, Kania K. Cyberbullying and interpersonal aggression as a public health problem – for the consideration of educators and tutors. *Arch Budo* 2022; 18: 317-326
45. Podolski A, Kania K. Cyborgization in sport – a problem on the borderline of interfering with the athlete's body, ethical and pedagogical challenges. *Arch Budo* 2022; 18: 307-316
46. Klimczak J, Kalina RM. Placebo effect – the perspective of diagnosis and therapy of aggressiveness by using fun forms of martial arts during innovative agonology cognitive-behavioural sessions (case study). *Arch Budo* 2019; 15: 57-66
47. Kalina RM. Agonology – the prospect of an effective defence of peace and unrestricted freedom of scientists. *Arch Budo* 2016; 12: 1-13
48. Kalina RM, Kruszewski A. INNOAGON is an acronym for 'innovative agonology', but is not synonymous with 'science of martial arts'. *Arch Budo* 2023; 19: 193-204
49. Kalina RM. Agonology – the unknown science. *Arch Budo* 2016; 12: 231-237
50. Kalina RM. Innovative Agonology – Its Definition, Detailed Theories, General Rule of Struggle, and Laws. Proceedings of the 14th International Conference on Applied Human Factors and Ergonomics and the Affiliated Conferences (AHFE 2023); 2023 Jul 20-24; San Francisco, USA. *Healthcare and Medical Devices* 2023; 79: 272-279

Cite this article as: Podolski A, Warchoń T, Tuczyński K. Directions and scope of child grooming in the context of modern technologies – a challenge for contemporary education. *Arch Budo* 2023; 19: 267-274