Regulation of the legal protection of individual in digital environment within the Croatian educational system

Regulacija zaštite pojedinca u digitalnom okruženju unutar hrvatskog odgojno – obrazovnog sustava

Azra Staščik
Primary School of Dobriša Cesarić Osijek
Osnovna škola "Dobriša Cesarić" Osijek
Neretvanska ulica 10, Osijek
{azra.stascik@skole.hr}

Amanda Glavaš
Faculty of Humanities and Social Sciences
Josip Juraj Strossmayer University of Osijek
Filozofski fakultet Osijek
Sveučilište Josipa Jurja Strossmayera u Osijeku
Ul. Lorenza Jägera 9, Osijek
{aglavas@ffos.hr}

Filip Glavaš
Filip Glavaš, Attorney at Law
Odvjetnik Filip Glavaš
Lučki prilaz 2, Osijek
{filip@odvjetnik-glavas.hr}

Abstract. *The COVID-19 pandemic put the educational system in front of a big challenge, which required an immediate transition to distance learning and digitalization of teaching. Teaching and learning were transferred to virtual classrooms, which required a complete adjustment of the educational system. The aim of research is to examine the legal regulation of individual protection in the digital (educational) environment, at macro and micro level. The examination at the macro level implies a qualitative analysis of the relevant legislation. At the micro level on a representative sample of primary and secondary schools (N=303) documentation analysis was conducted to examined whether schools have regulated this matter internally. The results indicate insufficient legal and internal (only 5%) regulation of safe and responsible use of ICT.*

Keywords. Digitally advanced schools, information and communication technologies (ICT), legal protection of an individual, educational system

Sažetak. *COVID – 19 pandemija stavila je odgojno obrazovni sustav pred veliki izazov, koji je zahtijevao trenutni prijelaz na nastavu na daljinu te digitalizaciju nastave. Nastava je premještena u virtualne učionice što je zahtijevalo cjelovitu prilagodbu odgojno obrazovnog sustava. Cilj je istraživanja ispitati pravnu regulaciju zaštite pojedinca u digitalnom (odgojno-obrazovnom) okruženju, na makro i mikro razini. Ispitivanje na makro razini podrazumijeva kvalitativnu analizu odgovarajućih regulativa. Na mikro razini se na reprezentativnom uzorku osnovnih i srednjih škola (N=303) provela analiza dokumentacije kojom se ispitalo jesu li i u kojoj mjeri škole interno regulirale navedeno. Rezultati upućuju na nedovoljno zakonsko i interno (samo 5%) reguliranje sigurne i odgovorne upotrebe IKT.*

Ključne riječi. Digitalno zrele škole, informacijsko-komunikacijske tehnologije, pravna zaštita pojedinca, odgojno-obrazovni sustav

1 Introduction

Progressive development of technology affects changes in the modern world in every aspect, from

1 Uvod

Progresivni razvoj tehnologije utječe na promjene u suvremenom svijetu u svim njegovim aspektima, od industrijsko-proizvodnih, poslovno-

industrial-production, business-communication, educational, etc. In other words, it can be stated that digital technology has entered all parts of everyday life (NN 22/2018). Information and communication technologies (ICT) provide new ways of communicating, transferring, searching, storing, and exchanging information, and the increased use of ICT is very present in the education system as well, especially school education. The digital competence has been declared by the European Parliament and the Council of the European Union (2006) as one of the eight key competences for lifelong learning, which was accepted by Croatian education policy with emerging of the National Curriculum Framework (NOK) (Fuchs et al., 2011). Additionally, digital competence is the ability to utilize technology effectively, appropriately, securely, critically, creatively, autonomously, and ethically in order to execute activities, solve problems, communicate, manage information, collaborate, and create and distribute material. (Skov, 2016).

Given the scope of the concept of digital competence, various terms and definitions can be found in the literature, which acknowledge existence of various types of literacy in relation to digital competences. In the NOK (Fuchs et al., 2011, p. 17) digital competence is defined as "the ability to safely and critically use information and communication technology for work in personal and social life as well as in communication." For the context of this paper, it is crucial to identify determinants of digital competence: effective and responsible communication and cooperation in the digital environment, understanding and responsible application of security recommendations to protect the individual and taking into consideration legal guidelines when using digital technology (NN 22/2018).

One of the preconditions for the development of digital competence in students is the evolution of schools into digitally developed schools. Digitally developed schools are those schools that have a high level of ICT integration, as well as a systematic approach to the use of ICT in school management, but also within other educational processes (Begičević Ređep et al., 2018).

The Strategy of Education, Science and Technology (NN 124/2014) sets development of informatization of the educational process and the school management process as one of the main aims, i.e., the development of digitally advanced schools (e-schools). The importance of developing digitally advanced schools was particularly highlighted by the emergence of the COVID-19 pandemic when teaching and learning was abruptly moved to virtual classrooms via digital devices. Coincidently, the number of users in digital learning environment rapidly increased, which required quick adaptation of the educational system throughout all (different)

komunikacijskih, odgojno-obrazovnih itd. Drugim riječima, može se reći da je digitalna tehnologija ušla u sve pore svakodnevnog života (NN, 22/2018). Informacijsko-komunikacijske tehnologije (dalje: IKT) donose nove načine komuniciranja, prenošenja, traženja, pohrane i razmjene informacija, a povećana uporaba IKT-a prisutna je i sustavu odgoja i obrazovanja, posebice školskog. Digitalnu kompetenciju Europski parlament i Vijeće (EC 2006/962) proglasilo je za jednu od osam ključnih kompetencija za cjeloživotno obrazovanje, a što je hrvatska obrazovna politika i prihvatila Nacionalnim okvirnim kurikulumom (dalje: NOK) (Fuchs i sur., 2011). Osim toga digitalna kompetencija može se definirati i kao kombinacija znanja, vještina i stavova u vidu korištenja tehnologije sa svrhom obavljanja nekog zadatka, rješavanja problema, komunikacije, upravljanja informacijama, suradnje, kao i kreiranja i dijeljenja digitalnog sadržaja na učinkovit, siguran, kreativan, primjeren, kritički, neovisan i etički način (Skov, 2016).

Obzirom na širinu koncepta digitalne kompetencije u literaturi se mogu pronaći različiti pojmovi te definicije koje uključuju i postojanje različitih vrsta pismenosti vezanih uz digitalne kompetencije. U NOK-u (Fuchs i sur., 2011, str. 17) digitalna kompetencija je definirana kao „osposobljenost za sigurnu i kritičku upotrebu informacijsko-komunikacijske tehnologije za rad u osobnomu i društvenomu životu te u komunikaciji". U kontekstu ovog rada vrlo bitne su odrednice digitalne kompetentnosti: učinkovito i odgovorno komuniciranje i surađivanje u digitalnome okruženju, razumijevanje i odgovorno primjenjivanje sigurnosnih preporuka s ciljem zaštite pojedinca te poštivanje pravnih odrednica pri korištenju digitalne tehnologije (NN 22/2018).

Jedna od pretpostavki razvijanja digitalne kompetencije kod učenika su razvijene digitalno zrele škole. Digitalno zrelim školama smatraju se one škole koje imaju visoku razinu integracije IKT-a, kao i ususstavljen pristup korištenja IKT-a pri upravljanju školom, ali i unutar drugih odgojno-obrazovnih procesa (Begičević Ređep i sur., 2018). Strategijom obrazovanja, znanosti i tehnologije (NN 124/2014) kao jedan od ciljeva postavlja se razvijanje informatizacije odgojno-obrazovnog procesa i procesa upravljanja školom, tj. razvijanje digitalno zrelih škola (e-škola). Važnost razvijanja digitalno zrelih škola posebno se istaknula pojavom COVID-19 pandemije kada se poučavanje i učenje odvijalo putem digitalnih uređaja, a nastava je naglo premještena u virtualne učionice. Tada dolazi do ekspanzije broja korisnika u školskom digitalnom okruženju, što je zahtijevalo brzu prilagodbu odgojno-obrazovnog sustava u svim (različitim) aspektima. Ako već ranije nije bilo regulirano, bilo je potrebno regulirati pitanja odgovornog i prihvatljivog načina komuniciranja i suradnje između učenika, učenika i nastavnika, nastavnika, a

aspects. If it had not been regulated before, now, it was necessary to regulate the matter of responsible and acceptable manner of communication and collaboration among students, as well as among teachers. It was necessary to provide regulations in regard of mutual respect and appreciation and the use of netiquette as protection against abuse. Moreover, it was necessary to choose a secure digital platform, i.e., a secure digital environment in terms of user data protection and online security for virtual teaching and learning to take place. Furthermore, it was necessary to regulate the protection of copyright for the works of teachers (as well as students) from unauthorized publication, sharing of data and content, with respect of sources as well as protection of privacy rights of students and teachers. In other words, it was necessary to create conditions for the protection of the individual in the digital learning environment, i.e., to define acceptable and unacceptable behaviors and to prescribe measures in case of breaching the regulations. Due to the latter, it is necessary to ensure that the acts regulating the protection of the individual in the digital environment are coordinated with the relevant and applicable legislation.

2 Related work

2.1 Croatian legal framework

In order for an individual to be able to protect himself in a digital learning environment, one must have a legal foundation for it. The Constitution of the Republic of Croatia (NN 5/2014), as the legal act with the greatest legal force, defines the highest values of the constitutional order, including respect for human rights (Art. 3), which in the context of this paper would be: the right to personal security, the right to privacy; the right to protection of moral and material interests arising from cultural and scientific creation. Additionally, copyright is regulated by the Law on Copyright and Related Rights (NN 111/2021). Privacy and its protection are regulated by the General Data Protection Regulation (EU 2016/679) and the Law on the Implementation of the General Data Protection Regulation (NN 42/2018). In addition, the issue of online security is based on the Law on Information Security (NN 79/2007). Issues of safety and protection of children within the school environment are specifically regulated by the Law on Education in Primary and Secondary Schools (NN 64/2020). Finally, the protection and well-being of children (even in the field of upbringing and education) is the duty of parents, whose obligations are regulated by the Family Law (NN 98/2019).

s posebnim naglaskom na međusobno poštovanje i uvažavanje te primjenu netiquettea, kao zaštite od zlostavljanja pojedinca. Osim toga, bilo je potrebno odabrati sigurnu digitalnu platformu, odnosno sigurno digitalno okruženje putem kojeg će se odvijati virtualna nastava, u pogledu zaštite podataka korisnika i sigurnosti na mreži. Nadalje, bilo je potrebno regulirati zaštitu autorskih prava radova nastavnika (ali i učenika) od neovlaštenog objavljivanja, dijeljenja podataka i sadržaja, uz poštivanje izvora te zaštitu prava privatnosti učenika i nastavnika. Drugim riječima, trebalo je ostvariti uvjete za zaštitu pojedinca u digitalnom školskom okruženju, tj. definirati prihvatljive i neprihvatljive načine ponašanja te propisati mjere u slučaju nepridržavanja. Zbog potonjeg, potrebno je voditi računa o tome da akti kojima se regulira(la) zaštita pojedinca u digitalnom okruženju budu usklađeni sa odgovarajućim važećim zakonskim regulativama.

2 Teorijska razmatranja

2.1 Hrvatski pravni okvir

Da bi se pojedinac mogao zaštititi u (školskom) digitalnom okruženju mora za to imati zakonsku podlogu. Ustavom Republike Hrvatske (NN 5/2014) zakonskim aktom s najvećom pravnom snagom definirane su najviše vrednote ustavnog poretka unutar kojih je i poštivanje prava čovjeka (čl. 3.), a koja bi u kontekstu ovog rada bila: pravo na osobnu sigurnost, pravo na zaštitu privatnosti, pravo na zaštitu moralnih i materijalnih interesa koji proizlaze iz kulturnog i znanstvenog stvaralaštva. Dodatno, autorska prava regulirana su Zakonom o autorskom pravu i srodnim pravima (NN 111/2021). Privatnost i njezina zaštita uređeni su Općom uredbom o zaštiti osobnih podataka (EU 2016/679) i Zakonom o provedbi Opće uredbe o zaštiti podataka (NN 42/2018). Osim toga, pitanje sigurnosti na mreži podlogu nalazi u Zakonu o informacijskoj sigurnosti (NN 79/2007). Pitanja sigurnosti i zaštite djece unutar školskog okruženja, posebno su regulirana još Zakonom o odgoju i obrazovanju u osnovnoj i srednjoj školi (NN 64/2020). Konačno, zaštita i dobrobit djece (pa i u domeni odgoja i obrazovanja) dužnost je roditelja, a čije obveze su regulirane Obiteljskim zakonom (NN 98/2019).

2.2 Školsko digitalno okruženje

Tradicionalna nastava podrazumijeva nastavnika koji poučava, učenike koji uče, individualno ili unutar grupe, obično koristeći dobro poznata nastavna pomagala: papir, olovku, kredu i ploču. Tradicionalno poučavanje i učenje izdržalo je test vremena i bez obzira na promjene paradigme učenja i poučavanja i dalje je najrasprostranjenije diljem svijeta (Dash i sur., 2021). Uvođenjem tehnologije u

2.2 Digital learning environment

Traditionally, learning environment presumes teacher teaching, students learning, individually or within group, usually using well known tools, paper, pen, chalk and a blackboard. Traditional teaching and learning stood the test of time and is worldwide accepted. (Dash et al., 2021) By introducing technology into education traditional learning environment has transformed. Emerging of technology did not change learning environment just in regard of infrastructure but it produced a new learning environment, beyond physical dimension (Barana & Marchiso, 2021). The learning environment reachable everywhere via Internet using tools such as computers, tablets, or even mobile devices (Yong, 2007, Barana & Marchiso, 2021). Except mere environment and learner, digital devices are necessary to reach learning process, therefore "Digital Learning Environment" (DLE) is name used to describe such learning environment. (Barana & Marchiso, 2021).

There are many definitions of DLE, but the common denominator is of course use of Internet and "Learning Management System" (LMS). In this paper we chose to use term "Digital Learning Environment" as well as Barana and Marchiso definition (2021, p. 498) by which DLE is "a learning ecosystem in which teaching, learning, and the development of competence are fostered in classroom-based, online, or blended settings". Classroom based is a face-to-face modality where students work individually or with peers using digital tools and devices. Online modality presumes the DLE as the only learning environment in online courses (e.g., during COVID – 19 pandemic or professional development courses). Blended modality includes students' learning activities in classroom or computer lab as well as online integration e.g., teacher assigning homework online. The third modality is one frequently used and stayed in practice even after the pandemic (Barana & Marchiso, 2021).

2.3 Analysis of used digital learning environments during the COVID-19 pandemic

Croatian education policy defines the development of digitally mature schools as one of the goals of education development (Strategija obrazovanja, znanosti i tehnologije, 2014). The ownership of digital competences and skills, ensuring the availability of digital infrastructure and equipment proved to be very important with the appearance of the COVID-19 pandemic. The European Commission paid great attention to the new circumstances and challenges of education, creating

obrazovanje transformira se tradicionalna nastava. Pojava tehnologije nije promijenila nastavu i proces poučavanja samo u pogledu infrastrukture, već je proizvela novo okruženje za učenje, izvan fizičke dimenzije (Barana & Marchiso, 2021). Nastava postaje dostupna svuda „i svakome", putem interneta i pomoću uređaja kao što su računala, tableti ili čak mobilni uređaji (Yong, 2007; Barana & Marchiso, 2021). U tom kontekstu, osim okruženja za učenje i učenika, digitalni uređaji su nužni za ostvarenje procesa učenja, stoga je školsko digitalno okruženje (DLE) naziv koji se koristi za opisivanje takvog okruženja za učenje (Barana & Marchiso, 2021).

Postoje mnoge definicije školskog digitalnog okruženja, ali zajednički nazivnik je upravo korištenje interneta i sustava upravljanja učenjem (LMS). U ovom radu koristit će se definicija školskog digitalnog okruženja prema Barana i Marchiso (2021, str. 498) prema kojoj je ono "ekosustav učenja u kojem se potiče poučavanje, učenje i razvoj kompetencija u učionici, online ili u kombiniranom okruženju". DLE u učionici može se koristiti u tri oblika. Način korištenja *licem u lice* je oblik pri kojem učenici rade pojedinačno ili sa svojim vršnjacima koristeći digitalne alate i uređaje. Online način pretpostavlja školsko digitalno okruženje kao jedino okruženje za učenje u online nastavi (npr. tijekom pandemije COVID-19 ili tečajeva za profesionalni razvoj). Školsko digitalno okruženje u kombiniranom načinu korištenja uključuje aktivnosti učenja učenika u učionici ili računalnim učionicama, ali i integraciju online aktivnosti, npr. učitelj zadaje zadaću koja će se riješiti online. Posljednje navedena opcija često se koristi, a njezina uporaba ostala je u praksi i nakon završetka pandemije (Barana & Marchiso, 2021).

2.3 Analiza korištenih školskih digitalnih okruženja tijekom pandemije COVID-19

Hrvatska obrazovna politika definira razvoj digitalno zrelih škola kao jedan od ciljeva razvoja obrazovanja (Strategija obrazovanja, znanosti i tehnologije, 2014), a posjedovanje digitalnih kompetencija i vještina te osiguravanje dostupnosti digitalne infrastrukture i opreme, vrlo važnim se pokazalo pojavom COVID-19 pandemije. Novonastalim okolnostima i izazovima obrazovanja, veliku pozornost dala je Europska Komisija, izrađujući akcijski plan za digitalno obrazovanje u razdoblju od 2021 do 2027 godine. (European Education Area, 2021).

Školska digitalna okruženja u Hrvatskoj postaju sve zrelija pojavom COVID – 19 pandemije te prelaskom cjelokupnog školskog sustava na nastavu na daljinu u ožujku 2020. godine. U to vrijeme odgojno-obrazovne ustanove nisu dobile jedinstvenu i standardnu uputu oko izbora alata za održavanje online nastave, posljedično, digitalna rješenja koja su

an action plan for digital education in the period from 2021 to 2027 (European Education Area, 2021).

Digital learning environments in Croatia are becoming more and more advanced with the emergence of the COVID-19 pandemic and the transition of the entire educational system to distance learning in March 2020. At that time, educational institutions. i.e., schools did not receive universal or standardized instruction on the choice of tools for online teaching, consequently, the digital solutions they used differed greatly in terms of regulating the protection of the individual in the digital environment. Although standardized guidelines have not been regulated or provided at the national level (or european), there is a legal framework and foundation for the protection of individuals in the digital environment and it is to be expected that educational institutions would be guided by them when choosing digital solutions. Besides that, the European Commission made efforts to support the transition of educational systems from physical to the digital learning environment, which are visible, by creating various educational initiatives and policies that could potentially guide them in decision-making. (European Educational Area, n.d.)

By including the principle of *"privacy by design"* in the General Data Protection Regulation (EU 2016/679), it becomes a legal obligation of all creators of digital and technical solutions both at the level of the European Union and in the Republic of Croatia. However, the analysis of digital solutions proposed for use in educational purposes, during the COVID-19 pandemic, revealed that some of these solutions did not fully comply with this principle aforementioned (Politiscope, 2021b). At that time, the Ministry of Science and Education issued a number of guidelines, including a document entitled Action Plan for the Implementation of Distance Learning (MZO, 2020). This document provides recommendations for use of technical solutions such as Moodle, Teams, Yammer, Google Classroom and Edmondo. At the same time CARNET publishes a document entitled Online systems for organizing and implementing distance learning (CARNET, 2020) and proposes technical solutions such as Google Classroom and Google Meet, Microsoft Teams, Yammer, CARNET Loomen and Zoom. In addition to recommendations for choosing a technical solution, CARNET in its document lists the advantages and disadvantages of each of its recommendations, and based on this, schools were supposed to make their own judgment on the appropriateness of using the solutions recommended (CARNET, 2020).

The Politscope analysis (2021a) indicates proposed solutions does not fully protect the privacy of its users, most often teachers and students. By analyzing the most commonly used platforms and applications for distance learning, Cohney et al. (2021) in their research draw attention to the koristile uvelike se razlikuju po pitanju regulacije zaštite pojedinca u digitalnom okruženju. Iako standardizirane upute nisu donesene na nacionalnoj razini (pa ni na europskoj), pravni okvir za zaštitu pojedinaca u digitalnom okruženju postoji te je za očekivati da će se odgojno – obrazovne ustanove istima voditi pri odabiru digitalnih rješenja. Osim toga, vidljiva su nastojanja Europske Komisije za davanje potpore tranziciji ,odgojno obrazovnim sustavima, iz fizičkog u školsko digitalno okruženje, kreiranjem raznih odgojno obrazovnih inicijativa i politika koje su ih potencijalno mogle usmjeriti u donošenju odluka. (European Educational Area, n.d.)

Kada je riječ o nastanku novih digitalnih alata i aplikacija *"privacy by design"* načelo, pravna je obveza svih kreatora digitalnih rješenja u Republici Hrvatskoj koju nalaže Opća uredba o zaštiti osobnih podatka (EU 2016/679). Ipak, analizom digitalnih rješenja predloženih za korištenje u odgojno – obrazovne svrhe tijekom COVID-19 pandemije utvrđeno je kako neka od tih rješenja nisu u potpunosti ispoštovala navedeno načelo (Politiscope, 2021b). U to vrijeme Ministarstvo znanosti i obrazovanja izdaje niz smjernica, između ostalog i dokument s nazivom Akcijski plan za provedbu nastave na daljinu (MZO, 2020). Tim dokumentom preporučuje se korištenje tehničkih rješenja poput Moodle, Teams, Yammer, Google Classroom i Edmondo. Ujedno CARNET objavljuje dokument pod nazivom Online sustavi za organizaciju i provođenje nastave na daljinu (CARNET, 2020) te predlaže tehnička rješenja poput Google Classroom i Google Meet, Microsoft Teams, Yammer, CARNET Loomen i Zoom. Osim preporuka za odabir tehničkog rješenja, CARNET u svom dokumentu navodi prednosti i mane za svaku od svojih preporuka te su na temelju toga škole mogle donijeti vlastiti sud primjerenosti upotrebe predloženih rješenja (CARNET, 2020).

Analiza Politscope-a (2021a) ukazuje na to da korištenje predloženih rješenja ne štiti u potpunosti privatnost svojih korisnika, na**j**češće nastavnika i učenika. Analizom najčešće korištenih platformi i aplikacija Cohney i suradnici (2021) upozoravaju na specifičnosti digitalnih rješenja koja zaobilaze zabrane uređaja na kojima se nalaze kako bi prikupljale podatke o lokaciji korisnika. Proučavanjem politika privatnosti digitalnih rješenja (Cohney i sur., 2021; Politiscope, 2021a) također su uočeni brojni primjeri razmjene podataka o korisnicima s trećim stranama u marketinške svrhe. Uočeno je i kako Google Classroom te MS Teams prikupljaju velike količine osobnih podataka s kojima se potencijalno stvara profil korisnika, a razlozi prikupljanja tih podataka nisu jasno definirani. Također, MS Teams nudi samo enkripciju u prijenosu, ali ne nudi end-to-end enkripciju (E2EE). Naglim porastom broja korisnika Zoom aplikacije, eksperti za zaštitu privatnosti korisnika upućuju na mnogobrojne probleme koje se nalaze u

specifics of most used digital solutions that bypass the prohibitions installed on the devices in order to collect user location data. Research on the privacy policies of digital solutions (Cohney et al., 2021; Politiscope, 2021a) identified numerous cases of the exchange of customer data with third parties for marketing purposes. It was also noticed that Google Classroom and MS Teams collect large amounts of personal data of their users that can potentially be used to create a user profile, and the reasons for collecting this kind and amount of data are not clearly specified. Also, MS Teams only offers encryption while transferring data among users, but does not offer end-to-end encryption (E2EE). With the large increase of the number of Zoom users, user privacy experts pointed out many problems found in the default settings of Zoom regarding user privacy (Dash et al., 2021). In the foreseeable future, Zoom has greatly improved its privacy shortcomings. Looking into Loomen privacy and authentication setting it is evident that Loomen also collects large amounts of personal data, however, the risk of sharing this information with third parties is considered much lower, as Loomen is an official, national technical solution (Politiscope, 2021a).

Similar challenges in protecting students and teachers' privacy in the digital learning environment can be seen in analyzes of practices around the world, including Nepal and the United States of America (Lamsal, 2021; Cohney et al., 2021). Aforementioned research contains many tips and guidelines for successful implementation of distance learning and safe digital learning environments. One of the key recommendations is the use of open – code tools that would allow installation of this tools onto schools' own servers. In addition, of great importance is considered educating teachers on protection of their work as well as on the protection of privacy during online teaching. Transferring this knowledge to students would mean an original acquaintance with their own digital rights, raising the level of digital competencies and realistic and quality preparation for life in a modern and digital environment (Cohney et al., 2021).

3 Methodology

3.1 The aim and research questions

The aim of this research is to examine the legal order, i.e., regulation of the legal protection of an individual in the digital environment, with emphasis on the educational dimension at the macro (national) and micro (local) level. The examination at the macro level implies a qualitative analysis of primary data sources (legislation) of the Republic of Croatia relevant to this problem. At the micro level it examines whether and to what extent did primary and secondary schools regulate this matter in zadanim postavkama (Dash i sur., 2021). U dogledno vrijeme Zoom je uvelike unaprijedio nedostatke u pogledu zaštite privatnosti, a iako Loomen također prikuplja velike količine osobnih podataka, smatra se da je rizik od dijeljenja tih informacija s trećom stranom puno manji, s obzirom da je Loomen službeno, nacionalno tehničko rješenje (Politiscope, 2021a).

Slične izazove u zaštiti učenika i nastavnika u digitalnom školskom okruženju možemo vidjeti u analizama praksi diljem svijeta pa tako i u Nepalu i SAD – u (Lamsal, 2021; Cohney i sur., 2021). U navedenim istraživanjima sadržani su i mnogi savjeti i smjernice za budućnost, a jedna od ključnih je korištenje alata s otvorenim kodom koji omogućuju da se ti alati postave na vlastite servere škola. Osim toga, ključnim se također smatra, edukacija nastavnika o zaštiti svog autorskog djela, ali i o zaštiti privatnosti tijekom online nastave. Prijenos tih znanja na učenike značilo bi izvorno upoznavanje s vlastitim digitalnim pravima, podizanje razina digitalnih kompetencija te realnu i kvalitetnu pripremu za život u suvremenom i digitalnom okruženju (Cohney i sur., 2021).

3 Metodologija istraživanja

3.1 Cilj i istraživačka pitanja

Cilj je ovog istraživanja ispitati pravnu uređenost, tj. regulaciju zaštite pojedinca u digitalnom okruženju, s naglaskom na odgojno-obrazovnu dimenziju na makro (nacionalnoj) i mikro (lokalnoj) razini. Ispitivanje na makro razini podrazumijeva kvalitativnu analizu primarnih izvora podataka (zakonskih regulativa) u Republici Hrvatskoj relevantnih za navedeni problem, a na mikro razini se ispituje jesu li i u kojoj mjeri osnovne i srednje škole samostalno, internim posebnim aktima, regulirale navedeno.

U skladu s time formulirana su sljedeća istraživačka pitanja:

Q1: Je li regulirana zaštita pojedinca u digitalnom školskom okruženju zakonskim aktima i podaktima?

Q2: Jesu li osnovne i srednje škole samostalno, internim aktima regulirale problem zaštite pojedinca u školskom digitalnom okruženju?

Q2.1. Koji su aspekti zaštite pojedinca u digitalnom školskom okruženju obuhvaćeni pravilnicima?

3.2 Uzorak i postupak

Kako bi se odgovorilo na prvo istraživačko pitanje, analizirali su se sljedeći relevantni zakonski akti:

- Ustav Republike Hrvatske (NN 5/2014)
- Zakon o odgoju i u obrazovanju u osnovnoj i srednjoj školi (NN 64/2020)

independent matter by providing users with their internal regulations specified for use of ICT.

Accordingly, the following research questions were formulated:

Q1: Is the protection of the individual in the digital learning environment regulated by legal acts and sub-acts?

Q2: Did primary and secondary schools independently, by internal regulations, regulate the problem of individual protection in the digital learning environment?

Q2.1. What aspects of individual protection in digital learning environment are covered by regulations?

3.2 Sample and procedure

In order to answer the first research question, following, relevant, legal acts were analyzed:

- Constitution of the Republic of Croatia (NN 5/2014)
- Primary and secondary education act (NN 64/2020)
- National pedagogical standard of the primary school education system (NN 63/2008)
- National pedagogical standard of the secondary education system (NN 63/2008)
- Policy on criteria for imposing pedagogical measures (NN 3/2017)
- General Data Protection Regulation (EU 2016/679)
- Law on the Implementation of the General Regulation on Data Protection (NN 42/2018)
- Law on Information Security (NN 79/2007)
- Copyright and Related Rights Act (NN 111/2021)
- Family Law (NN 98/2019)

In January 2022, the European Commission adopted a draft declaration on European digital rights and principles (European Commission, 2022). The principles are grouped into 6 thematic areas: placing people at the center of the digital revolution, solidarity and inclusion, freedom of choice, engaging in public digital space, empowerment and security, and sustainability. Through these values, the significance of upholding democracy, safeguarding human rights, encouraging responsible and safe behavior among all stakeholders, encouraging unity rather than division, maintaining a peaceful online environment free of objectionable or threatening material, participating in democratic processes, and the existence of digital devices that support sustainability and the green transition are all brought to light (European Commission, 2022). As a result, the following criteria were the main focus of the document analysis:

- Copyright protection (C1)
- Državni pedagoški standard osnovnoškolskog sustava odgoja i obrazovanja (NN 63/2008)
- Državni pedagoški standard srednjoškolskog sustava odgoja i obrazovanja (NN 63/2008)
- Pravilnik o kriterijima za izricanje pedagoških mjera (NN 3/2017)
- Opća uredba o zaštiti osobnih podataka (EU 2016/679)
- Zakon o provedbi Opće uredbe o zaštiti podataka (NN 42/2018)
- Zakon o informacijskoj sigurnosti (NN 79/2007)
- Zakon o autorskim i srodnim pravima (NN 111/2021)
- Obiteljski zakon (NN 98/2019)

Europska Komisija, u siječnju 2022. godine, donijela je nacrt deklaracije o europskim digitalnim pravima i načelima (Europska Komisija, 2022). Načela su grupirana 6 tematskih područja; ljudi u središtu digitalne transformacije, solidarnost i inkluzija, sloboda izbora, sudjelovanje u javnom digitalnom prostoru, sigurnost, zaštita i osnaživanje i održivost. Kroz ta načela provlači se važnost zaštite ljudskih prava, podrška demokracije, osiguranja da se svi dionici ponašaju odgovorno i sigurno, promicanja jedinstva, a ne podjele, mirno digitalno okruženje, bez ilegalnog i ugrožavajućeg sadržaja, uključivanja u demokratske procese kao i važnost kontrole nad vlastitim podatcima, postojanje digitalnih uređaja koji promiču održivost i potiču zelenu tranziciju (Europska Komisija, 2022). Sukladno navedenom, analiza dokumenata usmjerila se na sljedeće kriterije:

- Zaštita autorskog prava (C1)
- Reguliranje (prihvatljivog) ponašanja u digitalnom školskom okruženju (C2)
- Zaštita privatnosti u digitalnom školskom okruženju (C3)
- Sigurnost na mreži (C4)

Da bi se odgovorilo na drugo istraživačko pitanje provelo se kvalitativno istraživanje javno dostupne i službene dokumentacije škola.

Opću populaciju čini 1 315 redovnih matičnih osnovnih i srednjih škola[1], od kojih je metodom slučajnog odabira (uz pomoć *random number generator*) odabrano 308 škola, a zadržano 303, što čini reprezentativan uzorak u skladu s pristupom određivanja veličine slučajnog uzorka prema Krejcie i Morgan (1970, prema Cohen i sur., 2007). Škole koje su izostavljene iz istraživanja pripadaju: alternativnim školama, školama nacionalnih manjina čije internetske stranice nisu dostupne na hrvatskom ili engleskom jeziku te centri za odgoj i obrazovanje.

U ukupnom uzorku od 303 škole, 68% čine osnovne škole (206), a 32% srednje škole (97).

Kroz razdoblje od 1.6. do 10.6.2022. godine s ciljem povećanja valjanosti, dva nezavisna

[1] Podatci o tome prikupljeni s web aplikacije Ministarstva znanosti i obrazovanja, tzv. ŠeR-u.

- Regulating (acceptable) behavior in the digital learning environment (C2)
- Privacy protection in the digital learning environment (C3)
- Network security (C4)

In order to answer the second research question, a qualitative research of publicly available and official school documentation was conducted. The general population consists of 1,315 regular primary and secondary schools, out of which 308 schools were randomly selected and 303 held onto, which is a representative sample in accordance with the determination of random sample size approach according to Krejcie and Morgan (1970, according to Cohen et al., 2007). Schools excluded from the survey are identified as: alternative schools, schools for national minorities whose websites are not available in Croatian or English, and centers for education. In the total sample of 303 schools, 68% are primary schools (206) and 32% secondary schools (97). During the period from 1.6. to 10.6.2022., in order to increase the validity, two independent researchers reviewed and collected data available on the official websites of the schools. Among the available documentation on the school websites, the researchers noted whether there were internal regulations (provided by schools) on the use of ICT, and then analyzed them according to the criteria set in advance.

4 Results and discussion

4.1 Q1: Is the protection of the individual in the digital learning environment regulated by legal acts and sub-acts?

The qualitative analysis of legal regulations is to be commenced with a core legal act in the Republic of Croatia, i.e., the Constitution. It is aforementioned that the Constitution defines human rights as the highest values, and Article 37. clarifies and precises the protection of personal data, stating that everyone is "guaranteed the safety and confidentiality of personal data" and that only under statutory conditions can personal data be collected and processed and used without the consent of the individual. Article 69. of the Constitution explicitly guarantees the protection of moral and material rights deriving from scientific, cultural, artistic, intellectual and other creativity.

The protection of personal data is regulated by the General Regulation on Data Protection adopted by the European Parliament and the Council of the European Union (EU 2016/679), and which applies to all EU citizens. It considers the protection of the individual with regard to personal data processing to be a fundamental human right and puts the issue of

istraživača su pregledavala i prikupljala podatke dostupne na službenim web stranicama škola. Istraživači su među dostupnom dokumentacijom na stranicama škola bilježili postoje li interno doneseni akti o korištenju IKT, a potom ih analizirali obzirom na postavljene kriterije analize.

4 Rezultati i diskusija

4.1 Q1: Je li regulirana zaštita pojedinca u digitalnom školskom okruženju zakonskim aktima i podaktima?

Kvalitativnu analizu zakonskih regulativa započet ćemo temeljnim pravnim aktom u Republici Hrvatskoj, odnosno Ustavom. Već ranije je rečeno kako se njime prava čovjeka definiraju kao najveće vrednote, a člankom 37. jasnije se precizira zaštita osobnih podataka navodeći da se svakome „jamči sigurnost i tajnost osobnih podataka" te da se jedino u zakonima donesenim uvjetima osobni podatci mogu prikupljati, obrađivati i koristiti bez privole ispitanika. Ustavom se izrijekom člankom 69. jamči i zaštita moralnih i materijalnih prava koje proistječu iz znanstvenog, kulturnog, umjetničkog, intelektualnog i drugog stvaralaštva.

Zaštita osobnih podataka regulira se Općom uredbom o zaštiti osobnih podataka koju je donio Europski parlament i Vijeće (EU 2016/679) i koja se odnosi na sve građane EU. Njome se zaštita pojedinca s obzirom na obradu podataka smatra temeljnim pravom čovjeka, a pitanje zaštite osobnih podataka stavlja u suvremeni kontekst, odnosno kontekst brzog tehnološkog razvoja i globalizacije koji donose nove izazove u zaštiti osobnih podataka. Upravo radi toga navodi se u Uredbi da je potrebno stvoriti pravnu i praktičnu sigurnost pojedinaca. Iako se nigdje decidirano ne govori o regulaciji zaštite podataka unutar obrazovnog sustava, članak 38. govori da je potrebno posebno voditi računa o zaštiti podataka djece te da odgovarajuće nadzorno tijelo (što je u ovom slučaju Agencija za zaštitu osobnih podataka (dalje: AZOP)) posebno treba davati pozornost aktivnostima namijenjenim djeci u smislu promicanja javne svijesti o rizicima, pravilima te zaštitnim mjerama i pravima u vezi s obradom podataka. Tako je AZOP donio preporuke za primjenu Uredbe u školskim ustanovama (AZOP, 2019), a koja govore o potrebi imenovanja školskih službenika za zaštitu podataka te informiranje. Nadalje preporuke primjene Uredbe za školske ustanove govore o dužnostima škole u provođenju odgovarajućih tehničkih i organizacijskih mjera zaštite (čl. 25 i čl. 32) od npr. neovlaštenog pristupa ili raspolaganja osobnim podatcima, tehničke opreme, kao i osiguravanja sigurnosti mreže i informacijskih sustava subjekata koje svoje usluge nude putem mreže, kao što bi bio slučaj za vrijeme

personal data protection in a modern context, i.e., the context of rapid technological development and globalization that brings new challenges in personal data protection. That is why the General Regulation on Data Protection states that it is necessary to create legal and practical security for individuals. Although there is nowhere to be found any definite regulation of data protection within the education system, Article 38. states that special attention should be paid to the protection of children's data and that the appropriate competent authorities (in this case the Croatian Personal Data Protection Agency) (AZOP) should pay special attention to activities aimed at children in terms of promoting public awareness of risks, rules and safeguards and rights related to data processing.

Thus, AZOP made recommendations for the application of the Regulation in school institutions (AZOP, 2019), which advocate the need to appoint school protection data and information officer. Furthermore, the recommendations for the application of the General Regulation on Data Protection, for school institutions, states school duties in implementing appropriate technical and organizational measures for protection (Art. 25 and Art. 32) from e.g., unauthorized access or disposal of personal data, technical equipment and security of network and information systems which offer their services through the network, as would be the case during the implementation of distance learning (Art. 39.). During the complete transition to distance learning during the pandemic, AZOP addressed some of the basic issues related to the collection and processing of personal data (AZOP, 2021), but did not provide any specific guidelines regarding privacy and data protection of students in digital environments. Thus, it can be concluded that the General Regulation on Data Protection does not explicitly regulate the protection of individuals data in the digital learning environment, and what is provided are non-binding recommendations. None of the issues related to the protection of the individual in the digital environment is regulated by the Law on the Implementation of the General Regulation on Data Protection (NN 42/2018).

Regarding the regulation of online safety, the Information Security Act establishes security measures and standards of safety (in the areas of security clearance, physical security, data security, information system and business cooperation) which are applicable to all legal entities with public authority, which means school facilities as well (NN 79/2007).

The Family Law (NN 98/2019) regulates the rights of the child, which implies the right to parental care, which consists of responsibilities, duties, and rights of parents for the purpose of protecting and promoting the child's well-being, which is not exclusive to the digital school environment. Among other things, the scope of parental care includes the provedbe nastave na daljinu (čl.39). Za vrijeme potpunog prelaska nastave na daljinu za vrijeme pandemije, AZOP je obradio neka od osnovnih pitanja vezanih za prikupljanje i obradu osobnih podataka (AZOP, 2021), no nije dao konkretne zaštitne mjere u vezi privatnosti i zaštite podataka učenika u digitalnim okruženjima. Dakle, može se zaključiti da Općom uredbom nije eksplicitno regulirana zaštita podataka pojedinca u digitalnom školskom okruženju, a ono što je dano ostaje na neobvezujućim preporukama. Nijedno od pitanja vezanih za zaštitu pojedinca u digitalnom okruženju nije regulirano ni Zakonom o provedbi Opće uredbe o zaštiti podataka (NN 42/2018).

Po pitanju regulacije sigurnosti na mreži, Zakonom o informacijskoj sigurnosti utvrđuju se mjere i standardi sigurnosti (u područjima sigurnosne provjere, fizičke sigurnosti, sigurnosti podataka, informacijskog sustava i poslovne suradnje) koja se primjenjuju na sve pravne osobe s javnim ovlastima što znači onda i na školske ustanove (NN 79/2007).

Obiteljskim zakonom (NN 98/2019) regulirana su prava djeteta, što podrazumijeva pravo na roditeljsku skrb, koju čine odgovornosti i dužnosti i prava roditelja u svrhu zaštite i promocije djetetove dobrobiti, a što nije isključujuće za digitalno školsko okruženje. Između ostalog u sadržaj roditeljske skrbi ulazi pravo i dužnost zaštite prava djeteta na odgoj i obrazovanje, koje se regulira člankom 94. navedenog zakona. (NN 98/2019). Tim člankom navedena je i obveza roditelja da odgajaju djecu u skladu s njihovom dobi i zrelošću te ga štite od manipulirajućih i ponižavajućih postupaka drugih osoba. Iako se ovim zakonom izričito ne regulira zaštita djece u digitalnom okruženju, može se reći kako je pravna obveza primjenjiva kako u fizičkom tako i u digitalnom okruženju.

U nastavi na daljinu, nastavnici su uglavnom samostalno kreirali digitalne obrazovne sadržaje koje su dijelili i koji su bili namijenjeni učenicima kojima su predavali. Pri tome se povećala razina rizika i prijetnji povredama autorskih i srodnih prava te intelektualnog vlasništva. Ponajprije se to odnosi na neovlašteno dijeljenje i korištenje digitalnih materijala, predstavljanje tuđih radova kao svoje ili korištenje tuđih materijala bez citiranja, navođenja izvora itd. Autorska i srodna prava regulirana su Zakonom o autorskom i srodnim pravima (NN 111/2021), a obuhvaćaju moralna i imovinska prava koja pripadaju autoru (čl. 26). Imovinska prava autora obuhvaćaju pravo umnažanja, distribuiranja, činjenje dostupnim javnosti itd., dok se moralna prava odnose na pravo prve objave, poštovanja časti i ugleda autora te poštovanje autorskog djela. U vrijeme pojave pandemije na snazi je bio stari zakon iz 2018. godine (NN, 96/2018) kojim se navodilo da je dopušteno reproduciranje i korištenje (uz pravilno citiranje i navođenje izvora) zakonito objavljenih autorskih djela, ako su namijenjena isključivo nastavi, osim ako to autor izričito ne zabrani ili ako

right and duty to protect the child's right for education, which is regulated by Article 94 of the aforementioned law (NN 98/2019). That article also states parents' obligation to raise children in accordance with their age and maturity and to protect them from the manipulative and humiliating actions of other people. Although this law does not specifically regulate the protection of children in the digital environment, it can be concluded that the legal obligation exceeds physical environment and is applicable in the digital environment.

While distance teaching, teachers mostly created their own digital educational content that they shared and that were intended for the students they taught. At the same time, the level of risk and threat of copyright, related rights and intellectual property infringement increased. This primarily refers to the unauthorized distribution and use of digital materials, presenting other people's works as one's own or using other people's materials without quoting or citing sources, etc. Copyright and related rights are regulated by the Copyright and Related Rights Act (NN 111/2021) and include moral and property rights of the author (Art. 26.). The property rights of the author include the right to reproduce, distribute, make available to the public, etc., while the moral rights relate to the right of first publication, respect for the honor and reputation of the author and respect for the author's work. At the time of the pandemic, the old law from 2018 (NN 96/2018) was in force, which stated that the reproduction and use (with proper quotation and citation of sources) of legally published copyright works was allowed, if they were intended exclusively for teaching, except if the author does not explicitly forbid it or if the manner of use would endanger the honor and reputation of the author (Art. 85 and Art. 88). Following the pandemic, the aforementioned Law was revisited (NN 111/2021), adding the Article 199. *Use in digital and cross-border teaching*, which means "without the approval of the right holder and without payment of compensation, reproduction and communication to the public, including making it publicly available, copyrighted works and related rights for their digital use and for the purpose of setting an example in teaching practice" and under the condition that such use takes place within the competence of the educational institution, on its premises or in other facilities or through a secure electronic environment accessible only to pupils or students and teaching staff of that educational institution ", alongside proper quotation, citation of sources and authors. In particular, Paragraph 2 of this Article states that this applies to digital and online teaching, distance learning, cross-border teaching and across all levels of education. Therefore, this Law best regulates the issue of protection of the individual in the digital learning environment, given the criteria of copyright protection.

bi se načinom korištenja ugrozila čast i ugled autora (čl. 85 i čl. 88). Nakon pojave pandemije, dolazi do izmjena spomenutog Zakona (NN, 111/2021), kada se dodaje i članak 199. *Korištenje u digitalnoj i prekograničnoj nastavi* što podrazumijeva „bez odobrenja nositelja prava i bez plaćanja naknade, umnožavanje i priopćavanje javnosti, uključujući činjenje dostupnim javnosti, autorskih djela i predmeta srodnih prava radi njihova digitalnog korištenja u svrhu davanja primjera u nastavi" te pod uvjetom da se "takvo korištenje odvija u okviru nadležnosti obrazovne ustanove, u njezinim prostorijama ili u drugim objektima ili putem sigurnog elektroničkog okružja kojemu mogu pristupiti samo učenici ili studenti i nastavno osoblje te obrazovne ustanove", a uz pravilno citiranje, navođenje izvora i autora. Posebno je naznačeno stavkom 2. ovog članka da se to odnosi na digitalnu i internetsku nastavu, učenje na daljinu, prekograničnu nastavu te na sve obrazovne razine. Dakle, ovim Zakonom najbolje je uređeno pitanje zaštite pojedinca u digitalnom školskom okruženju, obzirom na kriterij zaštite autorskih prava.

Unutar krovnog zakona koji regulira djelatnost osnovnog i srednjeg obrazovanja Zakona o odgoju i obrazovanju u osnovnoj i srednjoj školi (dalje: ZOO) člankom 67. definira se sigurnost u školskim ustanovama, prema kojem su školske ustanove dužne stvoriti uvjete za zdrav mentalni i fizički razvoj te socijalnu dobrobit; voditi evidenciju, ali i sprječavati oblike neprihvatljivog ponašanja učenika; brinuti se o sigurnosti učenika; i pratiti socijalne probleme učenika te poduzimati adekvatne mjere za otklanjanje njihovog uzroka i posljedica. Osim toga, reguliraju se obveze učenika koje podrazumijevaju poštivanje pravila kućnog reda kao i drugih pravnih propisa (čl.61) što znači da pravilnici koji bi regulirali sigurnu i odgovornu primjenu IKT-a i regulirali zaštitu pojedinca u digitalnom školskom okruženju imaju uporište i opravdanje u zakonu. U slučaju povreda dužnosti, neprihvatljivog i nasilnog ponašanja te neispunjavanja obveza učenicima se izriču pedagoške mjere prema Pravilniku o kriterijima za izricanje pedagoških mjera (NN 3/2017).

Ovim Pravilnikom obuhvaćena su neka neprihvatljiva ponašanja koja se izrijekom odnose na ponašanja u digitalnom okruženju, ili su vezana za sigurnu i odgovornu upotrebu IKT-a poput: nedopuštenog korištenja informacijsko-komunikacijskih uređaja tijekom odgojno-obrazovnog rada, objavljivanje materijala elektroničkim ili drugim putem, a koji za posljedicu imaju povredu ugleda, časti i dostojanstva druge osobe ili oštećivanje imovine u prostorima škole. No, iako za druga neprihvatljiva ponašanja nije izrijekom rečeno da se ona odnose i na ponašanja u virtualnim učionicama, odnosno u digitalnom okruženju, ona su primjenjiva. Primjeri za to su: korištenje nedopuštenih izvora podataka u svrhu prepisivanja (u

Within the supreme law regulating the activity of primary and secondary education, the Primary and Secondary Education Act (ZOO) by Article 67. defines safety in school institutions, according to which school institutions are obliged to create conditions for healthy mental and physical development and social welfare; keep evidence, but also prevent different unacceptable student behaviour; take care of student safety; monitor the social problems of students and take adequate measures to eliminate their causes and consequences. Furthermore, the obligations of students are regulated, which include compliance with house rules and other legal regulations (Art. 61.), which means that regulations that would regulate the safe and responsible use of ICT and regulate the protection of individuals in the digital learning environment have a basis and justification in law. In case of breaches of duty, unacceptable and violent behavior and non-fulfillment of obligations, students are imposed pedagogical measures according to the Policy on criteria for imposing pedagogical measures (NN 3/2017).

This Policy covers some unacceptable behaviors that are explicitly related to behaviors in the digital environment or are related to the safe and responsible use of ICT, such as: unpermitted use of information and communication devices during teaching, publishing materials electronically or otherwise, and which result in damage to the reputation, honor and dignity of another person, or damage to property on school premises. However, although other unacceptable behaviors are not explicitly stated to apply to behaviors in virtual classrooms or digital environments, they are applicable. Examples for that are: using unauthorized data sources for the purpose of copying (in the form of copyright infringement), violating the dignity of another person by belittling, insulting, or spreading untruths and rumors about another student or school worker, using or abusing another student's data from pedagogical documentation or encouraging group hate speech.

Furthermore, by the ZOO is explicitly stated (Art. 58.) that school boards are obliged to specify house rules, but not a similar document that would regulate safe and responsible so as acceptable behavior in virtual classrooms. However, this does not exclude the possibility of regulating the same within house rules. Also, Article 49 of the ZOO states that schools are obliged to provide conditions for the realization of their pedagogical and public functions, which also leaves the legal possibility for schools to independently regulate the safe and responsible use of ICT by internal regulations. Regarding the issue of personal data protection, the ZOO states that they are regulated in accordance with the provisions of regulations governing data protection (NN 64/2020).

The National pedagogical standards of the primary and secondary school education system (NN 63/2008) do not regulate any of the four set criteria.

vidu povrede autorskih prava), povreda dostojanstva druge osobe omalovažavanjem, vrijeđanjem ili širenjem neistina i glasina o drugome učeniku ili radniku škole, korištenje ili zlouporaba podataka drugog učenika iz pedagoške dokumentacije ili poticanje grupnoga govora mržnje.

Nadalje, u ZOO izrijekom je jedino navedeno (čl. 58.) da su školski odbori dužni donijeti pravila kućnoga reda, no ne i sličan dokument kojim bi se regulirala sigurna i odgovorna te prihvatljiva ponašanja u virtualnim učionicama. Ipak, to ne isključuje mogućnost regulacije istog kućnim redom. Isto tako, u članku 49. ZOO-a navodi se da su škole dužne osigurati uvjete za ostvarenje svoje pedagoške i javne funkcije što također ostavlja pravnu mogućnost školama da samostalno internim pravilnicima reguliraju sigurnu i odgovornu upotrebu IKT-a. Što se tiče pitanja zaštite podataka u ZOO se navodi da se ona reguliraju u skladu s odredbama propisa koji uređuju zaštitu podataka (NN 64/2020).

Državnim pedagoškim standardima osnovnoškolskog i srednjoškolskog sustava odgoja i obrazovanja (NN 63/2008) ne regulira se nijedan od četiri kriterija. Iako postoji standard koji predviđa prostorne uvjete za izvođenje informatike, no ne govori ništa, primjerice o standardima sigurnosti na mreži i sl.

Konačno, može se reći da je tek u jednom zakonu eksplicitno regulirana zaštita pojedinca u digitalnom (školskom) okruženju i to s aspekta zaštite autorskih i srodnih prava te o djelomičnoj reguliranosti prihvatljive komunikacije i oblike ponašanja pri korištenju IKT, samo jednim pravilnikom. Ipak, primjenom različitih zakonskih regulativa na školske ustanove, može se reći da je u određenoj mjeri regulirana zaštita pojedinca u digitalnom okruženju, a u najvećoj mjeri s obzirom na sigurnost na mreži. Pitanje zaštite privatnosti i podataka te regulacije prihvatljivog ponašanja i komunikacije u školskom digitalnom okruženju ostaje nedovoljno pokriveno. Nakon svega, može se zaključiti da navedeni pravni akti zasebno nedovoljno reguliraju pitanje zaštite pojedinca u (školskom) digitalnom okruženju, ali u dovoljnoj mjeri daju pravnu podlogu i lako su primjenjivi za kreiranje zasebnog pravilnika o sigurnom i odgovornom korištenju IKT, po uzoru na prijedlog istoimenog pravilnika koji je nastao u sklopu projekta e-Škole, a koji će posljedično imati zaštitu pojedinca u digitalnom (školskom) okruženju. Kako bi školske ustanove dobile pravnu sigurnost u regulaciji istoga, ali se istaknula i važnost reguliranja navedenog, autori predlažu da se jedan takav pravilnik donese na (makro) nacionalnoj razini.

4.2 Q2: Jesu li osnovne i srednje škole samostalno, internim aktima

Although there is a standard that assumes spatial conditions for teaching informatics, it does not say anything, for example about online security standards etc.

To conclude, it can be said that only one law explicitly regulates the protection of individuals in the digital (learning) environment, which is from the aspect of copyright and related rights protection. There is also partial regulation of acceptable communication and behavior when using ICT, only by one policy. However, by applying various legal regulations to school institutions, it can be said that the protection of the individual in the digital environment is regulated to a certain extent, and to the greatest extent with regard to online security. The issue of privacy and data protection and the regulation of acceptable behavior and communication in the school digital environment remains insufficiently covered. Finally, it can be concluded that these legal acts do not sufficiently regulate the protection of individuals in digital (learning) environment but provide a sufficient legal foundation and could be easily applied in creation of a separate guidelines or policy on safe and responsible use of ICT. It could be modeled based on the proposal of the guidelines, under the same name, created as part of the e-School project, which will consequently have the role of protection of the individual in the digital (learning) environment. In order for school institutions to gain legal certainty in the regulation of that matter, as well as to emphasize the importance of regulating the above mentioned, the authors suggest that such policy or regulations should be provided at the (macro) national level.

4.2 Q2: Did primary and secondary schools independently, by internal regulations, regulate the problem of individual protection in the digital learning environment?

Qualitative analysis of data available on the websites of primary and secondary schools showed that only 15 schools out of a total of 303 observed internally regulated the safe and responsible use of ICT and the protection of individuals in the digital learning environment by some form of an individual act. Of the total sample, 5% did so, mostly primary schools, 12 out of 15 (other data are given in Table 1). Podbojec and Mekovec (2021) conducted research on data protection at universities, which coincides with criterion C3 of this research. Their results also indicate insufficient awareness of educational systems about the need to coordinate internal regulations with valid and current legal acts that define data protection.

Most schools have created their own regulations according to the proposed CARNET (2017) Ordinance on safe and responsible use of information

regulirale problem zaštite pojedinca u školskom digitalnom okruženju?

Kvalitativnom analizom podataka dostupnih na web stranicama osnovnih i srednjih škola pokazalo se da je samo 15 škola od ukupno promatranih 303 interno nekim oblikom zasebnog akta reguliralo sigurnu i odgovornu upotrebu IKT i zaštitu pojedinca u digitalnom školskom okruženju. Od ukupnog uzorka to je učinilo 5% škola, a uglavnom su to osnovne škole, njih 12 od 15 (ostali podatci dani su u Tablici 1). Podbojec i Mekovec (2021) proveli su istraživanje o zaštiti podataka na visokim učilištima što se poklapa s kriterijem C3 ovog istraživanja. Njihovi rezultati također ukazuju na nedovoljnu osviještenost obrazovnih sustava o potrebi usklađivanja internih regulativa s važećim zakonskim aktima koji definiraju zaštitu podataka.

Većina škola kreirala je svoje pravilnike prema danom prijedlogu CARNET-a (2017) Pravilnika o sigurnoj i odgovornoj upotrebi informacijsko-komunikacijske tehnologije u školi, a koji je donesen u sklopu provedbe projekta e-Škole: Uspostava sustava razvoja digitalno zrelih škola (dalje: e-Škole), njih 66,7%. Ostale škole kreirale su vlastite interne akte u obliku odluka o (prihvatljivom) korištenju interneta, računala i mobitela u školi i izvan nje, etičkih kodeksa o sigurnosti učenika i djelatnika na internetu te odluka o računalnoj sigurnosti i sigurnosti informacijskih sustava.

Tablica 1. Distribucija rezultata obzirom na razinu školskog obrazovanja

	Ima Pravilnik	Nema Pravilnik	Ukupno	Postotak (“ima”)
Osnovne škole	12	194	206	5,8%
Srednje škole	3	94	97	3,1%
Ukupno	15	288	303	5%

4.2.1 Q2.1: Koji su aspekti zaštite pojedinca u digitalnom školskom okruženju obuhvaćeni pravilnicima?

Kvalitativnom analizom 15 pronađenih internih regulativa škola vezanih za zaštitu pojedinca u digitalnom školskom okruženju, utvrđeno je da se one u određenoj mjeri sadržajno razlikuju, obzirom na obuhvaćenost postavljenih kriterija analize (C1–C4). U najvećoj mjeri, osam škola (oko 53%) obuhvatilo je sve aspekte zaštite pojedinca u digitalnom okruženju, u kontekstu ovog rada. Šest škola (40%) reguliralo je 3 od pretpostavljena 4 aspekta, a u svim slučajevima izostavljen je kriterij zaštite privatnosti u školskom digitalnom okruženju, dok je samo jedna škola (oko 7%) koja je regulirala samo dva aspekta, u kontekstu ovog rada (samo C2 i

and communication technology in schools, which was developed as part of the e-School project: Establishment of a system for developing digitally advanced schools (e-Schools), 66.7% of them. Other schools have created their own internal acts in the form of decisions on (acceptable) use of the Internet, computers, and mobile phones in and out of school, ethical codex on the safety of students and staff on the Internet and resolutions on computer security and information systems security.

Table 1. Distribution of results according to the level of school education

	Have Ordinance	Don't have Ordinance	∑	% ("have")
Primary schools	12	194	206	5,8%
Secondary schools	3	94	97	3,1%
Sum	15	288	303	5%

4.2.1 Q2.1: What aspects of individual protection in digital learning environment are covered by regulations?

Through a qualitative analysis of 15 found internal regulations of schools, related to the protection of individuals in the digital learning environment, it was concluded that they differ in content to a certain extent, considering the scope of the set analysis criteria (C1–C4). To the greatest extent, eight schools (about 53%) covered all aspects of individual protection in the digital environment, in the context of this paper. Six schools (40%) regulated 3 of 4 proposed aspects, and in each of those cases the criterion of privacy protection in the digital learning environment was overlooked, while only one school (about 7%) regulated only two aspects, in the context of this paper (only C2 and C3). In other words, the analysis showed that in all acts (100%), (un)acceptable forms of behaviour in the digital learning environment are regulated and defined, and in 93.3% of the acts, general safety provisions for digital equipment and how to achieve online security were adopted. To a large extent, i.e., in 86.7% of acts, the protection of the copyright of participants in the digital learning environment is regulated, while to the smallest extent (73.3%) the issue of protecting individual privacy is regulated. The analysis of the mentioned acts exhibits insufficient elaboration and narrow description of the protection of individual privacy, furthermore, they do not consider, include, or regulate new challenges that have emerged in this area due to the onset of the pandemic and transition to distance learning (e.g., distance teaching and learning via Zoom and Big Blue Button applications C3). Odnosno, analiza je pokazala da su u svim aktima (100%) regulirani i definirani (ne)prihvatljivi oblici ponašanja u digitalnom školskom okruženju, a u 93,3% akata donesene su opće sigurnosne odredbe digitalne opreme te kako se ostvaruje sigurnost na mreži. U velikoj mjeri, odnosno u 86,7% akata regulirana je zaštita autorskih prava sudionika u digitalnom školskom okruženju, dok je u najmanjoj mjeri (73,3%) regulirano pitanje zaštite privatnosti pojedinca. Analizom spomenutih akata ustvrđeno je kako je zaštita privatnosti pojedinca nedovoljno elaborirana te minimalno regulirana, a novi izazovi koji su se u tom području nametnuli pojavom pandemije i prelaskom na nastavu na daljinu nisu razmotreni, uključeni niti regulirani navedenim aktima (npr. izvođenje nastave na daljinu putem Zoom i Big Blue Button aplikacije ili dijeljenje privatnih podataka učenika poput ocjena na polu – javnim platformama kao što su Ms Teams i Google Classroom).

Većina propisa donesena je kroz razdoblje od 2017. do 2021. godine, iznimno jedan pravilnik je donesen 2013. godine, a za jedan nije poznato. U tablici 2 dana je distribucija godina donošenja propisa. Ove rezultate zanimljivo je promatrati u odnosu vrijeme pojave COVID-19 pandemije. Prije pojave pandemije i prelaska na nastavu na daljinu, internim aktima pitanje regulacije sigurnog digitalnog okruženja i zaštite pojedinca u istom imalo je 13 od 15 škola koje uopće imaju regulirano ovo pitanje, tj. 4,3% škola od ukupnog uzorka. Drugim riječima, nakon pojave pandemije i za vrijeme iste, manje od 1% škola je regulirano navedeni problem. Budući da je istraživanje rađeno na reprezentativnom uzorku, rezultati se mogu generalizirati na opću populaciju redovnih matičnih škola u Hrvatskoj (Cohen i sur., 2007).

Tablica 2. Prikaz distribucije pravilnika obzirom na godinu donošenja

Godina donošenja	Broj škola
2013	1
2017	1
2018	6
2019	2
2020	3
2021	1
nepoznato	1

Osim toga, rezultate je zanimljivo promatrati u odnosu na provedbu projekta e-Škole jer je u sklopu njega jedna od preporuka bilo kreiranje Pravilnika o sigurnoj i odgovornoj upotrebi IKT-a u školi kao dijela sigurnosne politike digitalno zrele škole. Od ukupno 15 škola koje su donijele slične propise i time regulirale zaštitu pojedinca u digitalnom okruženju, njih 6 (40%) je bilo sudionikom projekta.

or sharing personal students' data on semi – public platforms such as Ms Teams or Google Classroom). In accordance with the set criteria of qualitative analysis of legal regulations related to the protection of individuals in the digital learning environment, a qualitative analysis of 15 school acts was conducted. All acts (100%) regulate and define (un)acceptable behavior in the digital learning environment, and 93.3% of acts adopt general security provisions for digital equipment and how online security is achieved. The protection of copyrights of participants in the digital learning environment is largely regulated, i.e., in 86.7% of acts, while the issue of protection of individual privacy is regulated to the smallest extent (73.3%).

Most of the regulations were adopted during the period from 2017 to 2021, exceptionally one ordinance was adopted in 2013, and for one this data is unknown. Table 2 shows the distribution of the years of enactment. These results are interesting to observe in relation to the timing of the COVID-19 pandemic. Before the pandemic and the transition to distance learning, 13 out of the 15 schools (which generally have internally regulated safe digital learning environment and protection of the individual in digital learning environment) had some form of regulation, i.e., 4.3% of the total sample. In other words, after the onset of a pandemic and during it, less than 1% of schools have regulated this problem. Since the research was done on a representative sample, the results can be generalized to the general population of regular main schools in Croatia (Cohen et al., 2007).

Table 2. Distribution of regulations according to the year of adoption

Year	Num. of schools
2013	1
2017	1
2018	6
2019	2
2020	3
2021	1
unknown	1

Moreover, it is interesting to observe the results in relation to the implementation of the e-School project because one of its recommendations was to develop Ordinance on safe and responsible use of ICT in school as part of the security policy of digitally advanced schools. Out of a total of 15 schools that adopted similar regulations and thus regulated the protection of the individual in the digital environment, 6 (40%) were participants in the project.

4.3 Ograničenja istraživanja i preporuke za buduća istraživanja

Ograničenja ovog istraživanja vezana su uz metodologiju. Iako su postavljeni kriteriji analize proizašli iz teorijskih razmatranja, zasigurno postoji još kriterija po kojima bi se mogla i trebala napraviti analiza zakonskih regulativa, kao i analiza nekih drugih dokumenata poput mišljenja koje su publicirale Agencija za zaštitu osobnih podataka ili smjernica Ministarstva znanosti i obrazovanja i sl.

Osim toga, u istraživanju se ispitivalo postoje li zasebni pravilnici koji reguliraju zaštitu pojedinca u digitalnom školskom okruženju, a autori smatraju da postoji mogućnost da su školske ustanove pravila prihvatljivog i odgovornog ponašanja te sigurne upotrebe IKT regulirale u sklopu kućnog reda, etičkog kodeksa, statuta škole ili nekog drugog internog dokumenta. Upravo u tom smjeru ide preporuka za daljnja istraživanja da se ispita jesu li škole nekim drugim internim dokumentima regulirale zaštitu pojedinca u digitalnom okruženju, tj. oblike sigurne, odgovorne i prihvatljive upotrebe IKT.

Nadalje, potencijalno ograničenje vezano je uz odabir uzorka. U ovom istraživanju uzorak su činile matične škole, ali ne i područne, kojih je još 1 115. Iako se prilikom pregleda web stranica matičnih škola moglo uočiti da područne škole uglavnom imaju zajedničku web stranicu sa matičnim školama te nemaju posebno istaknute vlastite interne dokumente nego slijede one matičnih škola, ne može se bez empirijske potvrde tvrditi da se rezultati dobiveni u ovom istraživanju odnose i na područne škole.

5 Zaključak

Digitalno školsko okruženje te digitalna zrelost škola prirodan su slijed razvoja odgojno – obrazovnog sustava koji prati tehnološke i digitalne napretke 21. stoljeća, ali ciljeva postavljenih Strategijom obrazovanja, znanosti i tehnologije (NN 124/2014). Taj proces sazrijevanja digitalno zrelih škola nedvojbeno je ubrzala pojava COVID–19 pandemije te prisilan prijelaz na nastavu na daljinu, kako diljem svijeta, tako i u Hrvatskoj. S obzirom na nagli prijelaz na online nastavu nije iznenađujuće kako je u prvim trenutcima izostala standardizirana uputa, nacionalnih tijela i agencija, usmjerena na zaštitu pojedinca u školskom digitalnom okruženju.

Analizom zakonskih regulativa utvrđeno je da postoji dobra pravna podloga za reguliranje zaštite pojedinca u (školskom) digitalnom okruženju te da su određeni aspekti zaštite (pitanje zaštite autorskih prava) dobro regulirani. Većina zakonskih regulativa koji su nadležni za pitanje zaštite pojedinca u digitalnom okruženju predstavljaju dobru podlogu za donošenje pravilnika o sigurnoj i odgovornoj

4.3 Limitations of research and recommendations for future research

The limitations of this research are related to the methodology. Although the set criteria of analysis are based on theoretical background, there are certainly other criteria by which the analysis of legal acts could and should be made. In addition, there are as well some other documents such as opinions published by Croatian Personal Data Protection Agency or guidelines of the Ministry of Science and Education which could be included in further research.

Besides, the research examined whether there are separate regulations governing the protection of individuals in the digital learning environment, and the authors believe that there is a possibility that schools have regulated rules of acceptable and responsible behavior and safe use of ICT within the house rules, ethical codex, school statute or some other internal document. Accordingly, authors for further research recommend examining whether schools have regulated the protection of the individual in the digital environment with some other internal documents, i.e., forms of safe, responsible, and acceptable use of ICT.

Furthermore, a potential limitation of research is related to sample selection. In this research, the sample consisted of main schools, but not dislocated (subordinate) schools, whose number is 1,115. Although when reviewing the websites of the main schools, we noticed that the dislocated schools mostly have a common website with the main schools and don't have their own internal documents, but follow those of the main schools, it cannot be claimed without empirical confirmation that the results obtained in this research also apply to dislocated schools.

5 Conclusion

Digital learning environment and digital advancement of schools present a natural flow of educational system development that follows technological and digital progress of 21st century as well as the goals set in the Strategija obrazovanja, znanosti i tehnologije (2014). That development process of digitally advanced schools was undoubtedly accelerated by COVID-19 pandemic and forced transition to distance teaching and learning all over the world as well as in Croatia. Taking into consideration the abrupt transition to online teaching and learning, it comes as no surprise that in the first moments there had been a lack of standardized instruction of competent authorities on the national level regarding the protection of an individual in a digital school environment.

Analyzing the law regulations, it has been determined that there is solid legal foundation for upotrebi IKT-a, s ciljem zaštite pojedinca u školskom digitalnom okruženju.

Iako ne postoji takav pravilnik na makro (nacionalnoj) razini, pojedine škole su samoinicijativno ili u sklopu CARNET-ovog projekta e-Škole donijele slične akte koji reguliraju zaštitu pojedinca u školskom digitalnom okruženju. Ipak, rezultati broja škola koje imaju donesen takav propis je više nego nezadovoljavajući i oko 5%. Pri tome, valja istaknuti kako je većina škola koje su donijele slične akte to učinila prije pojave pandemije, a čak manje od 1% škola je smatralo potrebnim to učiniti i nakon pojave pandemije, odnosno pri prelasku na nastavu na daljinu.

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regulating the protection of an individual in a digital (school) environment and that some of those protection aspects (e.g., copyright) are well regulated. Most regulations in charge of the protection of an individual in a digital environment present a solid base for adoption of rules of procedure for safe and responsible ICT use, all with the aim of protecting an individual in a digital learning environment.

Even though there are no such rules or guidelines on a national level, some schools took self-initiative, or took part in a CARNET project e-Schools and adopted similar acts regulating the protection of an individual in a digital learning environment. Nevertheless, the number of schools that adopted such an act is below satisfactory rate and accounts for around 5%. Most of schools that adopted those acts did it before the pandemic started. Moreover, only less than 1% schools found it necessary to adopt such regulations with the emergence of the pandemic and the transition to remote online teaching.

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