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## **Digital lifestyle – digital citizenship – digital pedagogy**

### **Introduction**

*„2017 from within the EU the Internet access households ratio has risen to 87%, which is 32% points exceed the ten years ago, 2007 levels. In 2017, 85% of the EU households used broadband network, which is approximately the double of the 2007 ratio.”<sup>1</sup>* We can read such and similar to this data in the report of Eurostat called “A digital economy and society statistics - households and individuals” report. Our lives are networked with the Internet and its digital tools - as it is proven clearly by the above data.

But do we have the knowledge, ability and attitude to live digitally, not just at the tool-driven level, but to be active participants? Are we able to participate effectively, responsibly and productively in the networked digital world? Does our (widely interpreted) digital competence can follow the accelerated development of the digital, online tools?

In this study, we discuss the question of how we can develop digital citizenship competence from our daily digital life. Meanwhile, we also discuss the role and potential of digital pedagogy which can give the opportunity for the practice and development of digital citizenship competence whether in a formal, informal or non-formal education system.

### **Digital lifestyle**

Today it is a commonplace that digitalisation is strongly permeating our lives. However, not long ago, before the Internet was spreading, we lived a much more located life, and we were exposed to a variety of media. If we wanted to talk to a friend – we needed a line phone; if we wanted to find out about the daily news – we turned on the TV or bought a newspaper; and if we wanted to do some social programme – we had to find new places or visit places in person. We did not know about the existence of many interesting events or groups, because no one “put us”, as is often the case with social networking sites and websites.

Nowadays the Internet has become the dominant medium: it has radically transformed and virtually merged our reading habits, watching TV and communication habits. This is confirmed by a recent online market research that was completed at the end of 2018 by the National Media and Infocommunications Authority in Hungary and revealed the characteristics of residential internet use.<sup>2</sup> More than 3,000 Hungarians over the age of 16 participated in the research. According to the data, 88% of the sample has a smart phone, which has been considered as the leading Internet tool since 2017: 77% of the respondents use their smartphone for internet (53% use portable PC and 52% use desktop PC). The following figure shows the prevalence of the types of activities that can be performed on the Internet, which confirms the above statement that the Internet combines all the different media.

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<sup>1</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital\\_economy\\_and\\_society\\_statistics\\_-\\_households\\_and\\_individuals/hu#Internet-hozz.C3.A1f.C3.A9r.C3.A9s](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals/hu#Internet-hozz.C3.A1f.C3.A9r.C3.A9s)

<sup>2</sup> [http://nmhh.hu/dokumentum/202180/lakossagi\\_internethasznalat\\_2018.pdf](http://nmhh.hu/dokumentum/202180/lakossagi_internethasznalat_2018.pdf)

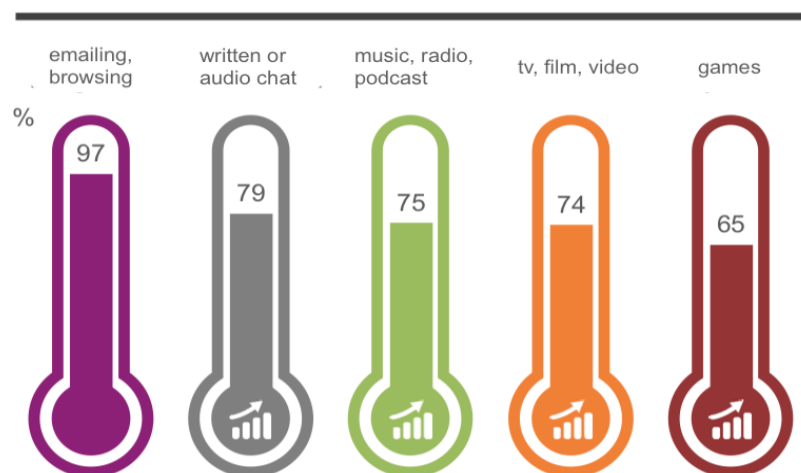


Figure 1: Frequency of internet activity types

In addition to the most frequent activities shown in the figure, the Internet can be used for a number of other purposes: for example it can help us to use e-services in government (vid. filing tax declarations); it can navigate us anywhere (via e.g. Google Maps); and it can provide for us the opportunity of learning at the right time and the right place (vid. MOOC). In 2019, it is no longer a question of whether or not we have a digital device to reach these opportunities. However, there are two other issues that go far beyond digital access. One is the question of **attitudes**, because as with everything in life, we related somehow to the digital world, to the online environment and to the information society. The participants in this research were divided into 8 groups according to the number of accepted and rejected opinions on the role of the Internet in their lives. As you can see in the figure below, the group names are referred to the group's relationship to the Internet. Two-thirds of the participants in the research showed a more positive attitude, while one-third were more negative.

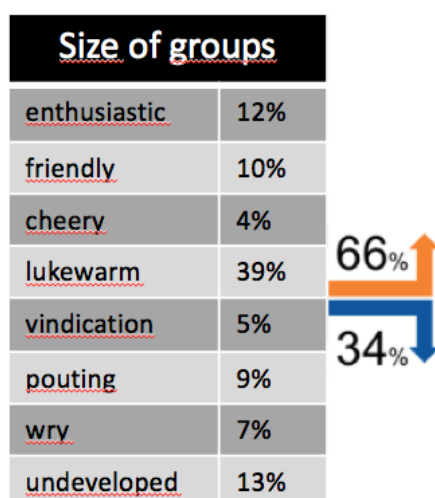


Figure 2: Rate of groups based on their relationship to the Internet

Attitudes can be formed, and people's emotional attitudes can be influenced by the right tools. It would be worthwhile to show good examples of enthusiastic, friendly or cheerful use of the Internet for users with vindication, pouting and enforcing. Attitude formation is necessary because it is the

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gateway to change: if there is not enough openness in people, then we cannot enter the gate to get into the digital world that is useful, functional, easy to use and even joyful for the citizens.

Another issue that goes beyond digital access in addition to attitudes is the question of **competence**: are you able to take advantage of the benefits of digitalisation, use e-services or be productive in the online environment?

### **Digital citizenship**

When discussing our digital lifestyle, we have the feeling that we are surrounded by a strongly tool-oriented world. We only know little about what people are doing on their smartphone or laptop and what the quality of each activity is. The introduction of the concept of digital citizenship was justified when online activities had reached a high frequency and level. It brought the expectations from the user's to be useful and valuable in the digital environment both for the community and the individuals as well.

Digital citizenship is known in two different interpretations. One of the conceptual approaches defines digital citizenship from sociology, social theory, and the other from education.

### **Digital citizenship in sociology**

According to the sociological approach, digital citizenship is the extension and promotion of traditional citizenship activities in the online space. In *Digital Citizenship* (Mossberger et al., 2008), the authors explain that the central issue is the access to the Internet for all citizens, because the internet is the necessary link to extend our current offline citizen activities to online space (Ollé, 2011).

Considering digital citizenship in the context of social theory, Estonia can easily come to our mind, which has built a digital society as a first pioneer in the world. According to their credo, they constantly seek and develop new digital solutions that allow things to get done faster, better, and cheaper. That's how it came today that

- 98% of Estonians have a national ID-card,
- 90% of population uses the Internet regularly,
- 88% of households have computers.<sup>3</sup>

We can find among the more than 500 e-services provided for citizens:

- e-banking: 99% of banking transactions are online.
- e-healthcare: 99% of patients have countrywide- accessible digital records.
- e-government: over 30% of Estonian voters from 116 countries use i-Voting in Estonian elections.
- e-Business: time to establish a business reduced from 5 days to 3 hours so 98% of companies are established online.

e-Estonia is an incredible success story about an efficiently functioning digital society that grew out of a partnership between a proactive government, a forward-looking IT sector and a switched-on, tech-savvy population. When they started building their own information and digital society more than two decades ago, the Internet was not yet available to the citizens, nor did they have digital tools to use e-services. Nonetheless, they were committed on the launch of innovative digital services, because they have been guided by practical benefits. They wanted to provide a digital society where moving services from a traditional environment to a digital environment makes everyday life faster and cheaper. A

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<sup>3</sup> <https://e-estonia.com/wp-content/uploads/e-estonia-facts-18-09-21.pdf>

good example of this is *Skype* application which was originally developed and continues to be developed in Estonia. When *Skype* was released in 2003, it radically changed the communication habits of the past. It made available to crowd of people (both financially and technologically), to make a video call to their family or friends around the world.

The systematic and step-by-step introduction of electronic services has brought many economic benefits to the country:

- each year, 12 Eiffel Tower-sized paper rolls are saved not only for themselves but for the planet;
- the use of electronic signatures will save \$500 million in administrative costs for the country's budget;
- they save 800 years of working time every year thanks to the e-services;
- many foreign investors are attracted by the quick and easy establishment of businesses.

Establish a business online is one of the youngest services in Estonia and is called e-Residency. E-Residency is a vision of a borderless digital society that implements citizens of the global world to join the digital business world. This service makes it possible for anyone in the world to start and manage an EU-based company online through the Estonian platform. That way, people can become so-called e-residents, which is not citizenship, but that they will have access to the EU business environment and can use public e-services through their digital identity.<sup>4</sup>

In addition to the measurable economic benefits mentioned above, we must also explain what kind of awareness-raising power is behind the creation of the digital state and how citizens can access services without barriers and be able to use the electronic services. The e-services become part of the everyday life of citizens: it is not just about emailing, browsing, watching TV, etc. but also using electronic services (from public administration through the health services to intelligent transportation). So these e-services have become one of the most important part of their digital lifestyle.

It's not a question that one of the basic conditions for a digital society is that all citizens have unrestricted access to electronic services, ie they have access to the Internet with the right quality and bandwidth.<sup>5</sup> Thanks to the strong involvement of the IT sector, the access has been provided to all Estonian citizens, as illustrated by the above data on the use of electronic services. In addition to access, citizens also need to use technology at a good skill level while experiencing that the electronic services don't make life more difficult and more complicated, but also can bring personal benefits. It was emphasized by the governance, for example, when Population Register and State Portal were built in 2001. These – and all other e-services – are also interoperable, which means that citizens' simple personal information is in one database to which all e-services have access, and so the citizens have to provide their own data only once.

Digital transformation in schools and the development of digital competence is essential to be able to use digital technology in a very high level. The Estonian government did not set a smaller goal than to develop the digital competence of all the estonian citizens. In Estonia they „believe that raising smarter kids is the smartest investment a country can make. Estonia's educational digital revolution implements modern digital technology more efficiently and effectively in learning and teaching, improving the digital skills of the entire nation. One example: by 2020 all study materials in Estonia will be digitized and available through an e-schoolbag.”<sup>6</sup> If it will be a reality, then children will gradually become accustomed to the digital environment and its effective use at early childhood. And educators - as they have a digital lifestyle which is permeated with e-services and digital tools - are great examples to

<sup>4</sup> <https://e-estonia.com/solutions/e-identity/e-residency/>

<sup>5</sup> The European Union Digital Agenda also requires this for Member States by 2020.

<sup>6</sup> <https://e-estonia.com/wp-content/uploads/eestonia-guide-a5-14022019.pdf>

children for how people can use the online environment responsibly, effectively and productively. Think about how much easier it is for a teacher, or even every teacher, to become a digital citizen with a high level of digital competence, growing up in a digital society. This digital society indirectly affects the education system so these more than 500 e-services is a huge advantage for the education and for the digital transformation in schools as well.

The example of the Estonians shows how people become digital citizens, if the state is committed to making their citizens' lives easier and easier. It is interesting, however, that the concept of *digital citizenship* is nowhere to be read in the descriptions of Estonia. The *digital society and digital citizens* are referred to several times, but despite the fact that many of their citizenship duties are online, they do not use the word *digital citizenship*. Of course, the concept can be easily replaced and described in the social science approach, and in this situation, the *digital citizen* is a pretty good concept of what happens to Estonian citizens. The concept of *digital citizenship* in the educational context is much more definite, as it interprets the concept as a competence and cannot substitute it with other words in this form.

### Digital citizenship in education

The discourse on *digital citizenship* (abbr. *digcit*) related to education basically thinks that digcit can be a competence. It is based on the concept that online and offline activities and lives of individuals are not two separate worlds, but our online activities are part of our offline everyday. Therefore, it is expected that an individual's online activities be as constructive, productive and valuable to the community as expected from them offline. While the concept of social theory - and the Estonian example - is strongly technology-oriented towards digital citizenship, the pedagogical approach is characterized by the fact that the use of digital devices is not only a question of technology, but rather a question of functionality at all aspects of life.

Digital citizenship as a competence is published in the Standards of ISTE (International Society for Social Science Education) from time to time. „*The ISTE Standards are a framework for students, educators, administrators, coaches and computer science educators to rethink education and create innovative learning environments. The standards are helping educators and education leaders worldwide re-engineer schools and classrooms for digital age learning, no matter where they are on the journey to effective edtech integration.*”<sup>7</sup>

Because the digital world and the technological environment have changed a lot, so the ISTE Standards have undergone major changes over the last 20 years. The first Standard list for Students was born in 1998 (National Educational Technology Standards for Students – NETS-S), followed in 2000 by a Standards for Teachers and then in 2001 for Administrators.

Subsequently, a new standard, ISTE Standards for Students was published in 2007. The main difference between the two standards is a good follow-up of the 9 years of technological change: while in 1998, the major goal was to learn to use digital devices for almost everyone, in 2007 the emphasis has been placed on using technology not only in everyday life but also in learning. It was then focused on the benefits of using digital technology in the classroom environment. The emblematic tool of the era is the mobile cart, which enabled the teacher to use digital devices in any classroom at any age group.<sup>8</sup> Therefore, the standard for teachers (ISTE Standards for Teachers 2008) and the standard for administrators (ISTE Standards for Administrators 2009) had to be updated after the student standard. In 2011, two new target groups were listed: the ISTE Standards for Coaches and the ISTE Standards for Computer Science Educators were released.

<sup>7</sup> <https://www.iste.org/standards>

<sup>8</sup> <https://www.iste.org/explore/ISTE-blog/Because-the-world-is-changing%2C-so-are-the-ISTE-Standards>

The results of a 2014 survey encouraged the organization to revise the student standard again. One of the main goals of the research was to explore the BYOD concept by examining the use of own devices in schools.<sup>9</sup> The emblematic tool of the era is the mobile device, which gives you the opportunity to do what you cannot done easily before: the 1:1 learning environment is becoming more and more easily realized within the classroom. As a result, ISTE has set the goal of helping learners and teachers to take advantage of the potential of the devices in their hands and to transform learning through using technology. The new ISTE Standards for Students was released in June 2016.

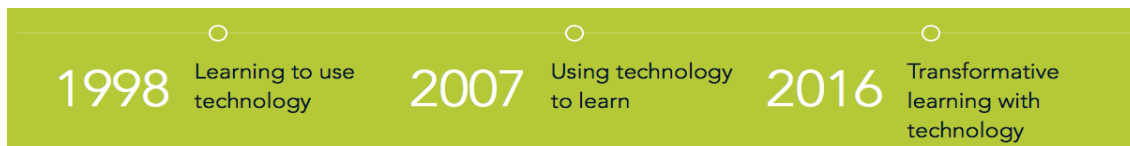


Figure 3: The evolution of ISTE Standards for Students

Then in June 2017 appeared a new standard for teachers with a new name (ISTE Standards for Educators), and in June 2018, also with a new name, standard for education leaders (ISTE Standards for Education Leaders). Finally, after 2011, the ISTE Standards for Computer Science Educators was renewed in 2019.

Digital Citizenship as a competence has evolved along with ISTE standards. In the 1998 version, digital citizenship was not included in the list of standards, as we were far from being aware of the quality use of the digital tools. In 2007 digital citizenship has become one standard in the Standards for Students and in 2008 in the Standards for Teacher as well. According to both, digital citizenship means that a person understands the human, social, and cultural aspects of technology and is able to act ethical and show lawful behavior in the use of technology (as well).

|                              | ISTE NETS T (2008)   | ISTE NETS S (2007)  |
|------------------------------|--|---|
| Digital citizenship means... | <p>A. advocate, model and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources.</p> <p>B. address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources.</p> <p>C. promote and model digital etiquette and responsible social interactions related to the use of technology and information.</p> <p>D. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools.<sup>10</sup></p> | <p>A. Advocate and practice safe, legal, and responsible use of information and technology.</p> <p>B. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity</p> <p>C. Demonstrate personal responsibility for lifelong learning.</p> <p>D. Exhibit leadership for digital citizenship.<sup>11</sup></p> |

Figure 4: Definition of digital citizenship

<sup>9</sup> [https://www.siaa.net/visionk20/2014\\_VK20-ES.pdf](https://www.siaa.net/visionk20/2014_VK20-ES.pdf)

<sup>10</sup> [https://id.iste.org/docs/pdfs/20-14\\_ISTE\\_Standards-T\\_PDF.pdf](https://id.iste.org/docs/pdfs/20-14_ISTE_Standards-T_PDF.pdf)

<sup>11</sup> <http://images.apple.com/education/docs/Apple-ISTE-NETS-Students.pdf>

In 2011, Mike Ribble released a book that is the most comprehensive and most complex description of digital citizenship as a competence (Ribble, 2011). Ribble deals specifically with this in an educational, school environment, and describes digital citizenship as a complex of nine elements. In the first edition of the book, the nine elements were framed into three categories based on their immediacy to the typical school environment. These categories combine the elements that:

- directly affect student learning and academic performance,
- affect the overall school environment and student behavior,
- affect student life outside the school environment (Ribble, 2011; Ollé, 2011).

In 2016, Ribble said that a lot of things has changed since the digital citizenship first release, but „*the importance of teaching students how to respect and protect themselves and others online doesn't*”.<sup>12</sup> Therefore, in the second edition of the book, you can find a new, different kind of division of the nine elements of digital citizenship: this is the REP model: respect, educate, and protect (REP).

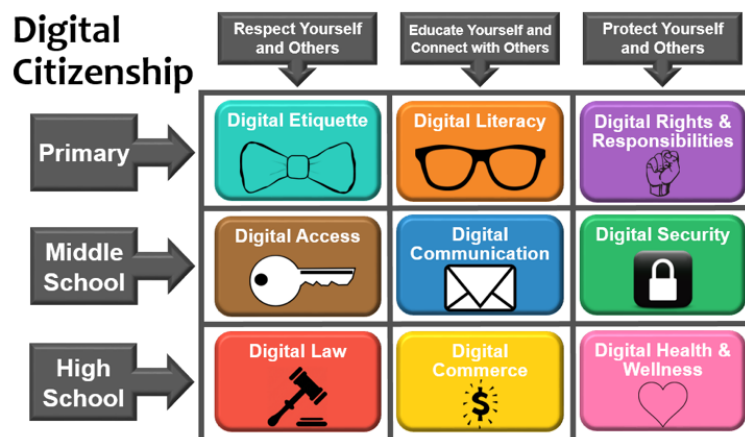


Figure 5: Nine elements of digital citizenship (REP)

- **R is for *respect*** yourself and others.
- **Etiquette.** Students need to understand how their technology use affects others. Remind them that there is a person on the other end of their text, tweet, comment or post.
- **Access.** Not everyone has the same opportunities with technology, whether the issue is physical, socio-economic or location. Those who have more access to technology need to help those who don't.
- **Law.** The ease of using online tools has allowed some people to steal, harass and cause problems for others online. Students need to know they can't take content without permission, or at least give credit to those who created it.

**E is for *educating*** yourself and others.

**Literacy.** Learning happens everywhere. Regardless of whether we get our information from friends, family or online, we need to be aware that it might not be correct. Students need to understand technology and what it can do and be willing to learn new skills so they can use it properly.

<sup>12</sup> <https://www.iste.org/explore/Lead-the-way/Digital-citizenship-is-more-important-than-ever>



**Communication.** Knowing when and where to use technology is important. Using email, text or social media may not be the best method for interacting with someone. Students need to think about the message first, then the method, and decide if the manner and audience is appropriate.

**Commerce.** Technology allows us to buy and sell across the globe. Students should be careful about sharing personal and credit card information. Online commerce comes with risks.

**P is for *protecting*** yourself and others.

**Rights and responsibilities.** Build trust so that if something happens online, students are willing to share their problems or concerns about what has happened. Students should know who they are friends with on social networking sites so that they can remain safe online.

**Security.** It is everyone's responsibility to guard their tools and data by having software and applications that protect them from online intruders. When we are all connected, everyone is responsible for security.

**Health and wellness.** There needs to be a balance between the online world and the real world. Students should establish limits with technology and spend quality face-to-face time with friends and family.

*Figure 4* also shows that the nine elements are not only arranged on the vertical axes, but also has an additional aspect along the horizontal axis. These 9 elements may also be organized by the appropriate school level at which each element may be modeled and facilitated: primary, middle, and high school. At the younger grades, digital technology skills may be modeled, with a minor focus on facilitation. At the later grades, the responsibility of skills may be placed more with the students with facilitation by educators.<sup>13</sup>

But not only the REP model is the one and only digital citizenship model, it is also worth looking at the Hungarian model of digital citizenship for those who are interested in the topic, because it goes one step far then the REP model.

In 2013, a Hungarian research group (Eötvös Loránd University Faculty of Education and Psychology – Information Society Teaching and Researching Group) produced a model of digital citizenship in Hungary, which was an adapted and slightly modified version of the Ribble model described above. The design of the model was followed by two different large-scale empirical studies (Ollé et al., 2013; Czirfusz et al., 2015). Using the conclusions of the researches, in 2016 began the rethinking of the Hungarian digital citizenship model. Then the research team took into consideration not only the Hungarian model of 2013 and its original Ribble model, but also the internationally significant DigComp 2.0 framework (Vuorikari et al., 2016). Thus, a new model of digital citizenship was born, which, in comparison with the previous models, completely redefined the relationship between the competencies.<sup>14</sup>

<sup>13</sup> <https://www.setbc.org/2018/06/digital-citizenship-2018/>

<sup>14</sup> The model was formed in 2016 by a research team consisting of Dóra Czirfusz, Lilla Habók, László Hülber, Sándor Király, Csaba Komló, Anita Lanszki, János Ollé, Adrienn Papp-Danka, Réka Racsko.



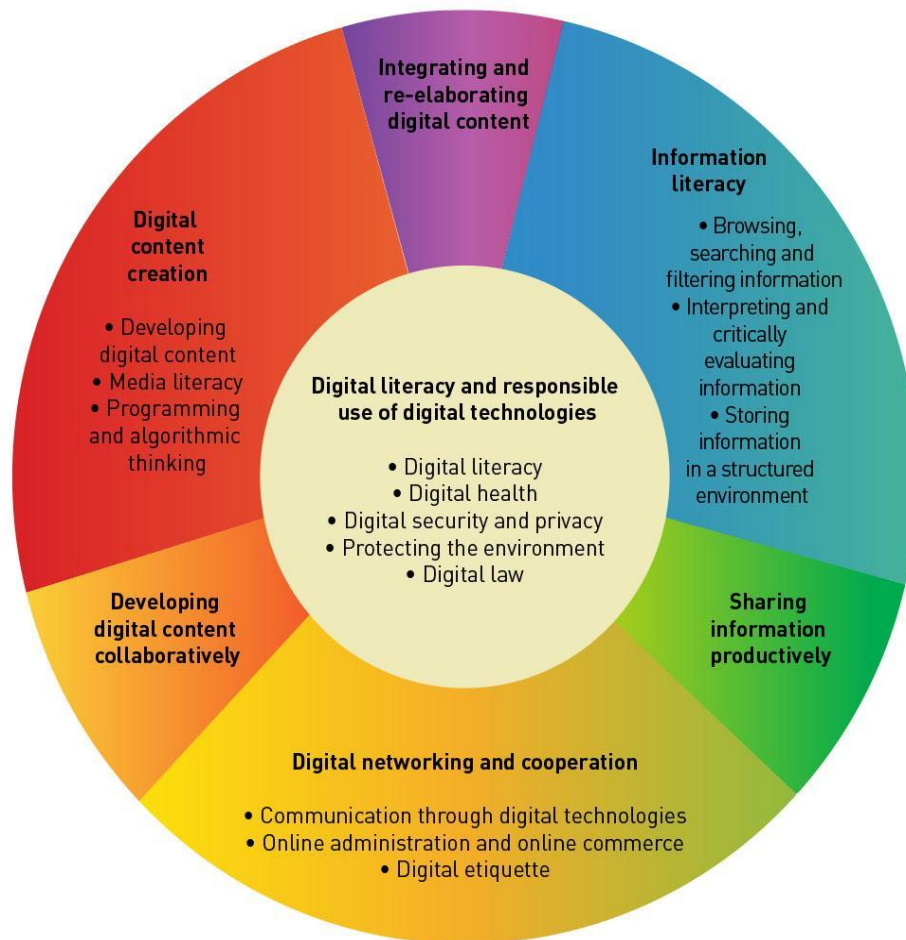


Figure 6: The Hungarian Model of the Digital Citizenship Competence

In the middle of the circle model, *Digital Literacy and Responsible Use of Digital Technology* competence forms the basis and starting point of the model. This is the element which serve as the basis for any further competences and are a prerequisite for their operation. The middle of the circle is built around three core competencies: *Information Literacy*, *Digital Networking and Cooperation* and *Digital Content Creation*, and intersect three additional sub-competencies. In the circle model we depicted the key competences with basic colors (blue, yellow, red), and in their cross-section, the subcompetences with the mixture of the key competences' colors. The main difference between REP model and the hungarian model is that the latter defines all these elements like competences which all have 3 development levels, like in DigComp: level A, B and C (Papp-Danka - Lanszki, 2016).

### The relationship of digital pedagogy and digital citizenship

Digital citizenship as a competence, its integration into ISTE standards, or its role in Ribble's home, school and extracurricular environment all predestine that digital citizenship is learnable, teachable, and developable. Digital pedagogical methods would make it possible, but the situation is not that simple.

It would not be easy to interpret the concept of digital pedagogy or present its history, withal it is not the purpose of this study. However, for some thought, it is worth retrospectively at the changes in the

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digital pedagogy theory. Exactly 20 years ago, in 1999 was published Andrea Kárpáti's much-cited study, *Digital Pedagogy: Methods of Computer Assisted Teaching* (Kárpáti, 1999). Twenty years ago, the digital pedagogical toolkit was powered by a personal computer that we know is the least popular digital tool in 2019. (PC rate has been steadily declining since 2015 in Hungary, from 62% at that time to 50%. In parallel, smartphone rate has risen from 62% in 2014 to 83% today. So while before 2015, desktop PCs rate was significantly higher, recently this rate has turned to smartphones completely.<sup>15</sup>) Kárpáti's article 20 years ago discusses i.a. the types of computer-supported teaching tools, and methodological issues such as what subjects can be supported by the computer and how the device facilitates distance learning. Kárpáti expected the computer to be a Trojan horse in the school when behind the walls come up the new digital methods and contents that seem to be dangerous to traditional pedagogical practice (Kárpáti, 1999). It has been a relatively long time before this heightened expectation subsided and we have noticed that digital devices, whether a computer or a smartphone, do not function as Trojan horses and in some respects do not at all represent a "threat" to traditional pedagogical practice. „Unfortunately, IT solutions and fast, ubiquitous internet access did not work as Trojan horses: innovative educational methods did not capture the power of the world's schools. Considering the ICT skills and abilities expected of educators, it is not surprising why: infrastructure, development, training, mentoring, intellectual and emotional support have fallen behind. As a result, machines have become more responsive to their users, and digital pedagogy is becoming less and less different from traditional pedagogy.” (Kárpáti, 2013)

There are certainly some people who disagree with the statements about digital pedagogy written above. But maybe we all agree that the digital device cannot be a pedagogical tool in itself. The reasons why digital pedagogy did not bring the expected breakthrough are varied, as Kárpáti pointed it out. In addition, researchers have identified more reasons such as teachers' beliefs about what constitutes effective education, lack of technological expertise, and local policies that do not give teachers time and inspiration to explore and experiment.<sup>16</sup>

However, digital citizenship and its introduction into educational practice could be a good opportunity for digital pedagogy to go in the direction it is expected to take. This can be viewed in e-Estonia, who are fortunate enough to have their educators set a living example for their students in terms of how they can, should, and be advised to behave and act in the digital environment. But not only does it matter how authentic the teacher can be as a role model, but also whether good practices on competence development can be born and shared. In many places in the international literature, we can see digital citizenship as a competence in the curricula, and we can also find a lot of lesson plans and good practices are shared to promote and maintain the importance of the topic.

We highly recommend to visit the United States' leading non-profit organization Common Sense Media's Digital Citizenship website (<https://www.commonsense.org/education/digital-citizenship>), which contains resources on the topic:

- K–12 Digital Citizenship Curriculum
- Ready-to-teach lessons for grades 3–8
- Curriculum training
- Family engagement resources
- Case studies
- Student games

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<sup>15</sup> Forrás: [http://nmhh.hu/dokumentum/202180/lakossagi\\_internethasznalat\\_2018.pdf](http://nmhh.hu/dokumentum/202180/lakossagi_internethasznalat_2018.pdf)

<sup>16</sup> <https://www.edweek.org/ew/articles/2015/06/11/why-ed-tech-is-not-transforming-how.html?qs=ISTE+standards>

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We also recommend the ISTE organization's digital citizenship webpage (<https://www.iste.org/learn/digital-citizenship>), which can help you in these subjects:

- Online course called „Digital Citizenship in Action”
- Posters, videos and blogs about digcit

It's worth to visit Mike Ribble the expert's official website: <http://www.digitalcitizenship.net>. For more resources here you can find a detailed list which contains podcasts, articles, toolkits, websites and groups on Digital Citizenship. You should read the third edition of Ribble's book (*Digital Citizenship in Schools*, 2015) because it provides lesson plans, aligned to the ISTE Standards for Students, for integrating the development of digcit into the curriculum. In addition, the book provides professional development activities to help technology leaders educate other technology users in their schools or districts on implementing digital citizenship.

Last, but not least we recommend you an issue by **European Schoolnet eTwinning project**, called „*Aktív állampolgárok nevelése. A digitális állampolgárság fejlesztése az eTwinninggel*” (2016). In this book you can read a short description about more than 30 eTwinning projects connected to digital citizenship and if you are interested in the details of a project than you can visit the official link provided.

### Summary

„*Digital citizenship is the new citizenship*” – Nicole Krueger gave this sounding title to his blog post in 2017.<sup>17</sup> Whether we approach digital citizenship from sociology or pedagogy, the above statement holds true in both respects. The rapid and grand development of Estonia over the past 15-20 years has created the digital citizen who uses and benefits the state-provided e-services. We also see that estonians do not stop at the borders of their own country but open up to the global world and make some of their electronic services available to all (European Union) citizens (see e-Residency). These people will have a new citizenship, in a global digital world where they have the opportunity to become digital citizens, regardless of national borders.

In pedagogy, it is not so clear that digital citizenship is the new citizenship, but it is sure that the concept of digital competence, standards and digital citizenship has changed a lot over the last 15-20 years. Digital pedagogy has not yet found its own way to develop a new methodology by putting theoretical models into practice. We all know that in educational practice, technology can be used in many different ways and it makes the situation of digital pedagogy more difficult. Digital technology can be used in a way that preserves previous, traditional, teacher-centered educational practices – but it is only the first stage of the SAMR model, called **Substitution**. According to *Puentedura* there are four stages of the impact of digital technology in teaching.<sup>18</sup> But the first two stages are not enough for transformation, because educational transformation starts only on the third level.

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<sup>17</sup> <https://www.iste.org/explore/Digital-citizenship/Digital-citizenship-is-the-new-citizenship>

<sup>18</sup> <http://hippasus.com/blog/>

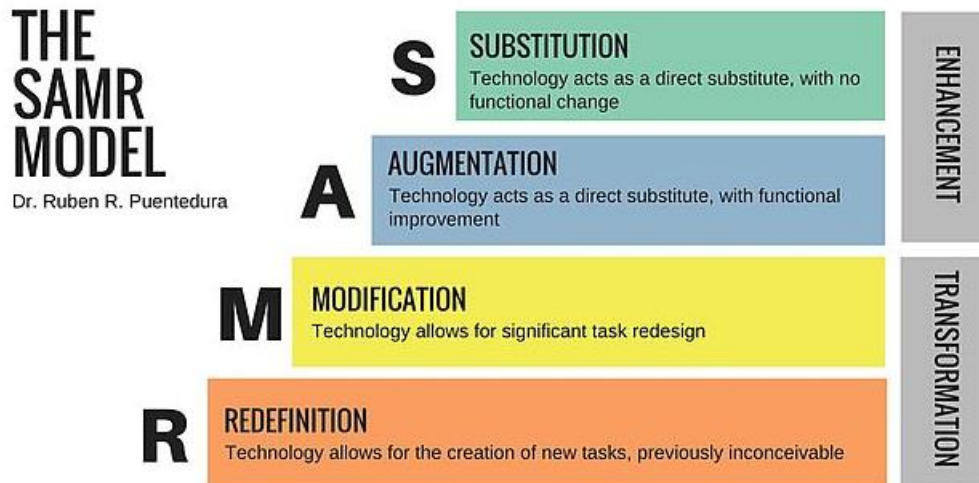


Figure 7: The SAMR Model

While one might argue over whether an activity can be defined as one level or another, the important concept to grasp here is the level of student engagement.<sup>19</sup> In SAMR model it means that on the **Redefinition** stage digital technology becomes more important in the classroom but at the same time becomes more invisibly woven into the demands of good teaching and learning. Because the success of the digital transformation and the development of the characteristics of digital pedagogy do not depend on technology. We all know that it is absolutely possible to create a learner-centered, collaborative, action-oriented and problem-oriented educational environment without technology. Devices are the tools but not the aims.

Digital citizenship, however, deserves special attention not only among international organizations and literature, but also in Hungary. Digital citizenship is about developing those the digital capabilities that can serve as the basis not only for our everyday activities, but also for our learning and teaching activities. Of course, it would be an overstatement to say that if digital citizenship competence were to be integrated into the curricula, then pedagogical methods would change radically. But it might not be an overstatement to say what it would be like if we don't always warn the students what not to do in the digital environment and if we don't always protect them from everything in the digital environment. We had better to teach them how to be active and productive participants in digital learning and for what social purposes they can use the amazing power of social media. That is what digital citizenship is about, especially if it is interpreted as the latest hungarian model. Today's students are the main determinants of what the future digital world is going to look like and consequently, they are the creators of digital citizenship. Help them with guides, good practices and proper education to make them living online and offline life! Digital lifestyle, digital citizenship and digital pedagogy should form a complementary relationship such as the circle model shows it!

<sup>19</sup> <https://sites.google.com/a/msad60.org/technology-is-learning/samr-model>

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