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**Poverty and social exclusion in the Bereg, in
the world of innovative and multimedia devices**

ABSTRACT

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Keywords: poverty, social exclusion, digital exclusion, multimedia devices, Bereg, primary school, information and communication technology

Theoretical framework

The objectives of the study are presented in the Introduction of the Doctoral dissertation. The chance of integration into society of the youth from 27 settlements from the Bereg Subregion, one of the most disadvantaged parts of Szabolcs-Szatmár-Bereg County, was analyzed. Beside the factors of poverty and social exclusion, one relatively new dimension of social inequality, namely the digital inequality, was taken into consideration. The main objective of the study was to determine the manner of endangerment in which the 13-14-year-old age group is socially excluded due to conventional factors and, additionally, due to the new inequality. The digital device supply, the purpose of use, characteristics, the relationship between the youth and these innovative devices and the degree of integration into education of these were mapped. Other aims of the study were the answers to the following questions: does the usage of these devices help in the development of the subregion; will the future generation be able to meet the expectations of the present era and will they be able to find employment in the highly digitalized labor market; do these devices, and the lack of knowledge of their operation, deepen the social inequality further. As a consequence, the questions arise of what parents, society, the government can do to avoid digital exclusion.

The second chapter (2.1) presents the theoretical background of the research. First, the scientific literature on poverty and social exclusion was summarized. The concept used by sociologists (e.g. Rudolf Andorka, Éva Havas, Elena Zamafir, Zsuzsa Ferge, Gyula Zombori, Amartya Sen, Péter László, Júlia Szalai) dealing with this question is adapted using the definition of poverty and specifying different its types. In 2001, following the European Council meeting and the release of the Laeken Declaration, the notion of poverty was broadened with the notion of exclusion. According to this, the social exclusion extends the notion of poverty, the emphasis being on its social and structural reasons. Social exclusion is a process of isolation during which certain people and social groups don't have choice opportunities. Poverty is not simply the lack of income, but a series of social disadvantages, having as one of its symptoms a low income (after Siposné, 2014).

According to the author, in today's digital society the generally accepted standard of living includes the presence of various multimedia devices and the knowledge of the digital

competences to operate these, as well as the availability of internet. Beside the conventional types of poverty, the digital poverty must be mentioned as well as the people, who don't have these devices because of material reasons and can't join the internet. Without these, the individuals can't fully be part of the modern society, which can make them derivative.

The exclusion implies the marginalization from or the limited access to wellbeing. This, in a sociological approach, means inequality of opportunities, more precisely that the access to institutional services is socially unequally distributed (Zombori, 1994). Such inequality can also occur in the coverage of digital networks or in chance of gaining the knowledge needed to operate the multimedia digital devices. These factors are part of the secondary digital inequality. It is emphasized, that the social exclusion can not only occur due to primary digital inequality. It is not enough to analyze whether the individual is provided with an adequate device or if an internet connection is available, since social exclusion can derive from the inappropriate use or lack digital literacy. In these processes the individuals or groups don't have choosing possibilities, which lead to the lack of social participation, and can result in deprivation of the civil, political and social rights.

The concept approach of Amartya Sen, which puts the accent on the lack of abilities (possibilities) meaning the way the disadvantaged members of the growing generation can face the challenges of the present technical world with the intent of a growing social capital in the interest of their own happiness (2003).

The next subchapter deals with risk factors of poverty and social exclusion. In Hungary, the biggest risk is the outage from the labor market, which affects those who lost their job, career starters, people reentering the job market from maternity or other types of leaves or the disabled. Another important factor is the low schooling, since low educational attainment leads to higher unemployment. Families bringing up 3 or more children are at higher risk of poverty, since the number of children under the age of 18 increases the risk of poverty. Similarly, families with only one parent, bringing up their child alone, are at higher risk than average. The Romany origin increases the risk threefold, in their circles the durable poverty is tenfold. Beside the above mentioned, the social geographic location is an important factor as well (European Council, 2001; Spéder 2002, 2003; Fábrián and Takács, 2012).

The work partly discusses why social relationships are important and the vision of the future. Poverty and social relationships are in strong correlation, giving the research social meaning: the aid of fellow humans can be important for poor people, as a coping mechanism, which can decrease the negative consequences of a bad material situation (Saegert et al., 2001). Albert Fruzsina and Hajdú Gábor (2016) showed that material exclusion and social

exclusion lead to an exclusion down spiral. Nowadays poverty and social exclusion is present in a modified form, which influences the youth's vision of the future greatly (Chen and Vazsonyi, 2013). This work presents that in today's society, social poverty can be an important factor in social exclusion, as well as the picture painted about one's self image and vision of the future. The author of this work searched the answers to the following questions: are the student, based on their own judgement, aware of and do they have the necessary abilities, skills and knowledge to become successful grown-ups. What are they willing to do for their goals, what examples are they seeing in their environment?

The next part is discussing the possibilities of measuring poverty and social exclusion. The fact that the deficiency of using the internet is in the list of measured items by Eurostat shows that a new form of social inequality has developed, being in correlation with owning multimedia devices and using the internet.

The next chapter (2.2) present the relatively new (digital) inequality. The first chapter relays on presenting the formation of the concept itself. The digital intention means basically the access in different rates to some social groups and IT devices. The inequality presents itself in the well-known factors of social research such as age, educational attainment, material situation, residence or geographical region. The concepts of primary and secondary inequality first appeared in the two-thousands. The primary inequality examines the access to internet, while the secondary inequality deals with the internet usage habits (Csepeli and Prazsák, 2012). The secondary inequality has five dimensions as defined by DiMaggio-Hargittai (2008): technical amenities, social aid, inequality of network autonomy, device usage and differences in knowledge. It was an important question from the beginning whether the spreading of info-communicative devices leads to the weakening of the factors causing deprivation or if the gap between the individual groups deepens further.

The next subchapter of the second chapter presents the scientific literature dealing with the effect of digital technologies on social relationships as shown in the three typologies by Wellmann et al. (2001, 2003).

The last subchapter focusing on digital inequality shows the information and communication technologies in the educational system. The spreading of ICT devices is one of Hungary's education policy's emphasized goal. The country's national core curriculum contains the key competences needed to be acquired as well as developmental tasks, including digital competences, indicating the confident, ethical use of ICT devices in the fields of work, social relationships, communication and leisure time activities, as well as the required abilities and activities (Government Decree 110/2012. (VI. 4.) about the edition, implementation and

application of the core curriculum, 2012). In 2016, the Hungarian Government approved the Hungarian Digital Educational Strategy, which has as its goal the spreading of digital literacy. The DES presents the problems of digital education in detail. The institutions with inadequate ICT are unable to prepare individuals for the labor market. The dissemination of ICT devices in education is in correlation with the demeanor of school directors towards innovation and the positive attitude of the educators. The evolution of the digital technology is unstoppable. The only solution is an educational system that keeps up with this evolution (Hungarian Digital Education Strategy - Magyarország Digitális Oktatási Stratégiája, 2016).

The next chapter of the dissertation (2.3) analyzes the phenomena in Hungary. The first subchapter analyzes the present situation regarding poverty and social exclusion in comparison with the rest of Europe, using data from KSH and Eurostat. Since 2012, the ratio of poverty and social exclusion is in a continuous decreasing. In 2017, it was 25,6%, meaning that every fourth person was affected. Those suffering from heavy material deprivation (13,4%) is the highest, but the poor relative income ratio is also high (14,5%). Due to public employment the very low labor intensity households are low (6,6%). In 2017, the most important risk factors were the following: educational attainment, unemployment, residential development, Romany descent, number of children.

The following chapter presents the digital evolution level of Hungary in an international comparison. According to the DESI indicator, Hungary is among the weak performing countries. In comparison to the EU, the internet access is lower and the regular internet users are less. The internet coverage of households with the least income decreases yearly. Analyzing the internet use, differences can be spotted in the age, gender, educational attainment and geographical regions. Using the internet on mobile devices is more widespread. The population of Hungary is more active on social media than most European countries. Here, the age, educational attainment and geographical regions are of importance. The digital competences of Hungarians fall short of those of the EU because of factors such as age and educational attainment. The coverage of multimedia devices in Hungary is constantly growing. 93,5% of households have mobile phones, 43,5% of laptops, 15% of desktop computers and the LCD/plasma TV ownership is high as well.

At the end of this chapter the application situations of information-communication technologies in Hungary are presented in the light of different researches, surveys, showing some of the obstacles of the ICT usage.

A separate chapter is devoted to the struggle against social and digital exclusion. The merger of the social and digital spheres is undoubtable today, as established by Helsper in

2011. According to his opinion, the disagreements are due to important factors and interventions on which politics must concentrate. The presented documents, strategies (Europe 2020 Strategy, Nemzeti Infokommunikációs Stratégia, Digitális Jólét Program, Digitális Oktatási Stratégia) show that the decreasing of poverty and social exclusion, as well as digital exclusion is an important goal for the Government of Hungary, but also for the European Union and United Nations.

The theoretical background has as its last chapter the most important researches so far, which focus on the dimension of digital inequality and the relationship between social and digital exclusion.

Research methodology

Presentation of the analyzed subregion and settlements

At the beginning of the chapter, the Bereg subregion is presented in detail, as well as the reason for choosing this area.

Bereg lays on the right shore of the Tisza River in Szabolcs-Szatmár-Bereg County and is part of the Szatmár-Bereg Plain (Páll, 2001). According to the borders before Trianon, the once Bereg County region incorporates 27 settlements, its center being Vásárosnamény, which forms since 2004, together with the villages from Bereg, the Vásárosnamény Subregion.

The evolution of this subregion is hindered by several factors besides the structure of the settlements: the eastern location, a lower employment rate compared to the rest of the country, high Romany ratio and significant migration. Although the natural population growth is higher than that of the country, this is due to the high fertility, less educated, poorer layer.

Goals

The present research fits into the topic of social sciences, since it discusses the effect of innovative and multimedia devices on society considering poverty and social exclusion. The analyzed location is a subregion of Szabolcs-Szatmár-Bereg County, where this process has intensified effects this being one of the most underdeveloped regions of the country. No study regarding poverty and multimedia device analysis was performed in the area yet. Based on the research results it is possible for professionals to develop new programs, strategies and methods, which can obstruct the widening and deepening of the present gap.

The goal was to determine the life situation, future social status, the related demographic and individual background, the relationship with innovative and multimedia devices and their role in everyday life of the teens as extensively as possible.

Research questions, hypothesizes

The research is grouped into three groups of question, the first one being the supply of multimedia devices in correlation with the sociodemographic and socioeconomic background.

First the relationship between the educational attainment of the parents and the supply of multimedia devices was analyzed. Based on past researches this implied: *“the higher the educational attainment of the parents, the higher the number of multimedia devices at the child’s disposition and the devices are used in more ways with more goals”*.

The next hypothesis assumed a relationship between the income of the parents, the material background of the students and the presence of multimedia devices, since *“children living in a better financial situation are better equipped with multimedia devices and their goal and ways of use are more diverse”*.

Other than the age, income, educational attainment, the residence kind can also be determinative in from the point of view of poverty and social exclusion, presuming that *“children living in the so called „problematic region” have less multimedia devices and use the internet less”*.

Researches were born where the digital inequality was shown between the two genders, in favor of men. Therefore, the hypothesis was: *“boys dispose of more multimedia devices, are more skilled in their use, use the internet and social media more”*.

The second part of the research maps the relationship between the learning culture of the students and the multimedia devices. The hypothesis was the following: *“The more multimedia devices a child has, the more it uses if for internet, social media, school assignments or knowledge gathering”*.

Finally, the social relationships and characteristics of the vision of the future of the analyzed age group were mapped. The innovative devices of today are influencing the social relationships and vision of the future of the youth, therefor the assumption was the following: *“The more multimedia devices a child has, the more they are used, the better the social relationships are and de more positive its vision of the future is”* as well as *„those children, who have better quality social relationships have a more positive vision of future”*.

Procedure

The work was done using the quantitative method. The survey contained 73 questions and was split into 8 chapters.

The survey was completed by 280 students, who live in the most eastern part of Hungary, in the Bereg Subregion. From the 27 settlements of the region, 12 have upper primary education in 14 institutions. Research ethics were kept. The director of only one school did not approve to take part in the research. From the other 13 institution, the 8th graders took part in the research, but there was an institution where the 7th and 8th grades were merged. The sample was therefore composed of 16 7th graders and 264 8th graders. The completing of the survey was voluntary and was done in the institutions during homeroom classes in January 2017. The timeframe was approx. 45 minutes. The completion was anonymous and did not contain any information from which the students could be identified. The data was then stored in Excel sheets.

Sample characteristics

The analyzed sample (n=280) contained 163 boys (58%) and 117 girls (42%). Their age rang was 12-17, with an average of 14. 47 live in urban and 233 in rural environment. The parents of the children have mainly secondary education (117 women, 158 men), in case of both genders, and those having a skilled worker qualification are in majority (77 women, 131 men). Parents with primary schooling are also many (94 women, 76 men), the least being those with university degrees (64 women, 41 men). 5 girls and 5 boys couldn't say what level of education their parents have. The parents of most children are living together (226), 182 in marriage and 44 as domestic partners. 29 students have divorced parents.

Data processing, statistical methods

The processing and interpretation of the data was made using Microsoft Excel and the SPSS statistical programs.

For the testing of the hypothesizes a series of methods were used. The relationships of the variables with each other considering the hypothesizes were tested using the Pearson correlation and the Spearman rank correlation, variation analysis, cross table and discrimination analysis.

The differences between genders and those with unemployed or without family members were analyzed two-sample t-tests. A global vulnerability indicator was created to analyze the

social exclusion in the social groups through vulnerability. For this indicator, the highest educational attainment of the parents was taken into consideration, so that both parents' schooling counted equally. The indicator became the explaining variable of a logistic-regression model. From the analyzed sample 59% was part of the vulnerable group, 41% of the invulnerable group.

The results of the survey were compared with the following data:

- Country, county and district data from the 2011 census
- KSH (Központi Statisztikai Hivatal – Central Statistical Office): Household standards (A háztartások életszínvonala), 2016, 2017
- Hungarian Youth Research (Magyar Ifjúság Kutatás): Székely Levente - Szabó Andrea. 2016
- NMHH (Nemzeti Média-és Hírközlési Hatóság – National Media and Communication Authority): Online market research on the internet usage of the population 2016, 2017

The presentation of the results from the survey

Several risk factors of poverty and social exclusion were discovered in the sample. 83% of students live in rural areas and most (86%) live in a 3-6 people household with both their parents (81,8%). 14,7% live with only one parent, which is not a high ration, but families with three or more children in 42,14%. The ratio of the two groups is 56,84%, meaning that more than half of the students are in a disadvantaged family structure. In case of Romany population, the risk factor increases threefold in comparison to the average of the country. In the survey this was not addressed separately, the collected data originates from the school and institution directors. According to their estimation, 50,5% of the students have at least on parent of Romany origin.

Considering the educational attainment of the parents, the ratio for men with professional training (46,8%) and women with a diploma (22,9%) is outstanding. High school graduation in both genders is low (men 9,3%, women 14,3%). The author evaluates this negatively, the lower ratio of primary school graduation (women 33,6%, men 27,1%) is evaluated positively. The majority of parents carry out physical work (men 56,1%, women 37,5%). The unemployment in the case of women is high, 16,43%, while in case of men it is 6,43%.

The estimation of the family income was a problem for many students, 22,8% could not answer the question. The most students don't live in high-income households. Only 23,9% live in a 200.000 Ft income household, and 5,6% must live from less than a monthly 100.000 Ft. Despite this, 90,3% say that the material situation of their family is average or above

average, most of them doesn't consider themselves poor. 15,71% considers themselves being poorer than average, but analyzing the other answers, the picture is not as clear. In 29,3% of the families there was unemployment in the last year. 25% consider they have everything, 50% says that they can only afford the necessities for everyday life, 12,1% say that even this is hard for them.

Most students (95,7%) live in private property family homes or apartments. 79,7% of the children are satisfied with their living conditions, the others less.

The survey also addressed the problems the students must face in their environment. The concept of "problematic neighborhood" was analyzed, since the subregion did not undergo any evolution, overcoming of difficulties or catching up since the regime change, but segregated areas started appearing, and in some cases the process of ghettoization began. This affects 14 of the 27 settlements (one ghettoized settlement, five segregated areas in three settlements and in 11 settlements smaller segregates (Balázs et al., 2012).

The risk factors present in the environments of the students are in a decreasing order the following: they rarely see people learning further after high school or being employed, or that someone graduates high school successfully or gets a profession, they frequently see people smoking, rarely students getting good marks, rarely people drinking alcohol or being in gangs, very rarely people who have problems with the police, take drugs or carry a weapon.

It is important for students to own multimedia devices. 81,4% think that they are in advantage compared to other students, 51,4% think they have a happier life, 47,5% think that they can be more successful with them. Every fourth student (26,1%) have felt disadvantaged without these devices or the use of internet. The results of the research show, that the students who took part are well equipped with these even in comparison with the national data. Most students (50,7%) have 3-7 devices, 30,7% even more: 8-14 devices, but there were two students who have 20 such devices. 1,4% don't have any multimedia devices (4 students). 93,2% of the students own a personal mobile phone, 90% a smartphone, 65,7% a desktop, 40,7% a laptop/notebook, 48,6% a tablet, 47,9% a plasma/LCD TV. 68,6% of the students with a mobile phone also have an internet service. 54,6% of the students use their phone for calling and 25,7% for sending SMS. The primary objective of the devices is entertainment: listening to music (73,6 %), internet (69,6 %), taking photos (63,9 %), games (52,1 %), watching videos (46,1 %), sending pictures (45 %). One youngling pursues 10 actions on their mobile phone, on average. The students from this research are active internet users and use it in most cases for entertainment (listening to music: 75,4 %, social media: 75 %, games: 53,6 %) and searching for information. Most of the use the internet in a wide range, for 8-11

activities (38,02 %). 88,2 % use the internet daily, 8,2 % weekly, 1,1 % monthly. 78,6 % spend more hours on the internet on weekdays, 1,4 % don't use the internet at all. On weekends, 83,3 % use the internet for more hours, those who don't use the internet are 2,9 %. 73,6 % of students use the internet on their smartphones, 52,1 % on their PCs, 22,5 % on their tablets, 20 % on their smart TVs. Most of them (50,4 %) use one device for browsing the internet. 95 % of the students are members of social media (Facebook, Instagram). The users use these sites daily (83,21 %), weekly (4,6 %) and monthly (1,8 %), or even less frequent (3,9 %). 64,3 % of the users spend an hour or more on these sites. The most popular activities are chatting (70,7 %), commenting (39,3 %), uploading pictures, videos (35 %). Most students use 5-10 functions of the social media pages.

Similarly to the multimedia device supply of the students, such devices can be found in their homes as well (mobilphone: 91,8%, desktop: 71,4%, laptop/notebook: 44,3%, tablet: 52,1%, plazma/LCD TV 55,4%). 88,2% of the students have internet connection at home, but use the internet outside their home as well: mostly at friends (53,2%), other places (relatives, neighbors, free Wi-Fi spots) (43,9%), and school (29,3%). The parental control of the children is low. Frequent, joint internet use with the parents is true for 23,2%. When they use the internet, parental supervision is very rare or non-existent (78,2%). 66,9% of the parents talk very rarely to never with their children about the topics seen on the internet. Parents helping their children in this topic showed the same tendency. The most rarely parents help their children to take advantage of the possibilities offered by the internet (the frequency of the answer "never" was 51,8%), and the use of security settings, filters (the frequency of the answer "never" was 50,7%) is not supported either. The most help given by the parents is in explaining the content of pages, in browsing and in processing negative experiences in the online world. The survey shows that many parents use the withdrawal of internet as a punishment.

Because the multimedia devices are greatly present in the lives of the students, they use them in their studies as well. More than half of the students say that they help in getting better learning results. Internet is used by 89,3% of the students for the broadening of their knowledge and by 87,1% for gaining knowledge. Three quarters of the students are of the opinion that the use of internet helps them in learning at home, and even more, 88,4% of the surveyed say that it is necessary for completing school tasks. Most of them are satisfied with their computer knowledge, 16,1% have problems with it and 81,4% would use more multimedia devices in school. In most of the institutions the ICT classes are few, in most places the use of these devices is rare (49,3%-ban) and in the schools of 10,7 % never.

Analyzing the social relationships of the students, 55% say that they don't have any negative experiences with the behavior of their companions, but 37,8% experience insults on a monthly basis. Students have to mostly face insults (57,2%) and indecent behavior (60,7%), the rarely about nationality (19,6%). Overall the friendships and relationships of the student are positive. 54,7% of the children trust their friends, while 39% only a little or not at all. In case of the questions regarding the social relationships, 10,4% of the students undertake these, while 32,8% do only in a small amount and to 49,5% this is not characteristic. So, students have no problems in regard of their social relationships. The problem is not the existing relationships, but the fact that the student, according to their own opinion, establish new relationships hard. 92,1% share this opinion.

9,7% of the children did not answer the questions regarding their vision of the future. Overall, from the 12 questions in 11 the positive answers were in majority. The exception being the question about how relaxed they are when they think about their future. Most were negative in this regard (52,9%). The students were the most positive about the following statements, answering "sure": "I know how I want to view my life" (45%), "I know what I need to be a successful adult" (31,1%), "I try to better my future prospects" (32,5%), "I am ready to work hard for a better life" (39,6%), "I am sure I will graduate high school" (42,5%), and "I want to go to university after graduation" (27,5%). Analyzing this last statement, the most pessimistic survey-takers were noticed, since 22,5% are sure that they won't study further after graduating high school. From the given answers it is visible that most students, even if they aren't confident about their future, they have an imagined vision of the future, which is rather positive. This can be helpful when fighting their disadvantages, the poverty and the social exclusion.

Results of the hypothesis analysis

Analysis of the multimedia and ICT device supply in correlation with the sociodemographic and socioeconomic background

Analysis of the first hypothesis

Poverty and social exclusion have been analyzed using several methods and all have discovered similar problems. The children being poor when they grow up is a direct consequence of the educational attainment of the parents and this effect is more pronounced than in the majority of European countries (Virág, 2006; Bass et al., 2007; Gábos, 2010; Spéder 2003).

The Hungarian and international studies lead to the conclusion that the use of digital devices and the internet beside the age, residence and income, the most significant factor is the educational attainment (ex.: Galács and Ságvári, 2008; Csepeli and Prazsák, 2010, etc.).

The author was curious to know in what manner the educational attainment of the parents is responsible to the risk of the exclusion of the students and does this factor deepen the digital inequality.

The hypothesis was the following: *The higher the educational attainment of the parents, the bigger the multimedia device supply in disposition of the child and the use of these is more variable.*

It was part of the hypothesis, that the analysis was not only centered on the relationship between the educational attainment and the devices, but it also assumed that this has a positive effect on the variability of their use, even in transgenerational ways, firstly because of the bigger number of devices and their types, and secondly because the higher educational attainment can lead to a the parents being more informed regarding the digital world.

The research showed that the relationship between the educational attainment of the parents and the presence of digital devices can still be noticed in the Bereg Subregion.

The number of own and home multimedia and internet devices grows in proportion with the educational attainment of the parents. According to the Spearman rank correlation the two factors have a medium strength significant correlation (number of own multimedia devices – father : $p < 0,000$, $\rho = 0,325$, mother: $p < 0,000$, $\rho = 0,405$; number of home multimedia devices – father: $p < 0,000$, $\rho = 0,375$, mother: $p < 0,000$, $\rho = 0,462$ devices used for browsing the internet – father: $p < 0,002$, $\rho = 0,184$, mother: $p < 0,001$, $\rho = 0,201$). Owning smartphones is only in correlation with the educational attainment of the mother, using a cross-table examination ($p < 0,012$, Cramer $V = 0,216$). For further analysis a vulnerability indicator was created, with its use the analyzed group was split into two. The first vulnerability group contain the students who's parents had a lower educational attainment (59%), while the

second group was composed of students with parents of higher educational attainment (41%). The digital device supply of the two groups was compared using 5 variables: number of own multimedia devices, number of multimedia devices at home, variability of internet use, number of devices used for browsing the internet, assistance of the parents, which were then analyzed using one-factor variance analysis. This, together with the Spearman rank correlation, showed that there is a significant difference between the number of own multimedia devices ($p=0,000$), home multimedia devices ($p=0,004$) and the devices used for browsing the internet ($p=0,003$) in the two groups. The cross-table analysis with two new variables (smartphone, mobile internet) nuanced the picture further. According to this, the members of the vulnerable group, namely the children with lower school attainment parents had more smartphones and mobile internet. The relationship is significant, although weak in both cases (smartphone: $p<0,005$, Cramer $V=0,169$, mobile internet: $p<0,059$, Cramer $V=0,114$). Correlation was found not only with the number of devices, but with their use as well. The diversity of the internet use is positively correlated with the educational attainment of the parents (father: $p<0,029$, $\rho=0,132$, mother: $p<0,000$, $\rho=0,218$). This result was shown the variability analysis of both the vulnerable and the less vulnerable group ($p=0,004$). The diversity of the use of smartphones is in significant correlation ($p=0,035$) with the educational attainment of the father, but only in a small amount ($\eta^2=0,041$). The cross-table examination of the vulnerable and not vulnerable groups showed that the children whose parents have a lower educational attainment are more prone to use their mobile phones to browse the internet (58%). There is a relationship between the parental assistance and the educational attainment of the father ($p<0,028$, $\rho=0,140$). This was not proven by the comparison analysis of the vulnerable and not vulnerable groups ($p=0,301$). It is generally true that the children of parents with a higher educational attainment have more multimedia devices, but for the most modern and innovative devices such as the smartphone and the associated mobile internet use, this statement is not true. This is also true for the diversity of use of the smartphones, since only the educational attainment of the father has a role in this. Furthermore, the relationship between the use of internet and the educational attainment of the parents can be shown. According to the cross-table examination, there is no correlation between the internet use and the educational attainment of the parents. Two one-variable, regression models were made. The explanatory variable was the vulnerability variable, the dependent variable the number of own multimedia devices in the first case, and the number of home multimedia devices in the second. Modeling was made with the help of Enter method. The own multimedia devices model had an explanatory force of 0,152 based on Nagelkerke R^2 , the home multimedia

device model being 0,172. It can be seen that the vulnerability (in both models $p=0,000$) shows the own ($B=-1,460$) and home ($B=-1,574$) multimedia device supply.

From the results the following conclusions can be drawn: the educational attainment of the parents still has an effect on the existence of digital devices and de use of the internet, but its role shows a decreasing tendency. The hypothesis was only partly fulfilled, since the children of parents with lower educational attainment also have smartphones and mobile internet and, although no significant correlation can be shown, the internet users are from this category as well in majority. It can be seen, that in today's society, despite material situation and educational attainment, digital technology is a basic need.

Analysis of the second hypothesis

Besides educational attainment, the socio-economic background of the families is an important factor in whether the digital gap is or isn't formed in some way or another (Csepeli and Prazsák, 2010; Galgács and Ságvári, 2008). Besides the variable (educational attainment) formulated in the first hypothesis, the author analyzed the role of the socioeconomic situation from the point of view of the availability of the devices and the diversity of second-generation (child) use.

Based on this the following hypothesis was formulated: *The children living in a better material situation have a better supply of multimedia devices, their use is more diverse.*

During the analysis of the hypothesis the Spearman rank correlation, the Pearson correlation and the two-sample t-test showed the following results: both the personal and the home multimedia device numbers are in correlation with factors which influence the material situation such as the number of earners (own: $p<0,011$, $\rho=0,152$, home: $p<0,005$, $\rho=0,170$), the material situation of the family (own: $p<0,000$, $\rho=0,259$, home: $p<0,000$, $\rho=0,277$), the income situation (own: $p<0,003$, $\rho=0,179$, home: $p<0,004$, $\rho=0,173$) or the presence of unemployment in the family (own: $t=2,355$, $p=0,019$, home: $t=2,652$, $p=0,008$). Beside this there is a significant relationship between the number of devices which use internet and the material situation ($p<0,002$, $\rho=0,139$) and the income situation ($p<0,007$, $\rho=0,160$). There is also a relationship between the own and home multimedia devices as well as the number of devices used for browsing the internet and the subjective judgement of the material situation (own: $p<0,000$, $r=0,371$, home: $p<0,000$, $r=0,311$, browsing the internet: $p<0,008$, $r=0,161$). There is an inverse correlation between the number

of family members and the number of multimedia devices a student has. This research didn't find a significant correlation between the number of family members and the material situation, income situation or the number of employed family members, but rather with the number of devices. The students, who use the internet more, feel wealthier, ($p < 0,000$, $r = 0,263$), where the number of employed family members is higher ($p < 0,016$, $\rho = 0,145$) and where the family has a higher income ($p < 0,032$, $\rho = 0,128$) and material situation ($p < 0,007$, $\rho = 0,162$). Using the internet beside at home can only be correlated with the number of employed family members ($p < 0,020$, $\rho = 0,139$). The use of mobile phones is in correlation with the income ($p < 0,000$, $\rho = 0,265$) and material situation ($p < 0,006$, $\rho = 0,176$) of the families, as well as the subjective opinion of the students on their wellbeing ($p < 0,001$, $r = 0,210$).

After analyzing the correlations, the conclusion can be drawn that the children living in a better material situation, therefore in families where unemployment is present at a lower extent, have more multimedia devices at their disposal, the devices are used for more activities and generally more devices are used.

Beside these, the correlations that could not be detected, are of equal importance. It is not clear whether those living in better material situations use smartphones or social media more. Analyzing the risk of poverty and social exclusion it is visible, that the more innovative a device or activity is, the less relevant the material situation of the families is.

The hypothesis came true, but the correlations were weaker than suspected. The conventional picture of poverty is proven by the present study as well. In the 21st century it is no longer a luxury to own multimedia devices, this being confirmed by the data of the analysis. It was determined that the material situation continues to have an effect on the supply of digital devices, but is, however, not the primary reason for digital inequality. Targeted material aids (like laptops, tablets) can help in catching the people up who live in poverty. It is probable, that the students get the desired multimedia devices even without these aids. It is another question, whether these devices are good quality, modern or running out, or the manner in which the student can use them, what its digital competences are.

Analysis of the third hypothesis

Beside the family, the local social environment can be a strong factor in the social processes, which includes the use of ICT. The author starts off from the fact that the characteristics of the local society can both be stimulating and inhibiting on the homely digital environment and internet use of the children. This effect system can work in numerous ways,

such as following or giving examples or simply with the indirect effect of the characteristic income of the given area. Low school attainment, unemployment and the various forms of criminal activities, such as the components of a “problematic region”, which are often indicators of a low socioeconomical status (Bodonyi et al., 2015), which leaves its mark on the use of multimedia devices and the internet.

Starting from the first suggestion, the following hypothesis was formulated: *The children living in a so called “problematic area” have fewer multimedia devices and use the internet less.*

The correlations were found using the Pearson correlation regarding the residential area, the number of own (p<0,016, r=-0,145), and home (p<0,008, r=-0,161) multimedia devices, the use of internet (p<0,039, r=-0,125), the use of internet in other places than home (p<0,009, r=-0,158) and as suggested, the relationship was negative. The discriminace analysis showed a significant correlation between the length of internet use (p<0,004, Wilks’ Lambda value: 0,935). Those living in problematic areas spend more time on the internet then those living in nicer areas.

The hypothesis was fulfilled, since the children living in problematic areas have somewhat less multimedia devices and use the internet less. Similar results can be seen when analyzing the relationship between the material situation and the multimedia devices. The correlations are weak, in some cases they can’t be shown. In case of the number of smartphones, their variety of use there isn’t a significant correlation. The detected small-scale relationships are probably because those living in such areas must get by under worse material circumstances. In the segregated areas of the subregion, where the basic needs are not met, smartphones and smart TVs can be found similarly to the regions with better material situation.

Analysis of the fourth hypothesis

National and international scientific literature show the differences between the use of internet in case of men and women. Several studies show, that men are in advantage regarding the use of computers and the internet (Hargitai, 2003, Csepeli and Prazsák 2010), but differences can be observed in social relationships as well (Martin et al., 2016). Therefor this study elaborated and compared the characteristics of the two genders. The following hypothesis was given: *Boys have more multimedia devices, are more proficient in their use, use the internet and social media more often”.*

After calculating the means, the following data was noticed: boys have more own multimedia devices (boys: 7,55, girls: 5,96), home multimedia devices (boys: 8,5, girls: 7,53),

use the internet on more devices (boys: 1,77, girls: 1,6), more activities (boys: 8,51, girls: 8,35) and in more locations beside their home (boys:1,21 locations, girls:1,17 locations). In comparison, girls use the social media for more activities (girls: 8,58 activities, boys: 8,02 activities), as well as their mobile phone (girls:16,65 functions, boys: 15,47 functions), receive more parental assistance (girls: in 5,43 activities, boys: in 4,42 activities) and parental supervision is higher (girls: 4,42 activities, boys: 3,41 activities). The differences in most cases are minimal, the needed significance level is reached in only three cases (own multimedia devices: $t=3,319$, $p=0,002$; use of mobile phone: $t=-2,237$, $p=0,026$, parental assistance: $t=-2,671$, $p=0,008$), ergo the considerable differences between the two genders can only be shown in these three case. The higher number of multimedia devices in case of the boys can be due to the fact that they are more interested in innovative technological devices, but girls have a more diverse use of mobile phones due to their different social media habits. The fact that parents help their girls more can be because parents are more worried about the dangers of the online world and that their technical knowledge is behind that of the boys.

The hypothesis was partly fulfilled, because the boys have indeed more multimedia devices and use the internet more diversely. The research also shows that is more modern devices and activities are analyzed, the dominance of boys can't be shown.

The consequences of multimedia and ICT devices on the learning culture of the children

Analysis of the fifth hypothesis

The number and diversity of digital devices can be inspirational on the youth in terms of the actual use of these.

Several behavioral science researches prove, that the devices of our environment act as triggers or stimuli, therefore the author suspected that this can be true on the ICT use of the children living in the analyzed region. The relationship between the ICT devices and learning was analyzed by several scientific publications. It is generally accepted, that these devices have an important role in the transformation, remodeling and modernization of education and learning (Molnár, 2011; Huszti and Takács, 2015).

With the proving of the hypothesis, the author wanted to make clear, that the positive correlations are also present in case of the students living in the analyzed region.

Hypothesis: *The more multimedia devices a child has, the more it uses it for internet, social media, school tasks or learning.*

The inevitable, variable strength, significant relationship between the multimedia devices was confirmed by this study as well. There is a positive, strengthening relationship system between the quantity of multimedia devices, the variability of the internet use, the number of devices used for this, the frequency of use, the use of mobile phones and the use of social media. The use of these devices and activities correlates positively with the parental supervision, which can be brought in a strong, significant correlation with the parental help ($p < 0,000$, $r = 0,504$). The primary goal of this study was to study the manner in which the ownership and use of these devices affect the educational performances of the students. Finding the relationship was not easy, the Spearman rank correlation was of no help in this. Correlations were only found using the Chi square sample between the educational scores and the content of internet use. The test showed relationships between the educational performances and the information gathering on the internet ($p = 0,000$, Cramer $V = 0,435$), the use of Google ($p = 0,000$, Cramer $V = 0,415$), the browsing, reading ($p = 0,000$, Cramer $V = 0,321$), online shopping ($p < 0,003$, Cramer $V = 0,257$), e-mails ($p = 0,021$, Cramer $V = 0,219$), visiting social media pages ($p = 0,027$, Cramer $V = 0,217$), watching movies online ($p = 0,034$, Cramer $V = 0,259$) and downloading programs, softwares ($p = 0,035$, Cramer $V = 0,208$). The research also showed that the educational results of the have an effect on the existence of digital competences and their quality. The key question is not whether the student has a device and uses it, but what it is being used on and how effectively. For better educational results, the primary school students must gain better digital knowledge. The better the educational results of a student, the more “useful” it uses the internet. The primary activity of the excellent students is information gathering (91%), gaining information from the internet (89%), social media use (89%), listening to music online (73%) and watching movies online (73%), while the students with satisfactory results use the internet exclusively for entertainment purposes: social media (65%), listening to (58%) or downloading (50%) music, downloading (46%) or playing online games (46%). For information gathering with the purpose of learning only 15% use the internet.

The results of the analysis show that the number of multimedia and mobile devices, their internet use and the browsing of social media pages have a positive effect on each other. The hypothesis was only partly fulfilled, the Spearman rank correlation did not find proof, that the number of multimedia devices, the internet or the social media would have an effect on the learning efficiency. The cross-table examination showed that the content elements of the internet use have a significant correlation with the learning results of the children.

The correlation between social background, social relationships and the vision of the future

Analysis of the sixth hypothesis

Our present and future relationships are greatly influenced by the proper speed and bandwidth internet and multimedia devices. Studies have proven that the internet user who has a wide connection network, nurses its relationships better than the person who isn't an internet user in the same social and economic circumstances. The correlation can also go in a different direction: the people with a more extended relationship network are more likely to know the new technologies, therefore, the innovation-diffusion, through the bright social network, is faster and more efficient. The people disclose new technologies to each other, talk about their possibilities, and maybe help each other in the learning processes. An important point of view can be the motivation, because we can more probably find internet users in the extended circles of friends and acquaintances, with whom we can e-mail, chat, play games, skype or share our experiences regarding the internet, and thereby the entering the internet has a meaning and a goal (Csüllög, 2012).

The effects of social media pages were analyzed by several studies, most presuming a negative correlation between the modern multimedia devices and the social relationships and the development of the self-image, which can distort the vision of the future. The social media pages make contacts and information easier and more effective. Social relationships can widen due to the easier communication, but these are in most cases superficial and less honest. The depth and quality of the relationships can be wounded. Tari Annamária (2011) warns that social media has a great effect on self-image, therefor also on personality and emotional evolution. According to her, the online world transforms our real personality, the use of social media can lead to serious anxiety in childhood.

The present analysis, despite the above mentioned statements, was based on the work of researchers who emphasized the positive effects of internet use on the social capital (e.g.: Albert et al., 2004) and the author assumed that for a young person growing up in a disadvantaged subregion the digital devices can be a window to a new world. Therefore, the following hypothesis was formulated: *The more multimedia devices a child has and the frequently it uses them, the better its social relationships and the more positive its vision of the future.*

According to the Pearson correlation, the good friendships are influenced positively by the use of a more widespread internet ($p < 0,018$, $r = 0,147$) and mobile phone ($p < 0,027$, $r = 0,146$) and problematic social relationships are negatively affected by these ($p < 0,002$, $r = -0,194$). The

last factor correlating positively with the “problematic region” ($p < 0,009$, $r = 0,163$), which is, of course, not surprising. Problematic social relationships can be generated by a higher multimedia device supply ($p < 0,049$, $r = 0,124$), the frequent use of internet in other places than one’s home ($p < 0,049$, $r = 0,124$), the stricter parental supervision ($p < 0,002$, $r = 0,193$) or the social suggestibility ($p < 0,001$, $r = 0,207$). There are two factors, which cause problems for good quality friendships too, meaning that they are problematic for both the better and the more friendships. One of these is the use of social media (good friendships: $p < 0,044$, $r = 0,129$, problematic social relationships: $p < 0,011$, $r = 0,162$), the other the parental assistance (good friendships: $p < 0,017$, $r = 0,153$, problematic social relationships: $p < 0,001$, $r = 0,207$). Proving the part of the hypothesis, regarding the fact that the use of modern devices, in this subregion, would have a positive effect on the social relationships of the student, was unsuccessful. The part of the hypothesis analysis, which put the multimedia devices together with the vision of the future, was more successful. The vision of the future of the students is in positive correlation with the number of owned multimedia devices ($p < 0,000$, $r = 0,302$), the number of devices used for browsing the internet ($p < 0,008$, $r = 0,169$), the number of multimedia devices at home ($p < 0,000$, $r = 0,267$), the variability of internet use ($p < 0,000$, $r = 0,367$), the use of social media ($p < 0,002$, $r = 0,201$), the use of mobile phones ($p < 0,000$, $r = 0,284$), the calling on the phone ($p < 0,023$, $\rho = 0,148$), sending SMS ($p < 0,021$, $\rho = 0,150$), the parental supervision ($p < 0,000$, $r = 0,237$) and the parental assistance ($p < 0,000$, $r = 0,226$).

In his study, the author found some other results in regard of social relationships and the vision of the future, which are not related to the world of multimedia devices but can be interesting from a scientific point of view. The social suggestibility has a negative significant impact on the educational attainment of the mothers ($p < 0,022$, $\rho = -0,144$), and those living in “problematic regions” have more problematic social relationships ($p < 0,009$, $r = 0,163$). The cross-table examination showed, that the students, who said they were members of a “gang”, are willing to continue their education ($p < 0,047$, Cramer $V = 0,147$). This examination did not reveal any connection between the educational attainment of the parents and the willingness the students to study further. The study made on the vulnerable and not vulnerable groups has, however, found a correlation. For this, three indicators were created (education/employment, substance abuse, deviance) using the items from the 20th question of the survey. After the cross-table examination, one of the three indicators (education/employment) showed a significant correlation ($p < 0,001$), where the Cramer indicator showed a weak relationship (Cramer $V = 0,203$). It is visible, that the children with lower educational attainment parents see in their environment negative examples more often regarding education and employment.

In this environment the substance abuse and the deviant behavior is more frequent. The high headcount in families leads to problematic social relationships ($p < 0,035$, $\rho = 0,132$), while better friendships are associated with higher income situations ($p < 0,015$, $\rho = 0,152$). The good friendships are protective factors in the problematic social relationships ($p < 0,012$, $\rho = -0,158$) and suggestibility ($p < 0,009$, $\rho = -0,164$). The unemployed family member, however, facilitates problematic social relationships ($t = -2,279$, $p = 0,024$). In regard of the vision of the future, the educational attainment of the mothers is of bigger importance ($p < 0,003$, $\rho = 0,189$), but it is affected, in a negative direction, by living in a “problematic region” ($p < 0,001$, $r = -0,221$). The Spearman rank correlation revealed the correlations between the vision of the future and the number of employed family members ($p < 0,025$, $\rho = 0,142$), the material situation of the family ($p < 0,026$, $\rho = 0,141$) and the income situation ($p < 0,010$, $\rho = 0,164$). According to the two-sample t-test, the vision of the future of the students is positively influenced if there is no unemployment in the family ($t = 4,586$, $p = 0,000$). These results prove, that the factors analyzed in this work from the poverty and social exclusion point of view (educational attainment, residence area, material situation) have an effect on society beside that on the world of digital devices.

Analysis of the seventh hypothesis

If the digital devices contribute to the social relationships, then they can also have a direct role in the development of the vision of the future. If this correlation is true, the access to digital devices could improve the vision of the future of the youth living in the region.

Based on this the hypothesis was the following: *The children, who have good quality social relationships, have a more positive vision of the future.*

The youth with more problematic social relationships is more socially influenceable ($p < 0,001$, $r = 0,517$), the two factors show a strong, significant correlation. These youngsters have less good quality friendships ($p < 0,002$, $r = -0,194$). The same weak negative significant relationship can be observed in good friendships and social suggestibility ($p < 0,001$, $r = -0,249$). The good friendships show a weak positive significant correlation with the positive vision of future ($p < 0,000$, $r = 0,298$).

Because the Pearson correlation calculation didn't show any significant correlations, other investigations were performed. The variance analysis did not lead to any results either, it only showed that the use of social media pages doesn't have any impacts on the vision of future ($p < 0,352$) and the time spent on the social media doesn't influence it either ($p < 0,353$).

When relationships were compared against future visions, it was shown that good friendships result in a positive vision of the future.

Practical usability of the research and future research directions

All risk factors of poverty and social exclusion are intensely present in the Bereg Subregion. The present research focused on the relationship between social and digital inequality. Because the chosen subregion is one of the least developed in Hungary, conclusions can be drawn to other subregions with similar socio-demographic characteristics. Data on the following was recovered regarding the 8th graders of the Bereg Subregion: socio-demographic and socio-economic characteristics, multimedia device supply, the goal and attributes of their use as well as causes of primary digital inequality and some causes for the secondary digital inequality. The research shows the manner in which the students are satisfied with their informatics knowledge, what they think of the effects these devices have on their future and learning results, how the ICT devices and their use is present in their school. As a secondary goal, the research presented the quality of social relationships, the vision of the future of the students, because the eventual exclusion and social competences can have an effect on their future societal status. The research as a total can foresee the manner in which the analyzed age group can tune into the world of labor and how they can comply to the challenges of the digital era. With the help of empirical research, new research data was produced. The significance analysis showed correlations between the educational attainment of the parents, the residential area, the material situation and the multimedia devices, the social relationships, the effects on the vision of the future of the students, the use of internet and the educational results. A vulnerability indicator was made with the use of the educational attainment of the parents. With the help of this, the vulnerable and not vulnerable groups were analyzed in concordance of the innovative devices and the role of the residential area. Two logistic regression models were also made, which are capable of prognosing the device supply.

The research can be broadened in many directions: it can be broadened for the entire area of the Szabolcs-Szatmár-Bereg County or subregions in different regions of the country. Other age groups, such as high school students can also be added to the research. The regression model can be broadened as well with the use of other factors of poverty and social exclusion new vulnerability indicators can be made.

Barriers of the research

The researched analysis was carried out on the primary digital inequalities and it did not disclose the secondary inequality dimension. The research was carried out on a subregion in Bereg and concerned only a small age-group. One risk factor of poverty and social exclusion is the Romany nationality. The opinions of the institution directors and teachers was taken into consideration since they have great experience in surveys. They were of the opinion that the students don't answer these questions with pleasure, only a few answered the question of their ethnicity. The survey was filled out by the students, none of the information came from the parents.

Exclusion in light of the research data

For the catching up of the Bereg Subregion, the increasing of the living standards of the inhabitants, the most important factor is the placement of most of those of active age in the world of work. By this, the poverty and social exclusion can be decreased the most. The Hungarian State tries to stimulate the people capable of working to be an active part of the primary labor market instead of making use of the social care system or taking part in the public work programs. The future generation has to stand its place in a labor market where the existence of digital competences is a fundamental condition. In the *Ministry of Innovation and Technology Professional Training 4.0. (Innovációs és Technológiai Minisztérium Szakképzés 4.0.)* entitled work the following was formulated: one of the main tasks of today's education is to prepare the youth for the future labor market, which has as one of its characteristics the rapid growing of technological development. The number of workplaces, which don't require professional training, is decreasing, whereas the need for workers trained in informatics and robotics shows a yearly growth. The government is aware of the importance of the question, the Digital Educational Strategy (Digitális Oktatási Stratégia) draws attention to the differences in digital competences (social situation, social-geographic location) leading to growth of social inequality. The materialization of digital inequality has as its main responsible education and training. The establishment of equal opportunities is an important task for both the state and educational institutions. From the point of view of digital exclusion this means, that each student has to have access to the same innovative devices. Possibilities have to be created, so that the society layer, which is falling behind, doesn't have

disadvantages in the use of these devices. The results of the research show, that those programs can be successful, which have as a goal the elimination of the secondary digital split. The fight against the secondary digital split is the most effective if the primary split is cleared. For this, free internet access on state or settlement level should be considered for those taking part in education, as well as renewed computers and the prolonged used of multimedia devices. The DES is an important element in the involvement of the students own multimedia devices in the education-learning process. Today, examples are rare in the subregion. The goal of the research was to find out in what manner the students of the Bereg Subregion are equipped with the necessary devices. With a few exceptions, in the proper extent. The device supply of schools and students meets the national average and even if they don't have the most innovative devices, the disadvantage is not as big to make it impossible to make the digital education more wide spread. The DES says that the school provides devices for the children who don't have any and programs exist for the acquisition aid of own devices. The author draws the attention to the fact that the sooner these programs are implemented, the faster can the digital education be realized. The areas of national competence assessment in Hungary are mathematics, text comprehension and foreign languages. The measurement of digital competences of the students would also be necessary. Although the government planed on their implementation, this did not take place until now. The results of the research show that the informatics education in the primary schools of the Bereg Subregion are not capable of creating equal digital opportunities, which would help the students of the subregion to break out of the patterns of their parents and get a marketable job. It would be necessary for the change, that the teachers recognize the importance of the question and that the IT point of view penetrated the whole educational process. Without the methodological evolution of the teachers and the proper, accessible digital curriculum there can be no real digital education in schools. The present condition remains, where the ICT devices are only used by teachers for a modern illustration method. In this digital world, the risk factors of poverty and social exclusion have to be complemented with a new factor: this being the digital illiteracy and covers the individuals, that can't use the innovative devices in such manner that their life quality improves or at least stagnates. Another risk factor is the shortage of multimedia devices used for internet, because without it the individual doesn't have the chance to acquire an appropriate level of proficiency. In today's digital world the use of modern devices is not a question of choice. Who doesn't use these, is undoubtedly in a disadvantage in comparison with the more digitally educated people. Services can be reached slower and harder, the

chances for employment or a higher remuneration are significantly lower, and the inclusion in society is harder.

Main conclusions of the research

The research showed that along some analyzed socio-demographic factor a level of inequality can be shown regarding the use of multimedia devices, those are not primary, but rather secondary inequalities. This is partly pleasing, because if one of the most disadvantaged regions shows this tendency, then the situation in the rest of the country is similar or better. The secondary digital inequality has serious hazards, therefore the Bereg needs programs dealing with the secondary digital inequality. The way out has to be the elimination of the material gaps (programs ensuring multimedia devices) which affect a small part of the society as well as the elimination of cognitive barriers. The development of digital competences has to be dealt with in a more complex way, investments should not only be made in the informatics infrastructure but in the further professional training of the teachers.

In the era of a digital society, competent professionals are needed who can operate digital devices, whose training can't be barriered by the disadvantaged situation of the subregion they live in. The digital inequalities add to the already existing social inequalities and deepen them further. If the Government lets the digital inequalities deepen in the subregions such as Vásárosnány and similar disadvantaged areas, it takes the chance of catching up from the locals.

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