

Theses of Doctoral (PhD) Dissertation

**DIGITAL INEQUALITY AMONG THE YOUTH
IN DEBRECEN**

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I. The aims of the dissertation, overview of the topic

Due to the social and economic changes in the past few decades a new type of inequality, the digital inequality has evolved.

Some researchers (Dyson, 1997; Bonfadelli, 2002) awaited the compensation of social inequalities, such as education and information inequalities with the spread of the Internet. According to another point of view (Tapscott, 1996; Golding, 1998; Glotz, 1999; Kubicek – Welling, 2000; DiMaggio – Hargittai, 2001; DiMaggio et al., 2004) the regional and other social disparities will enhance the inequalities. The reason for this is that some do not have access to the Internet, which can hinder their social integration.

Later on, the scientists discovered that the digital divide is not a temporary phenomenon which will fade out with the spread of the Internet use. Even though the social inequalities decrease due to the penetration, they still exist by Internet usage (Zillien – Hargittai, 2009). The focus of the investigations varied from inequality of Web access (First-Level Digital Divide) to inequality of Internet usage and aims (Second-Level Digital Divide) (Hargittai – Hsieh, 2013).

Nowadays, the main questions of the analyses are who can use the internet and for what instead of who has access at home. We can find five dimensions for examining the Second-Level Digital Divide (DiMaggio et al., 2004) which are: technical means, use patterns, skill, social support networks, and the autonomy of the use.

The main aim of this dissertation is the investigation of First- and Second-Level Digital Divide among the youth in Debrecen who were born after 1995 (Generation Z) and socialized in the digital world. Therefore, they are experts of these ICT tools and remain online continuously. The dissertation demonstrates the situation of Hungary about Internet penetration. Thereafter, we position the members of the Generation Z or digital natives in a city and establish which dimensions of the Second-Level Digital Divide generate the greatest differences.

The thematic concept and the research methods prove the lateral thinking of the dissertation because the Second-Level Digital Divide is a low-researched issue. In terms of the methods, we use quantitative and qualitative analyses as well.

The sample we used in the research is not suitable for deducting statistical conclusions for the whole society. It only shows trends that play a cardinal role in analyzing soft data obtained from focus groups.

In the empirical part of our research, we observed each dimension of Second-Level Digital Divide, which enabled that the study primarily based on qualitative, focus group interviews, supplemented by quantitative statistical analysis. By analyzing the focus groups, we also explored the deeper differences that we could not measure on a quantitative basis, so we were able to get a deeper insight of the occurrence, differences and more pronounced dimensions of digital inequalities.

II. Overview of methods

Before the empirical analysis, we have reviewed the relevant literature, which is based on the following pillars.

First, we introduced the social changes that led to the modified youth and the emergence of a new generation. We addressed the new life situations in the education system, on the labor market, in leisure activities, and in family socialization, and we also examined the effects of the spread of ICT tools and the Internet.

In the following, we reviewed the generation theories that describe the generation born after 1995 as a homogeneous age cohort. The basis of these theories is that young people are born into the world of computers and the Internet, they all use them and they has a significant impact on their lives (Prensky, 2001a; 2001b; Ságvári, 2008; 2012a; Tari, 2010; 2011; 2012; Jancsák, 2013; McCrindle – Wolfinger, 2014).

After that, we analyzed the social inequalities, the digital divide, and the essential theoretical bases of digital inequalities. We focused on the main stations of the research of this topic and the changes in the concepts. We have noted the differences between First-Level and Second-Level Digital Divides reveal the latter's research dimensions, which provide the basis for our qualitative research.

The dissertation builds on qualitative and quantitative methods to prove the hypotheses. This is important because in relation to this research topic we can mostly found survey-based studies mainly on the dimension of digital inequalities. Nevertheless, the present examination analyzes the five dimensions of Second-Level Digital Inequalities as well beyond the First-Level Digital Inequalities. The thesis observes the cohorts born after 1995 which is described digital natives or generation Z in the literature (Prensky, 2001a, 2001b, Ságvári, 2008, 2013, Tari, 2010, 2012, 2013, Jancsák, 2013).

In the quantitative part of the research, we disclose the differences among the member of the Hungarian generation Z. Later on, in qualitative analyzes, we constrict our target group and focus on those urban students who are most exposed to the effects and consequences of

digitization and individualization. The digital world can be formulated as a new type of consumption quality. We chose urban dwellers because individualization had a great impact on them and they use the Web and ICT tools actively due to their accessibility and the higher-quality of infrastructure.

For our quantitative investigations, firstly, we analyzed the relevant issues of the database Hungarian Youth 2012 chapter Media. We also used the previously published results of the Hungarian Youth 2016. During the survey of the Hungarian Youth 2012, 8000 young people aged 15-29 were questioned using a 60-70-minute questionnaire between September and November 2012. Research can be considered representative of the 15-29-year-old Hungarian population, by region, by type of settlement, by age groups and by gender. It was made with stratified probability sampling. The population of this study was selected from the database of the Hungarian Youth 2012 research. The members of the subsample were the population being born after 1995. Based on the literature, they can be considered as the age cohorts defined as the new generation. We made descriptive statistics and cross-table analyzes with the statistical program package PASW Statistics 18 (hereinafter: SPSS). The size of the subsample was 1368 persons. Our quantitative results are complemented by a second analysis of EUROSTAT and NMHH.

For the statistical analysis, we also used the results of our own questionnaires which were queried before ("questionnaire1") and after ("questionnaire2") making the focus groups. However, it is important to emphasize that, due to the sample item number (n=107), these results are not suitable for deduction of the whole Z-generation population, they only represent trends, but these are important additions to the results of the focus groups soft data. These focus groups are the essence of our research, enabling us to examine the deeper content of all dimensions of First-Level and Second-Level Digital Inequalities. The available macrostatistical data, but even the dimensions of the national representative survey, did not even go into the analysis of these five elements. As a consequence, this is one of the achievements and novelty of the dissertation that shows the digital inequalities in practice.

107 young people being born after 1995 attended the focus groups. 30 focus groups and 1 interview were made. The focus groups included 68 girls and 39 boys. Focus groups were volunteered in institutions where girls' willingness to respond was generally higher. The selection of institutions was made by a random sampling procedure from the public education institutions in Debrecen.

The eldest participants of the focus groups were born in 1995 (15), the youngest in 2006 (1 person), and the average age was 18 years (born in 1998). Focus groups were

recorded in Debrecen, in a religious elementary school, an elite secondary-grammar school, in a vocational school, in several departments of the University, in an After School Program, and children from a group home. The latter (children from the Tanoda and the group home) are referred as "marginalized" in the dissertation, since the members of this group are not related to the same educational institution, and we wanted to illustrate their special situation with this name as well.

During our research, we wanted to answer the question of *whether we find First-Level Digital Inequalities (in access) in a large city (Debrecen)?*

Second, we sought to find out *which factors affect the development of First-Level Digital Inequalities?*

Thirdly, we wanted to investigate *which of the five dimensions of Second-Level Digital Inequalities results in divide between young generation Z in Debrecen?*

Our fourth research question related to *the types we can create based on their answers about Second-Level Digital Inequalities and Internet usage patterns.*

Our fifth research question wanted to look into *the differences we may discover in the Internet usage of the youth which leads to further inequalities.*

III.Enumerating findings in the form of thesis

Our exploratory research has examined the First-Level and Second-Level Digital Inequalities among the members of generation Z in Debrecen.

Hypotheses were divided into two main hypotheses, which were further divided into sub-hypotheses. The first hypothesis relates to First-Level Digital Inequalities, while the second hypothesis relates to Second-Level Digital Inequalities.

According to our first hypothesis, *despite the penetration of the Internet and the ICT tools, we can find access disparities among the youth in Debrecen being born after 1995.* For this, we tested the hypotheses 1/a and 1/b.

According to hypothesis 1/a, *who has lower financial status also has a lower proportion of internet access or tools to use it in their homes.* We used statistical analyzes to test the hypothesis which was partially justified. Financial status has a significant impact on Internet and PC access, but there is no on smartphone owning.

Based on hypothesis 1/b, *access inequality is higher in families where young people's cultural capital is lower.* This hypothesis was supported by the fact that, based on statistical analysis, we have found a significant relationship with cultural capital and smartphone access as well as with a home computer, own computer, and Internet access.

In summary, we can say that First-Level Digital Inequalities have partially disappeared among youth in the sample; almost all of them have a smartphone that is capable of connecting the Internet. In the case of the computers and the Internet, however, inequalities still exist; the possession of these is also influenced by financial status and cultural capital.

According to our hypothesis 2, *there is a great variety of ways of using the Internet among the youth born after 1995.*

Based on hypothesis 2/a (technical means), *people with higher financial status are more satisfied with the quality of the devices they use, the quality and speed of the Internet and their online activities are more diverse.* However, according to the statistical analysis of the questionnaire², there was no significant difference between the material status and the satisfaction with the Internet, as well as the satisfaction with the Internet and the conduct of individual activities or the use for capital enhancing, so this hypothesis was rejected.

Focus group surveys have provided us with the opportunity to explore the quality differences between young people's internet connection. We had a chance to analyze the quality of their computers as well. In the case of the quality of the Internet service, the most frequently reported problems were the following: the service provider provides a slow service, slowness from over-use, infrastructure disadvantages of the city, problems with the location of the residence (e.g. adumbral tower). Three types of problems have been reported with their computers. Some interviewees experience general slowness, others have special problems they cannot solve, while the third group is the one who is looking for a more powerful PC using for computer games.

In this chapter, we have been able to examine the disadvantages of young people who do not have World Wide Web at home. Their responses can be grouped as follows: educational drawback, labor market harm, personal disadvantage and relationship-related difficulty. Thereafter, we examined the expectations about digital competences in the different types of schools. We also showed what kind of tools the young people need. About that, we can say that most of them want to own a laptop. The reason behind this is that almost everybody has a smartphone, but a personal laptop has more prestige. These devices can be used for many activities (such as gaming) that smartphone cannot.

Based on the hypothesis 2/b (use patterns), we suppose that *the low-educated people with low cultural capital from underprivileged schools use the Internet for less activity and mostly for entertainment. So long as those who attend higher status schools use it more in an active way and for capital-enhancing as well.* This hypothesis has been confirmed since the capital-enhancing activities have a significant correlation with cultural capital, cultural

consumption, gender, school type and variables measuring computer skills and web activity used in the thesis.

By evaluating the focus groups, we have outlined the purpose of young people Internet usage (entertainment, school preparation, etc.) and then analyzed the specific contents. Regarding content consumption, we have examined content acquisition and creation separately. In terms of the content acquisition, we looked at what kinds of information young people are most often looking for, and then how they try to increase their capital online in different types of schools. Among the capital-enhancing activities, the differences related to studies and language-practice were investigated. In most ways (13), the university students use the Internet for their studies, followed by high school students (7), while the least types of activity (2) are being conducted online by marginalized students. There were not only quantitative but quality differences as well. University students and high school students visit more sophisticated pages and they consider the resources more critical. In terms of online language practice, high school students are the most active (26) followed by university students (19) and the least types of activity (4) are conducted by vocational schools and marginalized people. Those who attend a higher level school perform multifarious activities and they are more selective about Internet resources, and prefer international sites. The most important tool for online language practice for low-status people is Google Translator.

After that, we analyzed the usage of the social networking sites (hereinafter: SNS) as a highlighted content. We demonstrated the features of the SNS usage, and based on the focus group responses, we created a typology based on the usage style. Young people can be divided into four groups based on their responses: non-users, chatters, observer-informants, and active users. In this chapter, by examining the focus group responses we had a chance to show the disadvantages people may have, who do not register for social networking sites. After, there were investigates what online activity is disruptive for young people.

In the rest of this chapter, we analyzed the active, content-generating online activity of the students, and then we looked at the places where they would not use their smartphones. Among the taboo places, we highlighted the school that was once designated as a place where they did not access the internet, so we revealed the ways of 'illegal' smartphone use in the schools. The reasons for this are based on their responses: boredom, search for information related to the curriculum and cheating.

Based on hypothesis 2/c (skills), *young people with higher cultural capital have better skills in the use of the Internet, they know more ways for studying, acquiring knowledge and language practicing.* Based on the statistical analysis, cultural capital has a significant impact

on individuals' IT knowledge, so hypothesis 2/c has been proven. By processing the questionnaire2, we showed which activities are causing the biggest problems for the students involved in the research (installation of Windows, cutting or editing music and videos, deleting cookies) as well as what most of them are able to do (sharing a post on SNS, sending email with attached file, delete browsing history).

The analysis of focus groups gave us an opportunity to compare the computer science class in the different schools. The school, like cultural and other disadvantages, could play an important role in reducing digital inequalities by using computers and the Internet (Warschauer – Matuchniak, 2010). Young people's answers supported the results of previous research (Becker, 2001; Warschauer – Knobel – Stone, 2004) that higher-status schools have devices with better quality; they focus more on computer science classes and the developing of the digital skills of students.

We have examined what skills they need to improve involved the Internet. High school students are the ones who have listed the most types of activities (10) that they would learn, followed by university students (7) and primary school children (5). Marginalized people were interested in the least amount of activity (2). Higher-level young people have expressed their wish to develop their skills in programming and different programs (such as Corel, SPSS) and would like to learn about website development, web design, and effective online search. The learning needs of the marginalized were mainly concentrated on entertainment, as many reported that they would like to learn about video editing. They have not expressed any desire for knowledge that is useful in life or in the labor market. The reason for this, they do not know people who work in these fields, so they do not recognize the direction in which they can continue their studies or find a job.

In today's accelerated, digitized world, it is important to know how fast you can learn to use new tools. One of the characteristics of the members of generation Z is that, since they are born into the digital world, they use ICT tools skillfully. Based on the focus group responses to the running of new tools, the following groups can be formed: immediately shifters (42), brand-committed (15), hardly dissolved (19), and slowly warm-ups (20). Socioeconomic background variables do not, but gender has an impact on it, girls have a greater difficulty in switching. Although most of them can acquire easier and faster - almost immediately - new tools, opposite their parents, yet we cannot declare that they are all easily integrated into the digital world. This is due to the fact that, for the most part, this fast integration is only made for certain well-known devices, others need it for a long time, and others are only able to do so with external help.

The hypothesis 2/d (social support) states that *low-status young people can find help to resolve their ICT-related problems only after a long period of time so that they have lower chance to develop themselves and their problems remain unsolved many times*. Analyzing their responses to the focus group interviews, we can say that there is no inequality among young people because everyone has the ability to find a person who can help them. The difference is from who they can ask for help. Those with a higher status as a result of their larger social capital can use more semiformal (a competent expert assisting the principle of reciprocity), and those who are younger and attend a lower-status school have less extensive contact networks to find the most suitable person for help, so they are more likely to ask informal and formal assistance. Hypothesis 2/d was therefore rejected.

Analyzing the responses to the focus groups we found out what are the problems they most often need help in connection with the Internet or ICT tools. Confirm the results of the chapter Skills, the most typical difficulty was the reinstallation of the Windows system.

Csepeli (2006) points out that a reverse socialization situation has emerged as a result of the continuous spread of the Internet; the direction of socialization in the world of web and ICT tools has turned. Parents often ask their children for help with ICT tools and the Internet, so there is a reverse knowledge transfer between them. Summing up the results of the focus groups it turns out that most parents (47) seek help with the Internet or ICT tools, followed by grandparents (18), siblings (10) - mostly younger siblings -, friends (6), acquaintances (3), class- or teammates (3), other relatives (2), respondent's partner (1), and grandmother (1). As long as regarding social support they asked for half-way help mostly from their age, in this case, they gave IT-help to the olders and their relatives. Reverse socialization is a phenomenon that exists in most of the younger families of computers and the Internet. Respondents are asked for help with the following issues: general computer or Internet management; advanced knowledge of computer on an advanced level; using special programs; handling specific web pages; smartphone use; lack of language skills.

According to hypothesis 2/e (autonomy), *the internet usage of young people is significantly influenced by the fact that they have their own devices that they can use in an autonomous way*. On the basis of quantitative studies, our hypothesis is partially justified, since people with their own devices have multiple online activities, but their autonomous use has no effect on the number of online activities.

Based on the responses to the focus groups, we examined who and how could affect the Internet usage of young people. Three types of control were differentiated: parental control, sibling control, and self-control.

Three types of parental control can be distinguished by the responses of young people from Debrecen being born after 1995; limiter-punitive, definer-permissive, and permissive-controlling. The most common parent type is the limiter-punitive (39), followed by the definer-permissive (21) and then the permissive-controlling (11). We also looked how the parents try to limit Internet activity. These are the following: scrambling the computer; removing/deactivating the device and cable needed to operate the machine; time limit.

The second type of control is sibling control. There are two main types of agreement between brothers and sisters (rival, good siblings) in the focus groups that can be subdivided into two subcategories. In one type of rival-type relationship, parties are constantly fighting for the use of the computer, while in the other type one sibling (usually the older or the boy) is more violent and does not allow the other party. The first form of good sibling-type relationship does not create a rule system but always decides on the use of the computer on an ad hoc basis. The second type of good sibling relationship is based on rigid rules that are always respected and enforced by the parties.

After the parent and sibling control, the third major control type is the self-control, which gradually increases with age.

In this chapter, we also highlighted the usage consequences of autonomous Internet use. As a result, most people have reported increased, braver, more personal or safer web usage.

Concerning hypothesis 2, we can conclude that the hypothesis is partially justified. Among the five dimensions of Second-Level Digital Inequalities, we found no inequalities between young people in technical means and social support. We have partly found inequalities in autonomy, and we have found significant differences in use patterns of the internet, as well as in the dimension of the skills.

We can conclude that digital inequalities can be found in the examined population, but some of its dimensions appear to vary. First-Level Digital Inequalities (in access) have almost disappeared as the penetration among young people involved in the research is higher than the national average, but financial status and cultural capital have a significant influence on who owns computers and who has Internet in their home. However, we can state that we did not find First-Level Digital Inequalities in smartphones.

The features revealed about Second-Level Digital Inequalities support previous research results (DiMaggio et al., 2004; Hargittai – Hinnant, 2008; Anderson, 2008; Buente – Robbin, 2008; Eynon, 2009; Zillien – Hargittai, 2009; Chou et al. 2009; Hale et al., 2010; Boyd, 2011; Hargittai, 2011), which highlighted the role of differences in Internet usage and

emphasized that socioeconomic status has a significant impact on who uses the Internet and how can profit from it at all.

According to our surveys, although most young people's activities are fundamentally based on entertainment, cultural capital and the type of school also significantly determines whether young people are involved in a capital-enhancing activity. The sharpest differences are found along the type of school, which affects, among other things, the quality of IT education, the pursuit of online capital enhancing activities and the level of IT skills. These factors would be vital to overcoming digital drawbacks and help successful further education, labor market integration, and social mobility.



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List of publications related to the dissertation

Hungarian book chapters (3)

1. **Galán, A.:** Az ifjúsági korszakváltás és a posztadoleszcencia jelensége.
In: Kihívások és válaszok : tanulmányok a szociálpedagógia területéről. Szerk.: Rákó Erzsébet, Soós Zsolt, Debreceni Egyetemi Kiadó, Debrecen, 41-59, 2017. ISBN: 9789633186503
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In: Kisvárosi fiatalok, kisebbségek, új sebezhetőségek: Csatlakozás az Európai Ifjúsági Térséghez 7.0. Szerk.: Jancsák Csaba, Krémer András, Belvedere Meridionale, Szeged, 11-27, 2016. ISBN: 9789638708489
3. **Galán, A.:** Internetezési szokások és internetfüggőség a generációs változások tükrében.
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Metszetek. 4 (1), 65-76, 2015. EISSN: 2063-6415.
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List of other publications

Hungarian scientific articles in Hungarian journals (3)

5. **Galán, A.:** Az internetfüggőség kialakulása és prevalenciája: A hazai és nemzetközi kutatási eredmények összefoglalása.
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In: Nationhood in the Carpathian region : Hungarians and their neighbours - sociological perspectives : joint conference of the Hungarian Sociological Association and the Department of Sociology and Social Work in Hungarian of Babeş-Bolyai University : November 27-29 2014, ... Cluj-Napoca ... : book of abstracts. Ed.: Attila Kund, Hung. Sociological Assoc. ; Cluj-Napoca : Department of Sociology and Social Work in Hungarian of Babeş-Bolyai University, Budapest, 52, 2014. ISBN: 9789638863331

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