FACTA UNIVERSITATIS
Series: **Philosophy, Sociology, Psychology and History** Vol. 22, Nº2, 2023, pp. 107 - 126
https://doi.org/10.22190/FUPSPH2302107M

Original Scientific Paper

DIGITAL TECHNOLOGIES, SOCIAL DISPARITIES AND EDUCATIONAL INEQUALITIES: THE CASE OF ELECTRONIC DIARIES IN BULGARIAN SECONDARY SCHOOLS

UDC 373.5.061:004(497.2)

Raya Mihaylova

Sofia University, Faculty of Philosophy, Department of Sociology, Bulgaria

Abstract. *The paper focuses on inequalities in access to digital technologies and their influence on education (electronic diaries in particular) across secondary schools in Bulgaria. It tries to answer the following research question: does the impact of digital technologies on access to the educational process depend on the existence of social inequalities and horizontal differences between and within schools? The theoretical framework is based on Bruno Latour's Actor-network theory, Bourdieu's capital theory, as well the concept of technical capital. The research methodology includes case studies of three different types of schools with qualitative methods of data collection: interviews and focus groups with key stakeholders such as principals, students, teachers, and parents. According to the different social actors in the educational process, the usage of electronic diaries makes it significantly easier to access, store and distribute information, but not for all groups of children and their parents. The analysis of three different types of schools reveals the presence of significant differentiation and inequalities in the Bulgarian education system. The results show that the theories of Bourdieu and Latour are suitable for analysis of the Bulgarian education system. Based on the obtained results it is concluded that a comprehensive reform in the education system requires not only educational innovations but also adequate and long-term changes in all fields of society.*

Key words: *electronic diary, education, technologies, social inequalities, access to educational processes.*

1. INTRODUCTION

Children nowadays are born into a world in which technologies are intrinsically linked with their everyday lives and they use different devices connected to the Internet ever since they learn how to talk and read. The so-called digital generation includes

Received June 5, 2023 / Accepted October 25, 2023
Corresponding author: Raya Mihaylova
Sofia University, Faculty of Philosophy, 115 Tsar Osvoboditel Blvd. 1504 Sofia, Bulgaria
E-mail: rayamichaylova@abv.bg

millions of people born in a multi-technological world, using various devices from childhood, with constant Internet connectivity as a major part of their conscious lives.

At the same time, the most important area for children and young people's development as individuals is the education system, adapting to the digital world. Education is a key area in which digital technologies, wireless Internet, and all different kinds of information and communication technologies (ICTs) have an influence on children's lives. Many schools recognise the process of change due to digitalisation and the impact it has on students' behaviour. More and more educational institutions are starting to use new digital methods of teaching oriented towards finding the most effective way in which students want to study. ICTs have the potential to change the way of teaching in the coming years and many different electronic platforms are used in classrooms across the world. ICTs can no longer be considered some kind of desired "addition" to the education process. Instead, they should be seen as an essential part of it (Philip 2007).

One of the educational technologies integrated in the Bulgarian education system are electronic diaries. They are integrated into a platform for marking grades, absences, and other student data. They have a communication function as well and some of them could also serve as a platform for distance learning. Electronic diaries replace the paper versions – the personal ones for students, as well as for the whole class.

Using electronic diaries at schools requires having devices and an Internet connection, as well as certain competences and experience with using digital technologies, which allow parents and students to be fully engaged in the education process. According to the definition of the Organisation for Economic Cooperation and Development (2001: 5), the digital divide is the "gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities".

More current studies indicate that there is a general relationship between offline resources and the digital divide and that "the internet remains more beneficial for those with higher social status, not in terms of how extensively they use the technology but in what they achieve as a result of this use. When information and services are offered online, the number of potential outcomes the internet has to offer increases. If individuals with higher social status are taking greater offline advantage from digital engagement than their lower status counterparts, existing offline inequalities could potentially be acerbated" (Van Deursen et al. 2015: 30). Another analysis by the same author finds that the focus of the policies related to the digital divide has shifted to skills and usage access, but at the same time motivational and material access should remain a relevant focus since they are necessary through the entire process of Internet use (Van Deursen et al. 2015). Taking into account these considerations, we accept that the digital divide refers to inequalities not only in access to ICT, but also in their use (possession of skills) and the outcomes (benefits) from their use.

Inequalities in socio-economic status that generally affect student achievement may be further intensified if the available family resources are insufficient to ensure access to education and success in it. In such an environment, the differences in relation to the level of competence for the use of technology and in relation to the availability and accessibility of resources stand out, regardless of whether it is a case of remote or face-to-face learning. This was particularly evident during the COVID-19 pandemic. According to the findings of Hristova et al. (2020), in a significant share of schools in Bulgaria (14%) between 1 and 16% of teachers do not have access to an electronic device at home.

Also, “in 3% of schools there isn’t a single teacher who has Internet at home and ¾ of these schools are in villages” (ibid: 45). However, it is important to keep in mind that the necessary resources for successful participation in the education process refer not only to technical ones (such as broadband Internet access or the number of available devices) but also to the family's motivation and attitudes, parents' goals for their children, digital skills and literacy, etc. These conditions for using e-diaries lead to several challenges for some families and may result in social inequalities among students, which are further reflected in educational inequalities at school. In that context, the paper focuses on the relationship between digital technologies, social disparities, and educational inequalities**.** It is worth studying in-depth how the role of digital technologies and, more specifically, of electronic diaries in the educational process depends on social inequalities and differences between and within schools.

2. THEORETICAL FRAMEWORK

Electronic diaries and their role in education could be understood through the Actor-network theory (ANT) of Bruno Latour. The theory focuses on the ways, in which human and nonhuman elements are intertwined into objects. ANT follows the specific links and translations which connect all these objects, processes, concepts, and institutions, as well as the movements of these objects that assemble and arrange the everyday practices in certain ways. Most studies, when using ANT, perceive all things as actions which result from continuously produced networks of relationships. According to ANT, there are no “social explanations”, which we can use to explain every phenomenon (similarly to laws in natural sciences). The focus on relationships which makes up the network, and not the network in its entirety, allows for a different type of understanding of the process of creating this network and the variability of its connecting elements (Latour, Akrich 1992; Латур 2007).

Latour’s theory introduces key concepts which allow understanding the role of innovations in education and the creation of new networks between the actors. The concept of a *network* is the most important in ANT (found in the name of the theory itself). In Latour’s view, networks are particularly suitable for describing the connection between actors in a community or society. Instead of thinking in terms of several dimensions, spheres or other objects, the network makes us think about the nodes, which have as many dimensions as there are connections between them (Latour 1996).

Other key concepts in ANT are *inscription* and *translation*. Inscription refers to the creation of technical objects, which guarantee the protection of the interests of the actors. An example is the documentation related to a certain software or regulation in view of meeting the organisation goals (Latour, Akrich 1992: 259). Inscriptions determine who and how takes part in the network and what their role is. In order to stabilize the network and establish social order, actors constantly participate in negotiating and connecting certain interests. At the same time, translation is a process of creating actor-networks. It is the term used by Latour to describe how humans and nonhumans connect, act together, and form a network through the connections they create. In this sense, the change in the network could come from translations (Callon, Rip, Law 1986).

In addition, the concepts *intermediary* and *mediator* should also be explored. The intermediary is a substitute. This role could be fulfilled by anyone in the same way (Callon

1991 in Sayes 2014). It is not transformed when transmitting meaning, so the input data is the same as the output data. The mediator, on the other hand, adds something to interactions, so they constantly get changed. For the aims of the study, the focus is on the concept of mediators and on the extent to which electronic diaries could be understood as such. This means that the ICTs are not passive intermediaries in the educational process, but active participants in it instead (ibid).

ICTs are nonhumans according to Latour's theory. Nonhumans could be understood as mediators. Nonhuman social actors are not replacements for human actors or fully used and managed by them, in fact they have an active force affecting social relationships, so they are not passive intermediaries.

Last but not least, the concepts of *assemblag*e and *portfolio* are also important. Assemblages are the aggregates of multiple associations, insofar as associations, in turn, are the connections between actors in the network constituting the "social" (Латур 2007). In classrooms, standard-based portfolio creation practices become networks that translate different dynamics of teaching, learning, and assessment (Fenwick & Edwards 2010: 96). In the present analysis, electronic diaries are understood in a given aspect as the students' electronic portfolio.

Latour's approach is applicable for conducting research in the field of sociology of education and more specifically when it comes to connections between educational technologies, students, teachers, parents, and the other social actors who are stakeholders in the field of education (Tummons 2014). Tummons (2014) conducted an ethnographic study of a curriculum for teacher training in a network of colleges in the UK. Using ANT and basing the research approach on the principle of symmetry between humans and non-humans, it is demonstrated how the educational process could be studied only if both human and non-human actors in the network are taken into account. In Tummons' view, it is of key importance to understand that students are actors in a network, which includes their relationships with their peers, teachers, but also with technological and non-technological devices in the classroom and school.

ANT has a heuristic potential for deepening the understanding and making sense of important educational processes and problems. However, the relationship between the introduction of digital technologies in education, the existing social and educational inequalities and the (re)production of social and educational inequalities remains insufficiently analysed. This gives reason to study the networks that "humans" (students, teachers, parents) and "non-humans" (digital technologies and related artefacts) construct, how they are influenced by existing social inequalities and how they impact them.

Apart from ANT, as a part of the theoretical overview it is necessary to consider the understanding of social inequalities, as they are a key aspect of the sociological problem in the article.

One of the most prominent theories that is essential for understanding the nature of social inequalities and their preconditions in social life was proposed by Pierre Bourdieu[1]. Bourdieu's theoretical framework includes a definition of the concept of capital and a distinction of its forms. "Capital is accumulated labour (in its materialized form or its "incorporated," embodied form) which, when appropriated on a private, i.e., exclusive, basis by agents or groups of agents, enables them to appropriate social energy in the form

[1] It should be noted that Bourdieu's theory of social capital has been used in numerous studies, which are outside of the scope of the analysis of this article.

of reified or living labour." (Bourdieu 1986 241). Taking into account the field in which capital functions, as well as the cost of the transformations which are the preconditions for its efficacy, Bourdieu argues that "capital can present itself in three fundamental guises: as economic capital, which is immediately and directly convertible into money and may be institutionalized in the form of property rights; as cultural capital, which is convertible, in certain conditions, into economic capital and may be institutionalized in the form of educational qualifications; and as social capital, made up of social obligations ("connections"), which is convertible, in certain conditions, into economic capital and may be institutionalized in the form of a title of nobility" (Bourdieu 1986: 242). Economic capital is related to financial resources and could vary hierarchically and be quantified through the income of a member of the household and the different sources of income, among which salary is the main one. Cultural capital is related to the attitudes and habits acquired in the process of socialisation, as well as to the owned cultural items. Social capital is related to membership in different organisations, networks, and structures created by the social agents, in which they participate directly (Bourdieu 1986). It actually represents the set of informal and formal "connections" that people make, the relationships they enter into, within the networks which they are a part of.

It is important to emphasise that in Bourdieu's view "capital is a social relation, i.e., an energy which only exists and only produces its effects in the field in which it is produced and reproduced, so each of the properties attached to class is given its value and efficacy by the specific laws of each field" (Bourdieu 1984: 113). Therefore, the relative weight and significance of the different forms of capital (and whether they would actually function as capital for social actors) varies between different fields, so educational capital could be most important in one area, economic capital in another and so on. Bourdieu goes further and highlights that the specific logic of the field determines which properties are valid and active in a given game "and which, in the relationship with this field, function as specific capital and, consequently, as a factor explaining practices. This means, concretely, that the social rank and specific power which agents are assigned in a particular field depend firstly on the specific capital they can mobilize, whatever their additional wealth in other types of capital" (ibid). Thus, social games are played, and the positions of social agents are determined, depending on the possession of a different type of capital or power resource. On one hand, the agents' roles may be predetermined by these positions and possession of capital, but on the other hand, they depend on how these positions are interpreted. Education is a specific field that is characterised by its own history and "rules of the game".

In order to analyse the relationship between digital technologies and educational inequalities, it is necessary to highlight another key type of capital that links digital technologies to other fields, namely technical capital (Zhang 2010). It is defined as a structural relationship between technologies and other actors. These "relations" are structural because they exist "independent of the consciousness and will of agents" and are constitutive of what Bourdieu (1989: 14) calls the "fields" that frame the practices of those same actors. In other words, whether human or institutional actors recognize these connections or not, the relations nevertheless guide and constrain the actors who are included in the field" (Zhang 2010: 1021-1022). Zhang outlines that technologies are not regarded as supportive tools that can be used in social interactions. In contrast, her understanding of technical capital "suggests that technologies, along with financial resources, educational credentials, interpersonal

connections and symbolic reputation, can define actors through the structural connections between them" (Zhang 2010: 2022).

In relation to ANT, technologies are considered actors, and technical capital refers to the connections to technologies that make up the social order together with other connections (e.g. money, educational institutions, etc.). The accumulation of technical capital is understood as establishing and maintaining connections with technology. Some connections are more ephemeral than others, such as thoughts written on paper versus those saved in a Microsoft Word file. The convertibility of technical capital is reflected in the relationship between technology and other actors in a similar way to financial resources (ibid.). One type of non-human actor in the education system are the electronic diaries in Bulgarian schools.

3. The Digital Divide and Electronic Diaries in Bulgarian Schools

Bulgarian students, in general, use digital devices from a relatively early age. Data from PISA 2018 shows that around 36% of 15-16-year-old students used digital devices for the first time before the age of 7. They use digital devices and Internet primarily for entertainment. Online activities related to student learning and education are relatively less prevalent (Hristova et al. 2020).

There have been attempts to adapt to the transformations in the technological world. The introduction of information technologies in the classroom happened in the period 2005-2008 with the implementation of the National Strategy for the Introduction of Information and Communication Technologies in Bulgarian schools (Ministry of Education and Science 2005). In 2005, the National Strategy for the Introduction of ICT in Bulgarian Schools (2005-2007) was created, followed by other strategies in the following years. In 2015, as part of the national program "ICT in school", a pilot project was implemented, including 40 schools, which received a budget for laptops and tablets, projectors, etc.

In spite of these efforts, data cited in the report "Distance Education: Readiness of Schools and Families for Online Learning" (Hristova et al. 2020) shows that, in comparative terms, Bulgaria has the most unfavourable ratio between the number of students and computers at school. On average in the EU, one computer is used by 7 students in lower secondary school (ISCED 2) and 8 students in upper secondary school (ISCED 3). In Bulgaria, these indicators are respectively 14 students in lower secondary school and 19 students in high school. Only 36% of high school students study in schools where the necessary number and quality of digital devices and good Internet connectivity are provided.

The report on the consequences of distance education in the 2020/2021 school year made by the Ministry of Education and Science analyses the access of vulnerable groups to various aspects of the educational process during distance learning. Additional requirements for a suitable environment and means for learning and teaching from home, for additional support and the involvement of parents, for self-regulation skills and active participation in the learning process despite the lack of in-person social contacts create new challenges especially for children and students from the vulnerable groups: they come from low-educated and poor families, some live in villages, do not speak Bulgarian at home or have special educational needs (around 20-25% of all children) (Ministry of Education and Science 2021: 2). It can be seen that at least several factors leading to challenges for vulnerable groups are indicated – the home environment, way of learning, level of involvement of parents and students, etc. Also, data from the MoES study of the

consequences of ORES 2020/2021 shows that in 43.5% of schools in large cities, all children have access to the Internet, with the percentage falling to 12.5% in villages (Ministry of Education and Science 2021: 26).

It is also important to point out that according to an analysis of the Institute for Research in Education, cited in the report of the Ministry of Education and Science, there is a statistically significant relationship between the socio-economic status of parents and the regular participation of students in distance learning. Significant differences were highlighted - 29% of children of parents with less than a primary education and about 55% of those of parents with a primary education participated in distance learning classes every school day (Ministry of Education and Science 2021: 26). This shows that there is a clear relationship between parents' attitudes towards education and the overall family environment and the extent of student participation in the educational process, which in turn could affect student outcomes.

Electronic diaries have been used in the Bulgarian educational system since 2017. The most used platform is "Shkolo", although there are already many other options of electronic diaries and companies providing them. In 2010, the idea of an electronic diary was born to replace the paper version and ease documentation at school. Two friends, high school graduates, created an initial version of an electronic diary, and subsequently, together with two others, in 2016 founded a startup and the software platform "Shkolo".

Initially, the use of electronic diaries was set in the legal framework in Bulgaria in 2016, in Ordinance 8 of the Ministry of Education and Culture, according to which a school can fully switch to keeping an electronic diary if the details in its electronic sections are compatible with the National Electronic Information System for preschool and school education. The budget for the implementation of electronic diaries in the following academic years is BGN 2 million. All schools that submitted a request through the MES platform that they will use electronic diaries in 2019/2020 received funds according to their number of students.

Ahead of the transition from face-to-face to distance learning due to the ongoing COVID-19 pandemic, schools were encouraged to varying degrees to move to documentation in a virtual environment and 73% of them had an electronic diary in 2019 (Hristova et al. 2020). In the 2020/2021 academic year, 96% of schools were solely using an electronic diary (Hristova et al. 2021) and in 2022/2023 all of the schools were obliged to transfer to the electronic version.

Taking into account the theoretical considerations and the process of introduction of digital technologies, and more concretely – of electronic diaries – in Bulgarian secondary schools, the paper tries to answer the following research question: does the impact of digital technologies on access to the educational process depend on the presence of social inequalities and horizontal differences between and within schools?

4. METHODOLOGY

In order to trace the process of introducing electronic diaries in Bulgarian education and the aspects of their current use and to analyse in-depth the opinions of the various interested parties on the subject, three schools of different types were visited. A categorisation was made based on the following indicators: stage of education (secondary school/high school), geographical location (capital city, large city, village), average success rate in the state matriculation exams in Bulgarian language and mathematics for the academic year 2019

/2020, use of digital technologies and electronic diaries in the school, the socio-economic status of the population in the settlement and the region. In this way, the following types of schools were selected:

1. "Advanced School" – located in the capital, with a high average grade from the matriculation exams, using an electronic diary, with a high socio-economic status of the population;

2. "Medium-type School" – located in a large city in the country, with an average level of success compared to other high schools, using an electronic diary and some digital technologies, with an average or mixed socio-economic status of the population in the region and the settlement and

3. "Lagging behind School" – located in a small settlement, with a low success rate from the matriculation exams, using an electronic diary and some technologies, with a low socio-economic status of the population in the village, with marginalized groups.

The following methods were used to achieve the research goals and objectives: in-depth interviews and focus groups with principals, teachers, parents, and students, interested parties regarding electronic diaries, as well as representatives of companies that created and supported electronic diaries for the majority of schools in the country. Each of the three defined cases (types of schools) was analyzed in detail via a case study approach through the different data collection methods used in order to make somewhat valid conclusions for similar types of schools based on the mentioned categories.

The scope of the study includes three interviews with high school principals, six interviews with teachers and one focus group with teachers; four focus groups with students from grades 9, 10, and 11 (with a total of 35 students), as well as one focus group with parents of such students and one interview with a parent. Grades 9-11 were chosen in order for the students to have sufficient experience in the education system and with the use of information and communication technologies, but at the same time not to be in the last years of their studies at the relevant education stage, which is associated with various challenges. An interview was also conducted with a representative of a company that created and maintains electronic diaries in Bulgarian schools. The interviews and focus groups were conducted using a semi-structured in-depth interview guide.

To process the qualitative data, an audio recording of the interviews was made to create a detailed transcript and coding. For this purpose, a coding tree (Glaser and Strauss 1967) was developed with the main codes according to the semi-structured questionnaire, supplemented with specific topics from the interviews through the method of induction (starting from the general topics and creating codes for the more specific aspects). In other words, a summary coding tree of the most general themes was first created and subsequently enriched with other major and "sub-codes" from the interviews and focus groups. Different coding trees served to analyse the different target groups of the study such as teachers, students, principals, parents, and other respondents. NVivo software was used for coding, content and thematic analysis, visualization, and data processing.

5. RESULTS

5.1. Case № 1 Limited capital, limited access to digital technologies and reproduction of social inequalities

The first studied case is a "lagging behind school" in one of the largest villages in North-West Bulgaria. The school has a low average success rate in the matriculation exams compared to other schools in the country. According to the last census of 2021, the population of the village is about 2,500 people, and its main livelihood is agriculture. In the last 30 years, the living standard of the people in the village has decreased due to the closure of a factory, and agricultural production has also decreased. As a result, the unemployment rate in the region is high. In addition, according to data from the National Statistical Institute of Bulgaria (NSI), the share of households with Internet access in the Northwest region is 83% (which is 4% less than the total for the country). At the same time, 74% of the population in the region regularly use the Internet every day or at least once a week (79% in total for the country) while 16% have never used Internet (13% for the whole country). This shows that the Internet is used less or inaccessible in the region as opposed to Bulgaria as a whole, which corresponds with the low living standard, high unemployment rate and overall socio-economic situation in the region.

The data from the conducted interview with the school director complements the information about the socio-economic situation, which determines the prospects for students graduating in the region. Five years ago, the vocational high school and the primary school merged and as a result the school became secondary with vocational classes. It is also important to emphasize that the school has been using an electronic diary since 2019 (the first year it was used in a hybrid form along with a paper one).

According to the principal, this is a large school with many students, some of whom, however, go abroad with their parents, which is why there is a serious turnover. This departure of students is related to the search for a livelihood for their families in various factories, and the principal also relates it in his narrative to the concentration of vulnerable groups in the region.

From what the principal shared, the ways in which the students and their families deal with poverty stand out, for example from donations or the school budget by purchasing the necessary resources not only in connection with the education process, but also as a matter of necessity. In relation to the socio-economic situation of the families, there are other shared challenges. With regard to the admission to the 8th grade, since the school serves several neighbouring villages, it is rather difficult to secure the necessary numbers for the admission of students who want to attend it, due to the fact that some of them prefer to study in the village rather than in the nearby city, where the standard of living is unbearable for their families and it is difficult to move around. This leads to the fact that there are too many students and not enough places for them in the 8th grade. It can be seen that what is shared by the principal is related to the families' daily lives and dealing with the basic needs of their children, with the principal finding ways to solve the problems, such as hiring a car and a driver to provide transportation for students whose families have to travel far and do not have the necessary resources to transport their children to school.

At the same time, in the last 3 years, there were no students dropping out, but there were those at risk of dropping out, due to different factors: the whole family going abroad, low grades or other cases such as family problems – a student shared directly with the principal that she would be taking care of her father because he was sick, so she

had no way to continue her education. Also, there are early marriages in the region, which affect the dropout of students and their desire to start learning independently.

The described socio-economic picture of the school gives reason to assume that social inequalities have an impact on all aspects of the education process. The forced distance learning due to the pandemic created an additional need to use technology for participation in the learning process. Of key importance is how this affects the access of students and their families to the necessary educational resources, and from there to education in general, in schools such as the one described, where students lack high levels of economic, social, and cultural capital and live in poverty. The availability of key digital skills needed by students and parents to use e-resources, namely the availability of technical capital, is essential for their positioning in the field of education and participation in the teaching and learning process.

The introduction of a new non-human actor such as the electronic diary changes the relationships among the social agents and creates barriers and limitations to their involvement in the actor-network. The change was difficult for the teachers and parents to accept. With the old paper type of communication, parents had access to their child's grades long after they were given, and students actually were also informed if and when their parents would get all the information. At the same time, however, the habit of having information available on paper rather than in electronic form, which requires logging into a profile with a username and password and technical capital in order to use it effectively, appears to be an obstacle for the creation of new connections between actors in the process of the introduction of an electronic diary. This is expressed in the teachers' dissatisfaction with electronic diaries when they were first introduced and in the low activity of the parents regarding access to the electronic diary which prevents their inclusion in the new network.

> *"They were not mandatory, and the colleagues worked for one year, so they were dissatisfied from the beginning, but they also worked on paper, and they had to write in 2 places, but I said that it will be easier for them from next year, if we enter only electronically".* (Interview with the school principal)

The limited economic and cultural capital that result in limited access to resources such as relevant software, a device in good working order through which the diary can be accessed (smartphone, computer, tablet, etc.), a good connection to the Internet, network coverage, and also the skills to use the devices stand out as obstacles to the inclusion of vulnerable groups of children and their parents in an actor-network with electronic diaries.

Although one way to address the challenges for families without sufficient technical resources was to provide devices, the data shows that some families refuse to use them in order not to damage them because they are "too new and of high quality" and they might need to pay if there is any damage (and these families do not have sufficient economic capital).

According to the teachers, the principal, the students and parents themselves, the lack of resources (social, cultural, and digital capital) and skills is of particular importance in their school. Electronic diaries seem to have been introduced in an environment that lacked the basic readiness for this change to occur in an effective way. As a result, some families are practically excluded from the education process and can no longer follow the necessary information that they previously saw on paper. It is evident that e-diaries require different types of capital to be used and for parents to be a part of the education process.

5.2. Case № 2 Emerging capital and opportunity to use digital technologies and to overcome social inequalities

The second analysed case is of the so-called, according to the categorization above, "medium-type" school - a vocational high school in electrical engineering and electronics in a large city in South-East Bulgaria. According to the last census, the population of the city numbered 210,720 inhabitants, and the city is one of the important economic and industrial centres in Bulgaria. In 2021, the employment rate in the region was 64% (it is 68% in the country on average), while the unemployment one was 6% (5% in the country on average). Investment and business activity in the district were among the highest in the country in 2020. Demographic indicators put the district in the top three (Slavova et al. 2022). In addition, according to data from the NSI, the share of households with Internet access in the Southeast region is 85% (which is 2% less than the total for the country). At the same time, 74% of the population in the region regularly use the Internet – every day or at least once a week (79% in total for the country) and 16% have never used the Internet (13% for the whole country) (NSI 2022). Obviously, the Internet is less used or accessible in the region than in Bulgaria as a whole, but at the same time the share of households with Internet access is a little bit higher than in the first analysed case in the Northwest region. This shows that the region is developing in general in view of the socio-economic situation, but is still at a lower position in comparison with the rest of the regions and the country when it comes to Internet access and usage.

The data from the conducted interview with the principal of the school and from the information placed on the school website completes the picture of the socio-economic situation. The main area of the students' interest is precisely hardware and software solutions, which indicates their interest in the field of IT. The school participates in numerous projects related to digitization and innovation. It is also important to emphasize that the school has been using the electronic diary "Admin plus" since 2018 (the first academic year it was used in hybrid form with the paper version).

The access of students and their families to the necessary resources is a key condition for participation in the education process and familiarity with all the necessary information contained in the electronic diary. In comparison with the previous school, there are also families for whom this access is difficult or there are differences in their skills and opportunities to obtain and understand the necessary information from the diary, but they are lower in number, given the socio-economic situation of the families in the region and the school. Most of the participants in the study shared that they are participating and managing the digital tools but at the same time they are aware that many families face serious challenges in that process.

> *"Do you or your classmates have such a problem that there are fewer devices at home, the Internet is not good, that type of thing? - Well, yes. They provide us from the school, in the sense... Literally, there are none for my class, but for the others, yes." "And do all students use the electronic diary, was there someone who has a hard time, can't register or has no device to access the diary, are there such problems? – For some students I think there are, yes, because they are a little more…, I don't know how to say it... For some students it is more difficult to deal with technologies."* (Focus group with the students)

As in the first case, the school is looking for ways to deal with the lack of access of some families to the necessary resources so that they become involved in the education

process and the network of actors. This happens through donations from the school budget for families needing to pay for the Internet or devices.

> *"Some do not have access to the Internet, families do not have enough devices... Last year, almost everyone made a donation... - We gave them Internet. - We gave 10% of the salary and bought laptops for the children."* (Dual interview with the principal and a teacher)

Also, the availability of access to resources is checked by the school, so that the teachers can monitor whether all students and their families, despite the limited economic (and other kind of) capital of some of them, are included effectively in the network created within the educational process.

> *"Yes, we have even made a declaration from the class teachers to sign that every student has access. Sometimes they don't know their passwords and forget them. Students can't log in, everyone is reimbursed, there are lists of students we might need to give laptops to. So, we are ready, but we want to increase this over time, if possible."* (Interview with the principal and a teacher)

In the parents' opinion, they do not have information about the socio-economic status of the other families whose children study at the vocational high school. Only one of them expresses the opinion that there are probably students with a different socio-economic status. Some of them share that their children have everything they need in terms of technology at home. They also do not believe that the introduction of the electronic diary is the way to overcome social inequalities.

5.3. Case № 3 Possession of capital and ensured access to digital technologies and education

The third studied case is of the so-called "advanced school" according to the categorization introduced in the methodology – an elite language high school with a high average success rate in the matriculation exams compared to other secondary schools in the country. It is located in a large city, key for the country's economy in the Southwest region of the country. The city has a high gross domestic product per capita. The labour market is well developed and there is extensive investment activity. Therefore, the level of unemployment in the municipality is between 3 to 4 times lower than the average in the country (Institute of Market Economy 2022).

Local taxes are the highest in the country. The city is located in the region with the most favourable demographic picture, a leader in the field of education with a high enrolment ratio, a low share of out-of-school children, good student performance and a large number of students (Institute for Market Economy 2022). In addition, according to data from the NSI, the share of households with Internet access in the Southwest region is 91% (which is 3% more than the total for the country). At the same time, 85% of the population in the region regularly use the Internet every day or at least once a week (79% in total for the country) and 8% have never used the Internet (13% for the whole country) (NSI 2022). This shows that the Internet is used more and accessible in the region than in Bulgaria as a whole, with quite higher shares than for the other analysed regions above. This corresponds with the favourable socio-economic situation described.

The high school in the third case is one of the leading profiled high schools in the country, with consistently high results in Bulgarian language and literature, second foreign language,

and other general education subjects. The high school cooperates with national and international non-governmental organizations and educational centres, former students, the parent community. Modern approaches in management and training are used: cloud technologies for managing administrative activities and training through the Office 365 platform, working entirely with an electronic diary, participation in international projects under the "Erasmus+" program, etc. The school has been using an electronic diary since 2017.

Given that the high school in this case is elite, the families of the students have enough capital, and the access to electronic resources, the Internet, etc. is ensured, the attitudes of the human actors in the network have become more important than access. This was shared by various respondents such as the principal, teachers, and students.

> *"They are used by everyone, with us there are no such differences... The differences are mainly due to the family environment, if there are any." "They had what was needed by the Ministry of Education and Science, they supplied the whole country. Access is not the main problem."* (Interview with the school principal)

> *"We do not force them to register, but all students and parents use them...whether the student and the parent will look at the diary depends on whether they have registered, whether they have logged in, we cannot force them. There are those who at the end of the 8th grade realize that it has to happen, but they are not many...If they want, they will do it, the important thing is for the students to understand that it is for their own good, to follow what is happening."* (Interview with a teacher)

> *"There are students who don't have their own accounts and use their parents' accounts, but I don't think there is anyone who doesn't use it at all."* (Focus group with the students)

This shows that families have the necessary capital so that their children can effectively participate in the education process. Students say that access to the diary is easier than before when paper versions were used. Also, the journal has been integrated particularly well into the education process, as students report that when there are any problems and there is no access to the journal, this creates panic, since they are used to being able to access and use it all the time.

> *"The same thing with grades, it's much easier to access, they don't have to be collected every month and written down, there's a lot less mistakes, a lot easier to fix."* (Focus group with the students)

> *"I want to say that it is generally a good thing and a path to progress. The platform we use is very good. But I think it's not simplified enough and it's quite complicated. It has also stopped working many times, which leads to great panic in both us and the teachers. It's happened to us I don't know exactly how many times, but more than 3-4 and it's pretty scary for us and for the teachers, we're all wondering what to do, what's going on, etc."* (Focus group with the students)

In summary, it can be said that in the third case, access to the necessary resources for students is ensured, as their families have sufficient and different types of resources. In some cases, the families' attitudes are crucial, and the electronic diary is well integrated in the education process. The reasons why some schools starting to use an e-diary later than others (when the study was conducted the e-diaries were not yet mandatory for all schools) were highlighted by the representative of a company providing e-diaries who described

them as lack of technical capital, insufficient skills of older teachers in using technology, as well as limited access to resources such as the Internet and even electricity in certain localities. This means that socially and materially deprived areas have numerous limitations to equal access to educational resources compared to developed ones.

5.4. Socio-economic factors affecting access, use, and benefits from electronic diaries

Table 1 presents the different socio-economic and demographic factors affecting access to digital technologies (electronic diaries), their use, and the benefits from their use, and it can be seen how inequalities are exacerbated within and between schools.

Table 1 Socio-economic factors affecting access, use, and benefits from digital technologies (electronic diaries) and educational inequalities

Socio-economic and demographic factors	Case № 1	Case № 2	Case № 3
Educational status of the parents	Most of the parents have a low level of education, therefore they prefer to use a paper version of diaries and they do not always have the necessary skills to use the electronic diary due to a lack of technical literacy.	Some of the parents have a lower level of education and digital skills in order to use the electronic diary. Therefore, they cannot register onto the platform or know how to log into the e-diary once registered.	All or most of the parents are of high educational status, therefore their children also study in one of the elite high schools in the country. The principal can think of a case of a vulnerable family only from the other primary school using the same building.
Economic situation of the parents	Students and their families have a low socio-economic status and low level of income (about 96% of the students are from vulnerable groups according to the principal). The school often buys basic necessities for them like shoes, bags, etc. Due to this, they often cannot afford to have the necessary devices to use an e-diary, Internet connection or even electricity.	Some of the families (a small percentage from the school, for instance a teacher shares there is only one such parent in her class) do not have access to the Internet or enough devices due to their low level of economic status. The school deals with that through donating devices to those vulnerable families like laptops and tablets or Internet prepaid cards.	All of the parents have enough resources and mostly are of high socio-economic status. The differences, if such even exist, could be due to attitudes in the family environment according to what is shared by the principal.

Age of the student	Age is an influencing factor since older students are independent when using the electronic diary and check the necessary information themselves and their parents are not so involved in the process. This is also mostly due to lack of interest on behalf of the parents and low value of education in their lives, which is often transferred to students as well.	Age does not seem to be an influencing factor in this case, perhaps due to particularities of the school or the different platform that is used in comparison with the other two cases, using the same type of diary.	Age is an influencing factor since it is expected from children to be independent and responsible and track the information about school themselves when they are older. This is, however, due to a manner of upbringing of children and not lack of interest on behalf of the parents, as in the first case.
Location, place of living of the family	The place of living of the families is often in a remote village, not the big regional city, so they sometimes cannot get to school, since public transport is lacking, and they do not have their own car. There is a school bus, but it often also does not function. Sometimes there is no Internet connectivity or electricity also due to the location or type of house the vulnerable parents and their children live in.	The parents with low socioeconomic status are often the same ones living in remote villages, where there are similar challenges to their participation in the education process as in the first case. However, the principal shares that sometimes these parents have positive attitudes and want to be informed and access the diary.	The parents' place of living is not commented as a barrier or influencing factors, since almost all of them live in the capital.
Ethnic minorities	The traditions and way of living of the (predominantly Roma) community, which is an ethnic minority in the country influences students' lives, decisions and degree of participation in the educational process. Some of them transfer to home schooling to get married, travel abroad with their families to take part in agricultural activities, take care of younger siblings or their parents due to illness. In their cases, transferring to home schooling practically means they stop their education.	There is no concrete data about whether the vulnerable groups are from a certain ethnic minority.	No parents and children from ethnic minorities have been identified.

6. Discussion and Conclusions

The three analysed cases show the presence of significant differentiations in Bulgarian society and inequalities in the Bulgarian education system. The analysis and the results demonstrate that the theory of Bourdieu on the types of capital is particularly suitable and applicable for studying the Bulgarian education system. In turn, the ANT of Bruno Latour allows to regard new technologies (and electronic diaries) as new actors in education and to understand how these nonhuman actors are intertwined with human ones and if and when they build a new network. A potential limitation that should be noted here is that the limited empirical data did not allow to use the whole array of concepts in ANT. In order to fully reveal the heuristic potential of Latour's basic concepts, it is necessary to carry out a long-term study, which follows the creation of networks and relationships between actors in time while the study at hand captured a specific moment.

The analysis of the three cases allows us to positively answer our research question. More concretely, it reveals that the impact of digital technologies on access to educational process depends on the existing social inequalities and horizontal differences between and within schools. That is why the introduction of digital technologies in education could produce and reproduce educational inequalities. In schools with students having less economic capital, therefore also less technical capital, electronic diaries are not successfully integrated into the education process and are used only by some students. Due to this, social inequalities are reproduced within the given school and between the different schools. Electronic diaries also cannot be fully integrated into the actor-networks as non-human participants due to the lack of sufficient and adequate cultural capital by some parents and students. The analysis shows that digital divide is manifested in inequalities in access to ICT (electronic diaries), in their use, and in the benefits from their use.

The differences in the socio-economic situation of the three cases determine different perspectives for the students and imply significant socio-economic, which in many cases transform into educational inequalities between them. The presence or absence of IT resources such as relevant software, a proper device through which new technologies can be accessed (smartphone, computer, tablet, etc.), a good Internet connection, network coverage, and also having the skills to use technologies (that is, simultaneously technical, economic, and cultural capital) is central to the participation of the different social actors in the actor-network and assemblages they make. The use of e-diaries affects the social inequalities between students (and their families), deepening on and reinforcing them, to the extent that families of lower socio-economic status do not have access to the necessary resources (or types of capital) to use an e-diary. Unequal opportunities for education are caused by social inequalities that further influence students' success and performance in school, their interests, aspirations and attitudes toward education. This is especially relevant for schools from less developed areas, schools with vulnerable children, schools in which neither electronic diaries nor other technologies are available or used effectively.

The use of electronic diaries in schools affects educational inequalities in several ways. Some of the effects are linked to the digital divide, as the use of electronic diaries may increase the digital divide between students from low- and high-income families. Students from low-income families may not have access to the necessary technology and resources to use and benefit from electronic diaries while those from high-income families may have access to the latest technology and resources. E-diaries as non-human actors which are mediators instead of intermediaries provide students with access to a lot

of information and resources. However, if students from families of low socioeconomic status do not have these resources, this may widen the achievement gap between them and the other groups of students.

In general, in schools with high access to e-diaries, effective communication between parents, teachers, and students and the active participation of parents and students in the education process lead to higher educational results. This means that there is a stable actor-network. Schools with high levels of parental involvement and effective communication tend to provide a more supportive learning environment as parents and teachers work together to address student needs and provide the necessary support. This can lead to improved student results and neutralisation of negative influences from existing social inequalities in the family environment. At the same time, schools with limited access to technological resources and electronic diaries and distance learning platforms, with poor communication between parents and teachers and limited parental involvement in school life face challenges in providing an adequate level of support to their students. Students from low socio-economic status families lag behind in such schools, and this deepens existing social inequalities and leads to their lower education outcomes.

The theoretical and empirical analyses in the article are based on limited qualitative data, so there is no basis to draw generalisable conclusions for the whole country. However, research has highlighted important empirical facts that show that digital technologies have a key role in the education process and significantly influence it. It is clearly evident that inclusion in digital technology-based learning depends on the possession of certain resources, and more specifically on the availability of economic capital in families of different social status. The three cases show how the existence of significant social differences in terms of resources or individual's possession of different types of capital leads to the functioning of distance learning and e-diaries as a mechanism for turning social inequalities into educational ones and thus legitimising them.

The empirical research carried out clearly highlights several main problems in secondary schools in Bulgaria related to:

1. the gap between different schools in connection with socio-economic, transforming into educational inequalities;
2. the level of participation and commitment of parents and students in the educational process and
3. ineffective use of technology.

It is obvious that there is a need to reform the education system to reduce the influence of socio-economic inequalities on the education process, respectively to prevent the transformation of these inequalities into educational ones. Realising and turning this need from a slogan into a reality requires coordinated and consistent policies, both in the field of education and in the overall socio-economic environment.

The use of digital technologies - and in particular electronic diaries – should be the subject of planning, achieving a common understanding of the objectives and expected results, of researching available and necessary resources, and of assessing needs, so that the process becomes effective and helps to reduce the impact of socio-economic differences. With new challenges emerging, such as those caused by the COVID-19 pandemic, imposing a new (ab)normality and distance learning, digital technologies can help to implement a more effective, albeit "substitute" learning process compared to what happened in the period 2020-2022, but only if they are introduced as a result of research and planning, followed by an evaluation of effects and results.

The study reconfirms the role of parents as important social actors in the educational process, and not just as passive outside observers. Therefore, when educational reforms are undertaken, parents' understanding of the educational process, the necessary changes in it, and the way they could be engaged in the education reforms should be seriously considered.

Communication and parental involvement in school life, carried out through electronic diaries, can have a serious impact on the educational process and its results. The use of electronic diaries in schools has the potential to affect social and educational inequalities since in schools where parents and students have limited access to technology, the introduction of electronic diaries in practice deepens social inequalities and transforms them into educational ones. Therefore, it is important - both at the level of schools and in the development of national policies - to take these potential effects into account and work to mitigate and neutralize the possible negative impacts on students from families with a lower social status. This can be achieved by guaranteeing access to technological resources and conducting training on digital competences for vulnerable families. At first glance, it seems that providing access to the information and resources of e-diaries for all students and parents, regardless of their social background and status, is a task whose solution is solely the responsibility of the creators of educational policy. However, from the sociological point of view, this is not true and comprehensive reform and effective innovations in the education system are only possible when they are accompanied by adequate and long-term changes in all fields of society.

Acknowledgment. *This research was funded by the Bulgarian National Science Fund, contract number КП-06-ДВ-2/16.12.2019 within the project "Dynamics of inequalities in participation in higher and adult education: A comparative social justice perspective", the National Science Program VIHREN.*

REFERENCES

Латур, Бруно. "Реасемблиране на социалното". В *Увод в социологията на деeца мрежа*. София: Изток-Запад, 2007.

МОН, Национална стратегия за въвеждане на ИКТ в българските училища (2005–2007). Достъпен на 23 май 2023: https://www.mon.bg/upload/6598/strategia_ikt.pdf.

МОН, Обучение от разстояние в електронна среда 2020–2021: Последствия и поглед напред. Основни тенденции в системата на образованието по време на пандемията от COVID-19 и препоръки за ефективно и безопасно протичане на учебната 2021/2022 година. Достъпен на 23 май 2023: https://web.mon.bg/upload/27137/ORES-20_21.pdf

Akrich, Madeleine, and Bruno Latour. "A summary of a convenient vocabulary for the semiotics of human and nonhuman assemblies". In *Shaping technology/building society: studies in sociotechnical change*, edited by Wiebe E. Bijker, and John Law, 259–264. Cambridge, Massachusetts: MIT Press, 1992. Accessed May 12, 20213: https://religioustech.org/wp-content/uploads/2019/09/Latour-Bruno-and-Akrich-Madelaine-A-Summary-of-a-Convenient-Vocabulary-for-the-Semiotics-of-Human-and-Non-Human-Assemblies.pdf?fbclid=IwAR09ah5UEVXPjAh3BX1w9_65rdqqGxhUS3Vz3ctbf0poTyWQrPntqYTWOyM

Bourdieu, Pierre. *Distinction: A Social Critique of the Judgment of Taste*. Cambridge: Harvard University Press, 1984.

Bourdieu, Pierre. "The forms of capital. Cultural theory: An anthology". In *Handbook of Theory and Research for the Sociology of Education*, edited by Richardson, John, 241–258. Westport CT: Greenwood, 1986.

Bourdieu, Pierre. "Social space and symbolic power". *Sociological theory* 7, 1 (1989): 14–25.

Callon, Michel, Arie Rip, and John Law, eds. *Mapping the dynamics of science and technology: Sociology of science in the real world*. Springer, 1986.

DiMaggio, Paul, and Eszter Hargittai. "From the 'digital divide'to 'digital inequality': Studying Internet use as penetration increases". Princeton: Center for Arts and Cultural Policy Studies, Woodrow Wilson School, Princeton University 4, 1 (2001): 4-2. Working Paper #15, 2001.

Fenwick, Tara, and Richard Edwards. *Actor-network theory in education*. Routledge, 2010.

Glaser, Barney, and Anselm Strauss. *The discovery of grounded theory: Strategies for qualitative research*. Mill Valley, 1967.

Hristova, Asenka, Svetla Petrova, and Eva Papazova. *Impact evaluation of distance learning in an electronic environment or other non-attendance forms of studying on the effectiveness of school education*. Sofia: Institute for Researching Education: 2020. Accessed May 28, 2023: http://ire-bg.org/wpsite/wp-content/uploads/2020/10/Otsenka-na-vazdeystvieto-na-ORES_IIO.pdf

Hristova, Asenka, Svetla Petrova, and Ekaterina Tosheva. *Analysis of the consequences for the educational process, students, and teachers from distance learning in an electronic environment in the school year 2020/2021*. Sofia: Institute for Researching Education: 2021. Accessed May 28, 2023: https://ire-bg.org/wpsite/wp-content/uploads/2021/08/Impact_of_distance_learning_in_electronic_environment_on_educational_process_teachers_and_students.pdf

Institute of Market Economy. *Economic and investment profile of Sofia 2022*. Sofia: Institute of Market Economy, 2022. Accessed July 27, 2023: https://investsofia.com/wp-content/uploads/2023/01/IME_Sofia_Profile_2022-1.pdf

Latour, Bruno. "On actor-network theory: A few clarifications". *Soziale Welt* 1996: 369–381.

National Statistical Institute, Statistical data, Business statistics R&D, Innovations and Information Society Information Society ICT usage in households. Accessed July 28, 2023: https://www.nsi.bg/en/content/2805/ict-usage-households

OECD "Understanding the digital divide". *OECD Digital Economy Papers*, no. 49. Accessed May 28, 2023: https://www.oecd.org/sti/1888451.pdf. Paris: OECD Publications, 2001.

Philip, Donald. "The knowledge building paradigm: A model of learning for net generation students." In *Innovate: Journal of Online Education* 3, no. 5, 2007. Accessed May 28, 2023: https://www.learntechlib.org/p/104343/

Resnick, Paul. "Impersonal sociotechnical capital, ICTs, and collective action among strangers". In *Transforming Enterprise: The Economic and Social Implications of Information Technology*, edited by Dutton, William H., Kahin, Brian, O'Callaghan, Ramon and Andrew Wackoff, 399-412. Cambridge: MIT Press, 2004.

Sayes, Edwin. "Actor–Network Theory and methodology: Just what does it mean to say that nonhumans have agency?". *Social studies of science* 44, 1 (2014): 134–149. Accessed May 27, 2023: https://www.jstor.org/stable/pdf/43284223.pdf?ab_segments=0%252Fbasic_search_SYC-5462%252Fcontrol&refreqid=excelsior%3A5e059f97d8b7bf2d1e4fde1cfb764ee4

Slavova, Zornica, Nikolov, Adrian, Ganev, Petar and Teodor Nedev. *Regional Profiles: Indicators for Development.* Sofia: Institute of Market Economy, 2022. Accessed May 26, 2023: https://www.regionalprofiles.bg/var/docs/2022P/02Burgas_2022n.pdf

Tummons, Jonathan. "Curriculum as accomplishment: Tracing human and non-human actors in the delivery of educational curricula". In *Le Sujet de l'Acteur*. Wilhelm Fink Verlag, 2014: 163–180.

Van Deursen, Alexander Jam, and Jan AGM Van Dijk. "Toward a multifaceted model of internet access for understanding digital divides: An empirical investigation". *The information society* 31, 5 (2015): 379–391.

Van Deursen, Alexander Jam, and Ellen J. Helsper. "The third-level digital divide: Who benefits most from being online?". In *Communication and information technologies annual*, 29–52. Emerald Group Publishing Limited, 2015.

Zhang, Weiyu. "Technical Capital and Participatory Inequality in Edeliberation: An Actor–Network Analysis". *Information, Communication & Society* 13 (2010): 1019–1039. Accessed May 20, 2023. doi: 10.1080/1369118X.2010.495988

DIGITALNE TEHNOLOGIJE, DRUŠTVENI DISPARITETI I OBRAZOVNE NEJEDNAKOST: SLUČAJ ELEKTRONSKIH DNEVNIKA U BUGARSKIM SREDNJIM ŠKOLAMA

Rad se fokusira na nejednakosti u pristupu digitalnim tehnologijama i njihov uticaj na obrazovanje (naročito elektronski dnevnici) u srednjim školama u Bugarskoj. Pokušava da odgovori na sledeće istraživačko pitanje: da li uticaj digitalnih tehnologija na pristup obrazovnom procesu zavisi od postojanja društvenih nejednakosti i horizontalnih razlika između i unutar škola? Teorijski okvir je zasnovan na teoriji mreže aktera Bruna Latura, Burdijeovoj teoriji kapitala, kao i konceptu tehničkog kapitala. Metodologija istraživanja uključuje studije slučaja tri različita tipa škola sa kvalitativnim metodama prikupljanja podataka: intervjue i fokus grupe sa ključnim akterima kao što su direktori, učenici, nastavnici i roditelji. Prema mišljenju različitih društvenih aktera u obrazovnom procesu,

korišćenje elektronskih dnevnika značajno olakšava pristup, čuvanje i distribuciju informacija, ali ne za sve grupe dece i njihovih roditelja. Analiza tri različita tipa škola otkriva prisustvo značajne diferencijacije i nejednakosti u bugarskom obrazovnom sistemu. Rezultati pokazuju da su teorije Burdijea i Latura pogodne za analizu bugarskog obrazovnog sistema. Na osnovu dobijenih rezultata zaključuje se da su za sveobuhvatnu reformu obrazovnog sistema potrebne ne samo obrazovne inovacije već i adekvatne i dugoročne promene u svim oblastima društva.

Ključne reči: *elektronski dnevnik, obrazovanje, tehnologije, društvene nejednakosti, pristup*.