E-Learning Beyond the Classroom: Investigating Socio-Economic Inequalities in Online Educational Practices Among Bulgarian Students

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Abstract

New Internet-based educational technologies, platforms and applications are becoming increasingly popular among learners worldwide. Using them, students and learners are finding ways to make learning easier, more fun and more effective. However, the digitalization of education raises questions about the distribution of digital resources and who has access to education and who does not. This research attempts to answer the question of how economic inequalities become educational in the context of the use of online educational resources by drawing on Bourdieu's cultural capital theory. The article provides quantitative analysis on data from Eurostat's ICT usage in households and by individuals, analysed by using structural equation modelling to demonstrate how economic inequalities are mediated by the technologies into educational inequalities in two ways. First, the access to digital technology leads to increased digital skills, and second, the technology and digital skills lead to greater chances of using online educational resources.

Introduction

Education in the 21 century is increasingly shaped by the demands of markets and technological platforms, fundamentally altering its purpose, structure, and delivery (Jandrić, 2022). Knowledge is commodified into marketable skills and certifications, prioritizing economic utility over critical thinking and personal growth (Rotta & Teixeira, 2019; Tomlinson & Watermeyer, 2022). As education becomes increasingly integrated into digital platforms, it shifts from being a public good to a privatized service, accessible primarily to those with the financial and technological resources to participate (Kuhn et al., 2023). At the same time, students from disadvantaged backgrounds often lack access to the technological tools, infrastructure, and resources necessary to thrive in increasingly digitized education systems, leaving them further marginalized. Meanwhile, affluent families can afford private education, supplementary resources, and access to cutting-edge technology, widening the achievement gap (Van De Werfhorst et al., 2022; Robinson et al., 2018).

In this context of the increasing digitalization of education, studying how socio-economic inequalities are translated into educational inequalities is crucial to understanding the mechanisms that reinforce exclusion. Therefore, the following paper will try to explain these mechanisms by applying Bourdieu's cultural capital theory and by providing a quantitative analysis to show how these inequalities are mediated by the digital technologies in terms to the access to education. It focuses on two types of self-learning practices among Bulgarian students, as the self-learning reframe the education as an individual responsibility, abstracting away socio-economic disparities and privileging those with access to resources and technology (Jandrić, 2022).

The case of Bulgaria

The case of Bulgaria is relevant for a better understanding of the effects of the digital technologies on education because of the constantly increasing levels of income and educational inequality in the country (Milenkova, 2011), which makes the problem at hand more explicit. The country underwent a profound shift during the late 20th century, transitioning from a centrally-planned socialist economy to a market-oriented one (Kaneff, 1998). The collapse of the communist regime in 1989 marked a pivotal moment in Bulgaria's recent history leading to political and economic reforms. This transition presented challenges such as economic fluctuations, corruption and difficulty establishing a democratic framework, resulting in a marginalization of the country in the international division of labour (Vassilev, 2003).

Presently, Bulgaria has the highest level of inequality in the European Union measured by the Gini coefficient (Eurostat, 2023), having lasting influence on the country's social fabric (Stoilova & Haralampiev, 2022; Mintchev et al., 2010). An important driver of socio-economic disparities in Bulgaria is the uneven distribution of wealth and opportunities, resulting in a multifaceted divide (Boyadjieva & Kabakchieva, 2015). Access to quality education is often impeded by economic constraints, with disadvantaged families encountering obstacles in providing essential resources for their children's learning journey (Ilieva-Trichkova & Boyadjieva, 2014).

Additionally, neoliberal reforms are introduced in the educational system so to subordinate it to the market logic, forcing the schools to compete with each other for budgets and the parents to compete for the best school for their children (Zdravkov, 2022). However, the post-socialist Bulgarian economic structure does not require highly educated professionals (Hoareau et al., 2013) but rather cheap labor (Vassilev, 2003), leading to a collapse in the international

rankings (OECD, 2022) and highly polarized school system of thin layer of "elite" schools (Marinova, 2020).

As a result, the education system reflects and exacerbates the social inequalities (Ilieva-Trichkova & Boyadjieva, 2014; Iakimova, 2022, Marinova, 2020). Schools located in economically deprived areas frequently encounter insufficiencies in resources, infrastructure, and staff (Zdravkov, 2022). As a consequence, pupils in these localities struggle to obtain a comprehensive education, keeping them locked in lower social strata, affecting their potential for social mobility. A significant issue in Bulgaria, which usually tops the rankings of educational inequalities (European Commission, 2020a).

Educational technologies: resolving or reinforcing the educational inequalities?

The integration of digital technologies into education reflects their broader convergence with human and social life, where they are no longer 'separate, virtual, or "other"' but intrinsic to everyday existence (Jandrić et al., 2018, p. 893). This digital shift, which was particularly socially evident during the COVID-19 lockdown, highlighted the impact of unequal access to these essential technologies, limiting the ability of those without the necessary resources and skills to fully participate in this digitally embedded educational paradigm (Ford & Jandrić, 2024).

By accessing online learning resources, students improve their learning experience, making it easier, funnier and more effective. Consequently, the demand for these resources is constantly increasing, and Eurostat surveys suggest that a considerable number of students in the EU and Bulgaria use them frequently. During the COVID-19 pandemic in the EU, 65% of students were able to utilize the Internet to their advantage. In Bulgaria, this percentage was

even higher at 75.1% (refer to Figure 1). While in 2022, this number has decreased in both the EU and Bulgaria, it still highlights the important role that the Internet plays in the lives of students today.
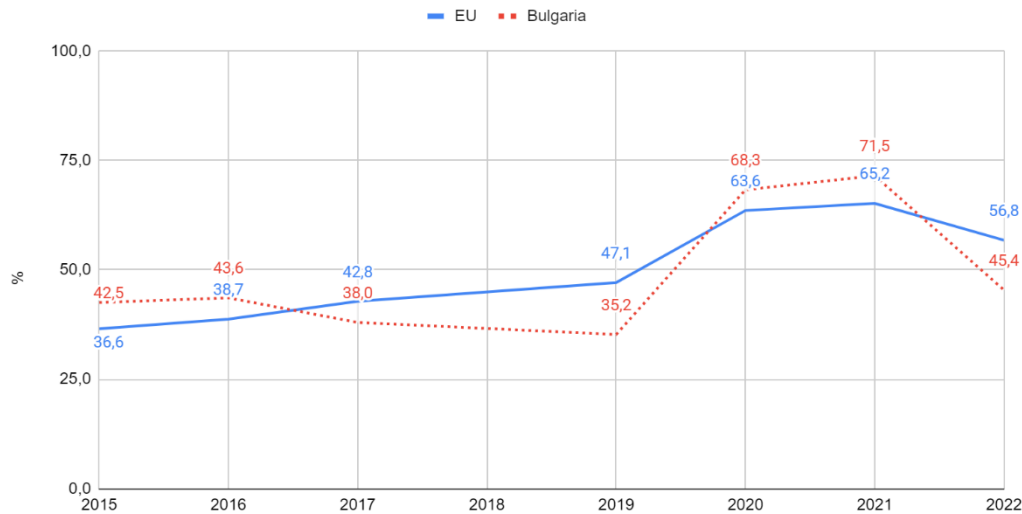
Figure 1. Percentage of use of online educational materials by students in the EU and Bulgaria from 2015 to 2022

Note. Data from DESI, 2022, own calculations.

Students' interest in online educational resources is no coincidence, and a number of studies have shown that their use has a positive impact on educational achievement (Robinson et al., 2018; Meseguer-Artola et al., 2020; Ciglaric & Vidmar, 1998; Allen & Tay, 2012). The Internet provides an opportunity for students to develop additional abilities in independent learning and information management. Using the internet to prepare lessons is more enjoyable and effective for students (Hamdan & Amorri, 2020). It also enhances digital literacy skills and the capability to critically assess information sources (Goldman et al., 2012). Social networking is a vital tool on the internet for mutual support, exchanging experiences, knowledge, advice, and educational materials between classmates and peers (Greenhow, 2011).

The importance of the educational technologies is recognized even on institutional level. The European Commission's Better Internet for Children Strategy (European Commission, 2022a.), recognizes that limited internet use can increase the risk of poor educational outcomes, poor mental health and lack of long-term prospects. Children who are at risk of poverty and lack basic necessities are considered particularly vulnerable, as are remote areas with insufficient infrastructure (ibid). The Digital Decade for Children and Young People, established by the European Commission, highlights that not all European children and young people have the same prospects for accessing the internet.

In this regard, Bulgaria ranks second to Romania in the severity of digital deprivation. Approximately one-fifth of youngsters live in homes that lack the financial means to acquire a computer or internet connection, while two-fifths of rural households cannot avail themselves of high-speed broadband (European Commission, 2020b). The digital deprivation in Bulgaria is particularly acute among certain marginalized groups, such as the Roma and Turkish communities. These groups are disproportionately affected due to a combination of socio-economic factors, including poverty and geographic isolation. Many Roma and Turkish families live in rural areas where access to high-speed broadband and digital technologies is limited (Petkova, 2022). Furthermore, systemic issues like segregated schooling and lower levels of educational attainment exacerbate their exclusion from the digital learning space (Imdorf et al., 2022).

Against this background, the aim of this study is to examine how economic inequalities are translated into technological disparities, such as unequal access to digital tools and internet connectivity, and how these technological gaps subsequently influence educational opportunities and outcomes in the context of

online learning. To address this issue, the analysis focus on: (1) analysing how economic, digital and educational inequalities fit into the wider framework of social inequalities; (2) explaining in this framework how socio-economic inequalities transforms to educational via the technologies; (3) providing empirical analysis of quantitative data from the 2021 Eurostat' Information and Communications Technologies (ICT) usage by Households and Individuals data from 2021. The analysis utilizes Structural Equation Modelling (SEM) to demonstrate the link between technological resources and the conversion of economic (household income) into cultural capitals (digital skills and the use of online educational resources).

Cultural Capital in Digital Education: A Bourdieuian Perspective on the Reproduction of Inequality

This analysis is based on the Pierre Bourdieu's theory of cultural and social reproduction (Bourdieu, 1973), which has been widely applied in the field of educational inequalities (Harker, 2016). Bourdieu suggests that schools not only transmit objective knowledge and experience from one generation to the next, but also the culture of the dominant class. As such, the educational system is a separate social field that functions as a mechanism for maintaining existing class relations and ensuring that the dominant capitalist order remains intact. This is achieved by tailoring education to the needs of the capitalist economy, where students are socialized to accept their roles in a hierarchical labor market (Hill & Maisuria, 2022).

A social field is a relatively autonomous social microcosm with its own rules, regulations, and hierarchical power structure that distinguishes it from other social areas like politics, finance, or religion (Bourdieu and Wacquant, 1992; Bourdieu, 1984). A field is a social arena where the individuals are involved in ongoing struggles over their place in the hierarchy, definition and redistribution

of capitals. The educational system is such a field, where the families are competing to place their children in the best school but also to impose criteria of evaluation which is most favourable to them. Furthermore, the academic achievements often arise from the alignment between cultural practices of a particular class and the requirements of the educational system or the standards defining success within it, rather than innate abilities labelled as 'gifts.' The educational system therefore marks those endowed with cultural capital, which is inherited as a result of social origin, as 'academically talented' (Bourdieu, 1974).

In Bourdieu's terminology, the resources that parents pass on to their children are called capitals - 'accumulated labour' that allows individuals and groups to appropriate social energy (Bourdieu, 1986: 15). There are three fundamental forms of capital: economic, cultural (institutionalized, incorporated and objectified) and social. Depending on the configuration of capital that families possess, they use different strategies to reproduce or increase it. For instance, parents with institutionalized cultural capital, such as advanced degrees, can leverage their knowledge to navigate educational systems and ensure their child's enrolment in elite schools. Those with embodied cultural capital, like linguistic skills or academic habits, can instil these traits in their children to help them excel academically. Meanwhile, parents with objectified cultural capital, such as access to books, educational technologies, or other learning resources, provide their children with tools to succeed in educational environments, further perpetuating class advantages.

According to Bourdieu, cultural capital is familiarity with elite culture and in some sense, these capitals guarantee the ability to maneuver in the educational field. Cultural capital is relative to the structure of the field and depends on what is considered valuable, which in turn results from historical specificities.

In order to fully assimilate the knowledge and 'high culture' of the school, students must have a prior accumulation of resources, skills, culture and tools with which to do so. However, these resources are unevenly distributed among them and depend on where they are located in the social hierarchy. Bourdieu therefore refers to 'cultural inertia' as the belief that school increases the social mobility of students and gives them an equal start in life. This is also why, according to him, education is a "conservative force" through which social hierarchy is recreated in society (Bourdieu, 1972).

The higher the social status of a family, the more time, effort and resources are required to pass it on to their children. This explains why the competition for the best school is so intense, why the strategies for competing are so varied, and why the competition is fiercest among parents from the most privileged social backgrounds (Bourdieu, 1996). In this context, access to digital technologies and online educational resources plays a crucial role in the adoption of today's school culture.

According to Bourdieu, economic capital is the basis of all forms of capital, but it can never be completely reduced to it. This is due to their specific effects, the need for conversion between types of capital and the constant need to devise new strategies (Bourdieu, 1986). In the online field, as a relatively autonomous sphere with its own rules and stakes (Levina & Arriaga, 2014), economic capitals cannot provide direct cultural capitals, but they can provide access to services and information - broadband internet access, a high-quality telephone and a modern laptop.

Thanks to the secure and easy access to these technologies, students have the opportunity to discover the online environment for themselves, take risks and make mistakes without serious consequences, gaining digital skills in the

process. They can watch a video lesson, log in to class, check what homework they have in e-learning, check what they are doing in class, check what they are doing in class, check what they are doing in e-learning. diary, ask someone on the internet for the solution to a problem or check what Wikipedia says. This form of self-directed accumulation of embodied cultural capital has also been referred to as "learning recreation" (Hollingworth et al., 2011), where students are both entertained and learn. In contrast, students who are limited by digital resources are quick to disengage from this medium and associate it with something unpleasant, developing a 'taste for the necessary' (Robinson, 2009).

In this perspective, digital technologies are not cultural capital per se, but a kind of precursor that students may or may not have at their disposal. And only if they have the relevant skills and knowledge at their disposal can they adapt technologies for educational purposes, turning them into objectified cultural capitals. As Bourdieu argues, owning machines (a laptop, for example) requires only economic capital. To benefit from it, however, it is necessary to have access to incorporated cultural capitals either personally or with the help of others (Bourdieu, 1986: 20).

Given what has been said so far, the following sections will show how economic capitals are converted into cultural ones within the family, and hence into educational ones. To this end, the results of a quantitative analysis are presented that analyses the relationship between 1) students' families' economic capitals (as measured by their income) and students' chances of having access to several types of technologies, high digital skills, and educational materials; 2) access to such technologies and students' level of digital skills; and 3) digital technologies/skills and students' chances of using online educational resources.

Data and methodology

The study uses Eurostat's ICT in households and by individuals for the year 2021. This is an annual survey that collects harmonized and comparable information on the use of ICT in households and by individuals. It covers a wide range of characteristics related to access to and use of ICT, use of the Internet and other electronic networks for different purposes, ICT skills and competences, etc., as well as various socio-demographic characteristics such as gender, age, level of education, occupation, main status in the labour market. It is representative for all countries where it is conducted and for Bulgaria it includes 8935 participants. In order to select only students, the analysis includes all those aged 16-24 (not including those under 16) who have not completed secondary education, but have declared that they are still in education. This reduces the sample to 257.

The economic capital of the family is measured by the variable income of the household in which the student lives. The database does not have access to absolute incomes, but is divided into 5 categories (1) lowest, 2) low, 3) medium, 4) medium to high, 5) high), which are categorized on an ordinal scale. The indicators chosen for objectified cultural capital are: having (1) or not (0) fixed broadband access; having (1) or not (0) access to a laptop and/or desktop computer; having (1) or not (0) access to a telephone; having (1) or not (0) a tablet; having (1) or not (0) any other devices (e.g., smart TV, smart speakers, game console, e-book reader, smart watch). For the incorporated cultural capital used, having (1) or not (0) high digital skills. In this case, two types of educational practices were analysed. They are using (1) or not (0) online educational materials; and attending (1) or not (0) online courses. Controlled for gender, type of locality, number of children in the household, number of household members.

The data were analysed using structural equation modelling (SEM) using Stata software (SEM Builder), which is a series of (logistic) regression equations (Stata manual, 2019). The resulting regression coefficients were used to calculate average marginal effects for each case, and the result is directly interpretable and comparable as odds ratios in percentages. This is the so-called marginal mediation analysis (Barrett et al., 2019), which allows to calculate the effects of cultural capital as a mediator of economic inequalities. The results of this analysis are presented in Figure 2, where only statistically significant relationships ($p<0.05$) are shown for clarity. The descriptive analysis is presented in Table 1.

Table 1. Descriptive statistics of all analyzed variables.

Variables	Value	%	Freq.
Dependent variable			
Participation in an online course	No	66,1	170
	Yes	33,9	87
Text-based learning materials	No	31,5	81
	Yes	68,5	176
Independent variables			
Broadband Internet	No	13,6	35
	Yes	86,4	216
Laptop or desktop computer	No	15,9	41
	Yes	84,1	216
Smartphone	No	6,6	17
	Yes	93,4	240
Tablet	No	79,4	204
	Yes	8,95	23
Other device (e.g. smart tv, etc.)	No	91,05	234
	Yes	8,95	23
Digital skill level	Low	45,14	116
	High	54,86	141
Household income quartiles (lowest =q5)	q5	24,1	62
	q4	20,6	53
	q3	13,2	34
	q2	25,7	66
	q1	16,3	42

Note. Data from DESI (2021), own sample analysis.

Result of the analysis

Starting from the socio-economic differences between students, the first step is to establish whether there is a relationship between household income and students' access to technology, their level of digital skills, and their use of online educational resources.

Household income (grouped into five categories), which is an indicator of families' economic capital, has no direct correlation with students' digital skills, nor does it have with participation in online courses or use of online materials (Fig.2). They do, however, have a direct effect on students' access to broadband internet and laptop/laptop computers. The coefficient of 0.11 for both, respectively, implies that a one-level increase in income (lowest→low→medium→medium to high→high) increases students' chances of having access to them by 11%.

Access to broadband, in turn, increased a student's chances of participating in online courses by 14%, and increased their chances of having high digital skills by 27%, but it had no bearing on their use of online resources. Having access to a laptop/desktop computer increases a student's chances of participating in online courses by 36% and digital skills by 25%. Access to a phone increased their chances of using online materials by 39%, and his chances of having high digital skills by 39%. Whether or not one has access to a phone has no relationship to household income level. High digital skills in turn increase a student's chances of using educational online materials by 27%.

Another entertainment device and a tablet have a particular effect against the backdrop of other technologies. On the one hand, they have no relationship with increasing digital skills, and on the other hand, they have a negative effect on

the chances of participating in online courses by 22% and 16% respectively. At the same time they are not affected by the level of income in the family.

Table 2. Statistically significant direct, indirect and full effects measured through coefficient of marginal analysis.

Interconnection	Direct effect	Indirect effect	Full effect
Income→internet→online courses	-	0,14	0,14
Income→laptop→online courses	-	0,36	0,36
Income→internet→dig. skills→text.	-	0,54	0,54
Income→laptop→dig. skills→text.	-	0,52	0,52

Note: Own calculations.

Table 2 shows what effects differences in students' household income have on their chances of using online materials or taking online courses. Since there is no statistically significant relationship between income and educational practices, this implies that their effects are only indirect, that is unity mediated by a second type of factor. Household income has the highest effects on the use of online materials because relevant technologies lead to increased digital skills. These in turn further increase the chances of using online materials.
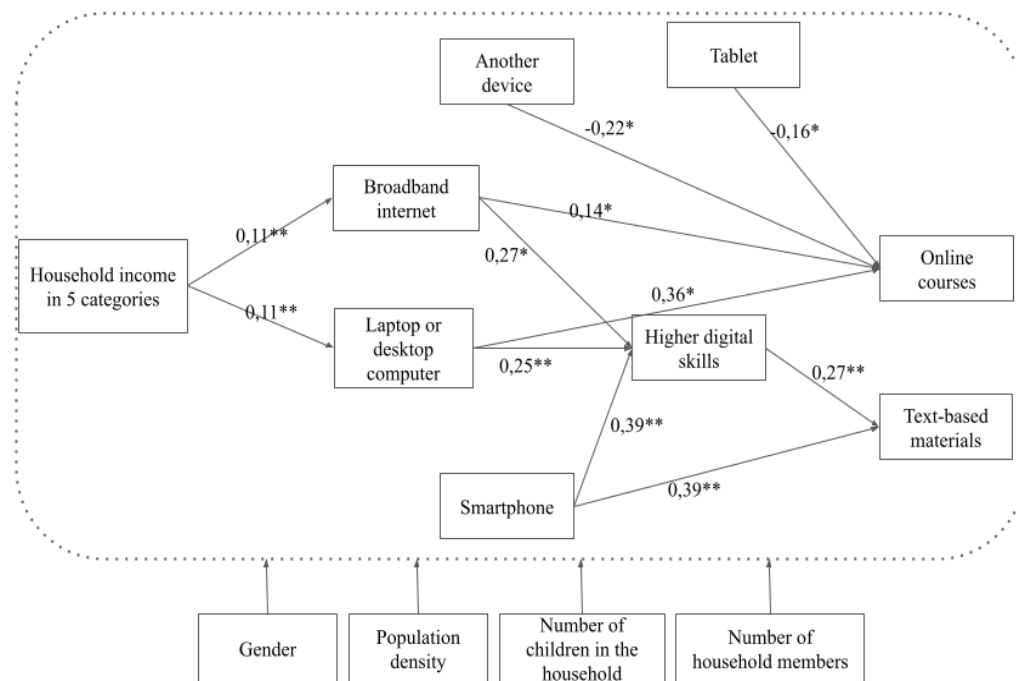
Fig. 2. Result of structural modelling showing the effects of mean marginal effects.

Note. Only statistically significant relationships are included, **p<0.001, *p<0.05. N=257. Controlled for gender, population density of the city or rural area, number of children in household, number of household members. Data from DESI 2021, own calculations

Discussion of the results

Using P. Bourdieu's theory of cultural and social reproduction (Bourdieu, 1974), an attempt was made to explain the logic of this transformation as part of a more general process of social inequalities. In this sense, digital technologies for accessing the Internet, and educational resources on the Web are cultural capitals that are transmitted within the family. It is in this context that the knowledge accumulated through the Internet is pre-existing capital that has an instrumental function in the appropriation of the cultural capitals that circulate in the educational system.

In line with the Bourdieu's theory, the results from the SEM analysis suggests that household income does not directly correlate to greater use of the studied internet based educational resources nor the levels of digital skills, which today

are basic necessity for the students. The family's income (economic capital) have to be converted into digital technologies and digital skills before they can become education advantages. This is most evident through the income effects on broadband and laptop/computer access, which in turn have a direct effect on both the accumulation of digital skills and the usage of educational technologies. Thus the results provide indications that wealthier families provide their children with access to technology, which under the right conditions can become cultural capital and a means of accumulating educational capital, giving them a greater chance of academic success.

This transformation is crucial for adapting to the digitized educational landscape. As Robinson shows for example, "non- and low-quality access individuals develop a task-oriented information habitus stemming from their experiences of deprivation and urgency, developing "taste for the necessary" (Robinson, 2005: 505). These individuals are predisposed to avoid the internet technologies. In contrast, the learners with high-quality home internet access, liberated from spatial, temporal, and access constraints, they develop a playful or exploratory information, leading to have positive dispositions towards the digital space. This means that more affluent families are able to create digitally enhanced environment that foster accumulation of cultural capital and the ability to access the educational resources online.

The link between using a smartphone and having digital skills, regardless of income, could suggest technology is becoming more accessible to everyone. Smartphones themselves, which are quite common, appear to help in developing digital skills despite one's social and economic background, as the phone is so widespread among different social groups that it is no longer used as a tool for social distinction (Bourdieu, 1984). The quality and the brand, however, is another topic, which could not be addressed due to the limitation of the used

data (North et al., 2008). Nevertheless, as suggested in previous studies (Napoli & Obar 2014), the users relying only on smartphones actually form an internet underclass, which are greatly limited in their ability to accumulate cultural capitals in the internet. The commodification of smartphones as tools for digital skill development aligns with the market's need to produce a labor force with at least baseline technological competencies, even if those competencies do not equitably translate into improved socio-economic mobility (Canpolat, 2021).

The negative effects of other entertainment devices and tablets on the chances of participating in online courses suggest a nuanced relationship. While technology can be a form of cultural capital, not all forms of technology contribute equally to educational success. In the context of this study, it is very clear that they are not objectified cultural capital. They do not increase students' digital skills, nor do they increase their chances of using educational resources. On the contrary, they bring minus cultural capital (at least from the perspective of the field of education), reducing their chances to accumulate educational capital. An explanation could be sought in that technologies such as laptop require more skills, but are instead much more adaptable to the needs of their users (Napoli & Obar 2014; Albó et al. 2018), and therefore are likely to be converted into an educational tool.

Also, these results may indicate the families that prioritize gaming consoles and entertainment devices may develop a habitus (Bourdieu, 1990), that values leisure and entertainment over academic pursuits. This habitus can influence the way children perceive and engage with different activities, potentially leading to a diminished interest in online education. Bearing in mind that not every technological resource can be converted into an educational tool should be taken into account when shaping future policies to promote participation in digital education.

From Bourdieu's analytical framework, two possible strategies for accumulating cultural capital could be distinguished. Parents with high economic but low cultural capital may focus on creating the right conditions for access to online courses. Participation in online courses may depend on the family's objectified cultural capital which provides access to online education that is not limited by embodied cultural capital. At the same time, the use of online materials implies more activity on the part of the learner, who has to know where and what to look for, assess whether the information is relevant and so on. Therefore, this strategy requires more embodied cultural capital and less economic capital - a smartphone (which is the most common device in the sample, see Table 1) to procure educational resources. In this case, families with high cultural capital but low economic capital are oriented towards providing opportunities for text-based learning.

Summary and conclusions

Education in the 21st century is increasingly shaped by market demands and digital platforms, transforming it from a public good into a privatized service, where knowledge is commodified for economic utility (Jandrić, 2022; Rotta & Teixeira, 2019). This shift exacerbates inequalities, as affluent families access advanced technologies and resources, while disadvantaged students lack the tools and infrastructure necessary to thrive, widening the educational achievement gap (Van De Werfhorst et al., 2022; Robinson et al., 2018).

Studying Bulgaria, a country with some of the highest levels of income and educational inequalities in Europe, provides crucial insights into the mechanisms by which socio-economic disparities are perpetuated in the digital age (Stoilova & Haralampiev, 2022; Mintchev et al., 2010; Boyadjieva & Kabakchieva, 2015). Bulgaria's post-communist context, marked by a transition

from a centrally planned economy to a market-oriented system, has amplified these inequalities, particularly in access to education and technology (Vassilev, 2003). This makes it a valuable case for understanding how digital education systems, intended to democratize learning, can instead reinforce structural inequalities.

Drawing on Bourdieu's analysis (Bourdieu, 1974; 1984;1986;), this study reveals how the possession of digital technologies not only exacerbates educational disparities but also legitimizes them. The findings demonstrate that while household income does not directly translate into greater use of internet-based educational resources or digital skills, income plays a crucial role in acquiring technologies, such as broadband and laptops, which serve as intermediaries for converting economic capital into cultural capital. Wealthier families are better equipped to create digitally enriched environments that foster the accumulation of cultural and educational capital, positioning their children for greater academic success.

However, not all technological tools equally contribute to educational advancement; for instance, laptops are more likely to be converted into educational tools, whereas devices like gaming consoles or tablets may foster a habitus valuing leisure over academic pursuits, reducing the chances of educational engagement. The widespread use of smartphones appears to democratize access to basic digital skills across socio-economic groups, yet reliance solely on smartphones possibly creates an "internet underclass" (Napoli & Obar, 2014) with limited opportunities to accumulate cultural capital necessary for online education.

In this context, families with high cultural capital but limited economic capital may prioritize cost-effective strategies like text-based learning via smartphones,

while those with high economic but low cultural capital focus on providing access to online courses. These nuanced dynamics emphasize the importance of recognizing the varied educational value of different technologies and the influence of familial habitus on children's engagement with education. Policymaking must consider these distinctions to ensure digital education initiatives address disparities and promote equitable access to culturally valuable educational tools.

Study limitations

The main limitation for this type of analysis is the inability to measure the cultural capital of the student's parents, which is usually done through the mother's and/or father's level of education. Unfortunately, however, the database does not have such variables, and statistical "control" of this variable would better isolate the effects of economic capitals. A second limitation is that the analysis cannot meaningfully consider what courses students take or what materials they use. A third limitation is that the study cannot account for the quality of the technology that students use, which must vary considerably by family income.

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responsibility for all conclusions drawn from the data lies entirely with the author.

References

Allen, M., & Tay, E. (2012). Wikis as individual student learning tools: the limitations of technology. International Journal of Information and Communication Technology Education, 8(2), 61-71.

Barret, T. S., Lockhart, G., & Cruz, R. A. (2019). Marginal Mediation Analysis: A Practical Statistical Framework for Interpretable Mediation Effects. PsyArXiv. June 18. https://doi.org/10.31234/osf.io/fgm8t

Bourdieu, P. (1973). Cultural Reproduction and Social Reproduction. Knowledge, Education, and Cultural Change. Routledge.

Bourdieu, P. (1974). The school as a conservative force: scholastic and cultural inequalities, in. Eggleson (Ed.) Contemporary Research in the Sociology of Education (London, Methuen).

Bourdieu, P. (1984) Distinction: A Social Critique of the Judgement of Taste. Harvard: Harvard University Press.

Bourdieu, P. & Wacquant LJ D (1992) An Invitation to Reflexive Sociology. Chicago: University of Chicago Press; Cambridge: Polity Press.

Bourdieu, P. (1986). Forms of capital. In: Richardson, J., Handbook of Theory and Research for the Sociology of Education (1986), Westport, CT: Greenwood, pp. 241-58

Bourdieu, P. (1990) The Logic of Practice. Stanford, CA: Stanford University Press.

Bourdieu, P. (1996). The State Nobility: Elite Schools in the Field of Power. Stanford University Press.

Boyadjieva, P., & Kabakchieva, P. (2015). Inequality in Poverty: Bulgarian Sociologists on Class and Stratification. East European Politics and Societies, 29(3), 625-639. https://doi.org/10.1177/0888325415599572

Canpolat, E. (2021). Smartphones and Exploitation in the Age of Digital Capitalism: Ordinary Aspects of the Transformation of Everyday Life. tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society, 19(2), 424-437.

Ciglaric, M., Vidmar, T. (1998). The use of Internet technologies for teaching purposes European Journal of Engineering Education, 23 (4) (1998), pp. 497-503

Digital Economy and Society Index (DESI) (2022). https://digital-strategy.ec.europa.eu/en/policies/desi.

EU-SILC. 2020. Mean and median income by educational attainment level – EU-SILC survey. https://bit.ly/41GecBi

European Commission. (2020a). Educational inequalities in Europe and physical school closures during COVID-19. Fairness policy brief series 04/2020. Fetzer, Thiemo, Lukas Hensel, Johannes Hermle, Christopher Roth.

European Commission. (2020b). Digital Education Action Plan 2021-2027
Resetting education and training for the digital age. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2022:212:FIN

European Commission. (2022). Communication from the Commission to the
European Parliament, the Council, the European Economic and Social Committee and the Committee and the Committee of the Regions. A Digital Decade for children and youth: the new European strategy for a better internet for kids (BIK+). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2022:212:FIN.

Eurostat. (2015). ICT usage in households and by individuals Internet use.
https://ec.europa.eu/eurostat/databrowser/view/ISOC_CI_AC_I__custom_5816116/default/table?lang=en

Eurostat. (2023). Gini coefficient of equivalised disposable income - EU-SILC
survey [tessi190] Eurostat tables.

https://ec.europa.eu/eurostat/databrowser/bookmark/ddab727d-c6c2-41e4-99ab-d0ee2ffdf1a1?lang=en

Ford, D. R., & Jandrić, P. (2024). Postdigital Marxism and education. Educational
Philosophy and Theory, 56(1), 1-6.

Goldman, S. R., Braasch, J. L. G., Wiley, J., Grasser, A. C., & Brodowinska, K.
(2012). Comprehending and learning from internet sources: Processing patterns of better and poorer learners. Reading Research Quarterly, 47(4), 356-381.

Greenhow, Ch. (2011). Youth, Learning, and Social Media. Journal of
Educational Computing Research. 45. 139-146. 10.2190/EC.45.2.a.

Hamdan, K., & Amorri, A. 2020. The Impact of Online Learning Strategies on
Students' Academic Performance. In (Ed.), E-Learning and Digital Education in the Twenty-First Century. IntechOpen. https://doi.org/10.5772/intechopen.94425

Harker, R. (2016). Bourdieu, cultural capital and the cultural field. In The
Palgrave Handbook of Sociology in Britain (pp. 297-318). Palgrave Macmillan, London.

Hill, D., & Maisuria, A. (2022). Social class: Education, social class and Marxist theory. In
Encyclopaedia of Marxism and education (pp. 624-643). Brill.

Hollingworth, S., Mansaray, A., Allen, K., & Rose, A. (2011). Parents'
perspectives on technology and children's learning in the home: social class and the role of the habitus. Journal of Computer Assisted Learning, 27(4), 347-360. doi:10.1111/j.1365-2729.2011.00431.x

Hoareau, C., Ritzen, J. & Marconi, G. 2013. Higher education and economic innovation, a
comparison of European countries. IZA J Labor Stud 2, 24 (2013). https://doi.org/10.1186/2193-9012-2-24

Ilieva-Trichkova, P. & Boyadjieva, P. (2014). Dynamics of inequalities in
access to higher education: Bulgaria in a comparative perspective, European Journal of Higher Education, 4:2, 97-117, doi: 10.1080/21568235.2013.857946

Imdorf, C., Ilieva-Trichkova, P., Stoilova, R., Boyadjieva, P., & Gerganov, A. (2022).
Regional and Ethnic Disparities of School-to-Work Transitions in Bulgaria. Education Sciences, 12(4), 233.

Iakimova, M. (2022). Education and Inequalities: Problem Nodes and Public

Speakers, Bulgaria 2017–2020. Критика и хуманизъм, 2(57), 9-23.

Jandrić, P. (2022). Postdigital Marxism. In Encyclopaedia of Marxism and Education (pp. 552-567). Brill.

Jandrić, P., Knox, J., Besley, T., Ryberg, T., Suoranta, J., & Hayes, S. (2018). Postdigital science and education. Educational Philosophy and Theory, 50(open in a new window)(10(open in a new window)), 893–899. https://doi.org/10.1080/00131857.2018.1454000

Kaneff, D. (1998). Negotiating the past in post-socialist Bulgaria. Ethnologia Balkanica, (02), 31-45.

Kuhn, C., Khoo, SM., Czerniewicz, L. et al. 2023.Understanding Digital Inequality: A Theoretical Kaleidoscope. Postdigit Sci Educ 5, 894–932 (2023). https://doi.org/10.1007/s42438-023-00395-8

Levina, N., & Arriaga, M. (2014). Distinction and status production on user-generated content platforms: Using Bourdieu's theory of cultural production to understand social dynamics in online fields. Information Systems Research, 25(3), 468-488. doi: 10.1287/isre.2014.0535

Marinova, S. (2020). The parallel worlds of Bulgarian school. A comparative analysis of two cases. Annual of Sofia University "St. Kliment Ohridski", Faculty of Philosophy, Sociology, Volume 109. https://research.uni-sofia.bg/xmlui/handle/10506/2490?show=full.

Meseguer-Artola, A., Rodriguez-Ardura, I., Ammetller, G., & Rimbau-Gilabert, E. (2020). Academic impact and perceived value of Wikipedia as a primary learning resource in higher education. Profesional De La información, 29(3).

Milenkova, V. (2011). Educational Inequalities in the Context of Bulgarian Conditions. Postmodernism Problems, 1(1), 77-97. Retrieved from https://pmpjournal.org/index.php/pmp/article/view/159.

Mintchev, V., Boshnakov, V., & Naydenov, A. (2010). Sources of income inequality: Empirical evidence from Bulgaria. Economic studies, 19(4).

Napoli, P. & Obar, J. 2014. The emerging mobile Internet underclass: a critique of mobile Internet access. The Information Society 30(5): 323-334.

North, S., Snyder, I, & Bulfin, S (2008). Digital tastes: Social class and young people's technology use. Information, Communication & Society, 11(7), 895–911. doi:10.1080/13691180802109006

OECD. 2022. PISA 2022 Results, Bulgaria. https://www.oecd.org/en/publications/pisa-2022-results-volume-i-and-ii-country-notes_ed6fbcc5-en/bulgaria_29d65f4b-en.html

Petkova, K. (2022). Digital technologies: A field of new opportunities or an obstacle for the personal and professional realization of persons from the Roma community. Knowledge - International Journal, 55(5), 973–978. https://doi.org/10.35120/kij5505973k

Robinson, L., Winborg, Ø., & Schultz, J. (2018). Interlocking Inequalities: Digital Stratification Meets Academic Stratification. American Behavioral Scientist, 62(9), 1251-1272. doi:10.1177/0002764218773826

Robinson, R. (2009). A taste for the necessary. Information, Communication & Society, 12:4, 488-507, doi: 10.1080/13691180902857678

Rotta, T. N., & Teixeira, R. A. (2019). The commodification of knowledge and information. The Oxford Handbook of Karl Marx, 379-402.

Stata Manual. (2019). Stata Structural Equation Modelling Manual 16. Stata Press, 4905 Lakeway Drive, College Station, Texas 77845

Stoilova, R., & Haralampiev, K. (2022). Inequalities and Justice in the Balkans. A comparison between Bulgaria, Croatia, Montenegro, Slovenia and Serbia. Sociological Problems, 54(1).

Tomlinson, M., & Watermeyer, R. (2022). When masses meet markets: credentialism and commodification in twenty-first century Higher Education. Discourse: Studies in the Cultural Politics of Education, 43(2), 173-187.

Ucha.se. (2023). https://ucha.se/

Van De Werfhorst, H. G., Kessenich, E., & Geven, S. (2022). The digital divide in online education: Inequality in digital readiness of students and schools. Computers and Education Open, 3, 100100.

Zdravkov, S. (2022). Delegated Budgets and Educational Inequalities. Критика и хуманизъм, 2(57), 101-117.

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