REVIEW

of dissertation for acquiring an educational and research degree "Doctor"

Field of higher education: 3. Social, Economic, and Legal Sciences

Professional area: 3.1. Sociology, Anthropology and Cultural Studies

PhD program: Sociology

PhD student (full-time): Raya Stoyanova Georgieva

Thesis Title: Digital Technologies and Educational Inequalities in Secondary Schools in Bulgaria

Supervisor: Prof. DSc. Pepka Boyadjieva

by

Prof. Tatyana Ivanova Kotzeva, PhD, IPHS-BAS, appointed as a reviewer in the Scientific Jury by Order RD-38-397/12.07.2024 of the Rector of Sofia University "S. Kl. Ohridski" Prof. Dr. Georgi Valchev

Brief biographical data of the PhD student

Raya Georgieva (Mihaylova) graduated with a bachelor's degree in Sociology at Sofia University "St. Kliment Ohridski" (2016) and a Master's degree in Sociology at the University of Utrecht, the Netherlands (2018). From 2018 to the present, she has been working as Head of Strategic Planning at Junction Bulgaria. For the last 10-12 years, she has had impressive professional experience participating in over 30 international and national projects as an evaluator, expert and researcher. I will name just some of the organizations such as UNICEF, UNICEF-Innocenti, Eurochild, SOS International, Terre des Hommes, etc., as well as large-sized national NGOs such as Trust for Social Achievement, America for Bulgaria Foundation, For Our Children Foundation, Parents Association and many others.

Despite the thematic diversity, a significant part of the projects relate to the educational field, early childhood development and care, child and educational policies, youth employment and other topics gravitating around the topic of the dissertation. The accumulated experience in collecting, processing and analyzing quantitative and qualitative data, writing reports and presenting at national and international forums, as well as implementing intensive international communication

builds the profile of Raya Georgieva as a high-quality young sociologist with huge prospects for future research work. She also has an impressive range of other skills – digital, organizational, communication, foreign language, etc.- completing her profile as a highly qualified, active, engaged young person.

General characteristics of the dissertation and accompanying documents

The dissertation titled *"Digital Technologies and Educational Inequalities in Secondary Schools in Bulgaria"* is 210 pages long, including 5 graphs, 6 figures and 1 table. The content is structured in an introduction, 3 chapters, a conclusion and a bibliography containing 161 sources, of which 59 are in Cyrillic and 102 are in Latin. The volume also includes 3 Appendices with the author's empirical research tools. The documents accompanying the dissertation include a Reference for Compliance with the National Minimum Requirements for the Doctoral Degree, which are covered, a Declaration of Originality of the Dissertation Research, a list of 3 publications and the publications themselves, diplomas and CV.

Topical research, knowledge of the problem, methodology

The dissertation is dedicated to a focal problem in the sociology of education, namely how secondary education in Bulgaria re/produces social and educational inequalities through the introduction of digital technologies, particularly the electronic diary in the educational process. Many international and national studies show that Bulgaria is in the top ranking of the countries with the greatest educational inequalities and the large differences in students' academic achievements correlate mostly with the socio-economic status of families. Knowing very well the available empirical experience for the Bulgarian educational context, the PhD student successfully wedges herself into the paradigm of social and educational inequalities by formulating an innovative topic for the Bulgarian sociology of education on digital inequalities and social exclusion through the example of the non/application of the electronic diary. The implementation of digital technologies in school education is considered through the application of two technologies: the electronic diary and digital platforms for distance learning, introduced during the COVID-19 pandemic. Three aspects of technology are discussed from the point of view of 1. access to the resources, 2. control over students by teachers and parents, and 3. communication between parents, teachers, students and principals. The research problem, the main goal, the tasks, the subject and object of the study, as well as the research hypotheses, are clearly and precisely

formulated. Although the main direction of the PhD student's thinking is to investigate the impact of ICT through the creation of new digital inequalities in the learning process as originating from the socio-economic status of the student's families, the PhD student also suggests a different hypothesis (the third hypothesis) – an idea for reducing educational inequalities but in conditions of a more comprehensive transformation of the educational process/field.

In the methodological aspect, the qualitative methods chosen by the PhD student: semi-structured interviews and focus groups with principals, teachers, parents, students, and representatives of the Shkolo, as well as thematic analysis of digital data from the forum of BG Mama are relevant to the research goals and objectives. The well-thought-out design of the schools in the sample is evident, as well as compliance with the ethical standards of the study. The analysis of qualitative data is quantified using Nvivo software, which allows for coding and typology of data and visualization in figures. In general, the data from the empirical study are presented with exceptional accuracy.

As a good characteristic of the research work, I also note the author's reflection on the limitations in the research tasks, the design of the empirical research and, accordingly, the application of the conclusions, highlighting the author's contributions clearer.

Characteristics and Evaluation of the Dissertation and its Accomplishments

The first part *"Digital technologies in education – a helpful tool or an active participant in the educational process"* has an introductory character on the context of the entry of ICT into the life of the young generation, also called the "digital" generation. The use of ICT in education can be considered a helpful tool for a new organization of the learning process, and the PhD student defends the position that beyond its instrumental nature, ICTs would have added value when they change attitudes and motivations in the educational environment at the value level (p.20). Various functions of ICT in education are indicated: collection, processing, dissemination of information, and creation of own content, with special attention paid by the PhD student to the communicative function, to the creation of knowledge and skills for a better understanding of the material, for creativity, for independent work, for teamwork, for greater control, etc. planned and unplanned effects that can be part of the hidden curriculum. Along with the ICT's positive effects, the author summarizes studies that register negative effects on the learning process such as stagnation/worsening in learning outcomes, distraction, superficial work, etc. In conclusion, the

PhD student concludes that the positive or negative impact of ICT as a direct process cannot be discussed, and there is a need for a far more detailed and sensitive analysis of their functioning in the field of education. The need for an innovative approach is also defended in proving the link between ICT and social and educational inequalities – a gap that will be unfolded in the following parts.

The second part *"Theoretical turning points"* presents the theoretical frameworks through which the author's empirical research will be analyzed. In the first section, the PhD student summarizes Pierre Bourdieu's influential theory of education as a mechanism by which social stratification and social inequalities are maintained and reproduced, and through which – ultimately – opportunities for social mobility and equal chances are stagnated. Through the description of key concepts such as "habitus", "field", "economic capital", "cultural capital", and "social capital", the logic of the interactions between the accumulated potential through family socialization and its translation into assets or deficits in the educational process is deduced. Thus, education as a field of interactions between agents with different capitals is not only based on the different starting positions between children, but it affirms and deepens socio-status differences and inequalities by transforming them into educational inequalities. Raymond Boudon's theory of the primary and secondary effects of the processes of translating social inequalities into educational ones, the former related to school achievements, and the latter to parental choice of school, is also presented. In addition, the concept of "technical capital" is introduced as a link between technology and other social agents and it is thought of as a type of cultural capital. Data from international studies (PISA) are presented, which confirm the high degree of segregation and horizontal differentiation in school education in Bulgaria, where there are the greatest differences between the types of schools and the educational achievements of students stemming from their socio-status background.

The second section of the second part presents the theoretical concept of Bruno Latour et al. for the actor-network. This is an innovative theory for understanding the social not as a static material, but as a dynamic network of associations and connections between actors. The key is the concept of "non-human actors" /"non-humans"/ and the assembly of networks of humans and non-humans.

Looking for the genesis of the concept of assemblage, it is good to situate the theory of the actor-network among a wide range of constructivist theories - M. Foucault, ethnomethodology and I would especially note the theory of the famous American philosopher and feminist Donna

Haraway about the cyborg as a human-machine hybrid (D. Haraway "Manifesto of the Cyborg"). These theories give a new understanding of technologies in the world of modern man not as external, auxiliary tools, but as co-existing, "our ontology", simultaneously fictions, constructions, on the one hand, and material realities, on the other, united in human intimacy. The PhD student elaborates on the key concepts in the theory of the actor-network – "translation" with its 4 stages: "problematization", " interessement", "enrollment" and "mobilization"; "inscription", "assembly", "network", "intermediaries", "mediators", etc. reflecting on their explanatory potential for explaining situations of co-existence of humans/agents and non-humans/technologies/material entities. The heuristic potential of this theory is enormous and is applied in various fields of knowledge – in the study of the life of a scientific laboratory, as in the case of Latour et al., I would also add in the study of reproductive technologies and their "ontological choreography" (C. Thompson, S. Franklin), as well as in studies of education. An overview of research related to the introduction of ICT is made with an emphasis on various elements of the learning process /learning activities such as online courses, standards, portfolio creation, networks of human and non-human actors/, which apply the theory of actor-network for the interpretation of innovations and their meaning. The theory's innovative potential for understanding of social and educational inequalities related to the differences in the economic, cultural and social capital of parents, inequalities in terms of material and symbolic resources between schools by types, by regions, etc. is also emphasized. The essentials of the new type of digital inequalities according to the quality of technology, autonomy, skills and goals of its use and social support are also considered. Digital literacy and skills are seen as part of cultural capital.

Part three *"Problematization of education. Digital technologies, construction of the educational environment and re/production of educational in/equalities"* presents the results of the author's empirical study. A very good impression is made by the well-thought-out design of the study, including three cases of schools, subordinated to the hypothesis of the intersection of the criteria by type of school /general schools vs specially profiled schools/; by type of region /Northwest, Southeastern, Southwest/, by settlement /village vs big or regional city/. Other criteria differentiating the macro-context refer to the level of education, unemployment and ethnic composition of the population in the respective regions/municipalities, and the scores of state matriculation exams. The three studied school cases suggest different social positions and habituses of the participants in the educational field – parents, teachers, principals and students.

The focus of the study is on the electronic diary and digital platforms for learning during the COVID pandemic as non-human actors in the network of relationships and interactions with human actors related to education. The object of research is access to electronic resources, the functions of control and communication between network participants, as well as the possibility of creating new assemblages. In the case of the "lagging school" located in a village in northwestern Bulgaria, translation, interessement, and enrollment do not really work due to the alienation of the participants, especially parents and students from education. An example of this alienation is the fear of principals to provide computers to students from vulnerable families at home, as they will not be used for their intended purpose, i.e. for educational purposes. The lack of digital literacy among parents and some teachers turns technology into a burden and unnecessary. The limited economic and cultural capital of the families from which the students come produces new barriers through the introduction of technology. In an environment of poverty and serious material deprivation, the school began to be modified into a social institution (according to M. Yakimova), which provided primarily social services for children – to be fed, clothed, transported to school, etc. This is an important feature of the profile of schools with students from marginalized populations. The second case of a "medium type of school" with a medium type of indicators and mixed socio-economic profiles, a vocational high school located in a large city, shows a greater degree of translation and interessement in the use of the electronic diary by most parents, but there are parents who do not use it. The diary mainly serves as an information tool about grades and other school events, partly for control, and the communicative role of the electronic diary is severely limited, although school authorities facilitate access to it through resources where needed. The third case is of an "advanced school", an elite foreign language school in a large regional city. The electronic diary is an intermediary in the learning process, but mostly as information and control and with limited application for communication despite the successful translation and interessement in the new technology. In the first two cases - of failure and partial success - technology produces new digital inequalities.

The conclusion part summarizes the main conclusions about ICT functioning not just as an assistance tool, but as an element (non-human actor) of a complex network of relations between actors. The successful passage through the four stages of their implementation, i.e. their value comprehension, is related both to the capitals of the parental family and to the economic and cultural capitals of the school environment - principals, teachers, and facilities. Both theoretical

frameworks are valid to explain the results obtained – inefficient use of technology, limited real participation of students and parents in the educational process and consolidation of existing and production of new inequalities in secondary education in Bulgaria.

The list of 7 self-assessed accomplishments described in the abstract accurately and correctly outlines the added value of theoretical generalizations and the application of the explanatory potential of theories, as well as of empirical results in the field of sociology of education.

Critical comments and recommendations

Regarding the subject content. The dissertation sets a spirit of pessimism and even impasse about the current and future state of educational practices in Bulgaria, which separate, distinguish, even exclude and marginalize children from families with low social status. Technology, instead of minimizing, catalyzes social and educational inequalities. Is there a way out of this situation and can education take on its other role – as a leveling mechanism concerning major social differences and creating a more equal learning environment for all students? Despite the limitations of the context, can educational know-how be borrowed and effectively applied in Bulgaria from less stratifying educational systems such as those in the Scandinavian countries, for example Finland?

It seems to me that the concept of 'quality of education' is not sufficiently present as an explanatory mechanism in the results. It does not have a universal meaning and obviously the actors from different schools share different visions of quality, which predetermines the differences in interest and motivation for education, which is actually not sufficiently explicated in the dissertation.

Regarding the electronic diary as a new technology. Are its communicative functions not initially limited /and additionally limited by the principal, teacher, etc., as the PhD student points out/? The electronic diary is in competition with other forms of fast communication such as Viber, chat, etc. Are its communicative functions overestimated and to what extent, for example, through this technology, the school can strengthen communication between parents, students and teachers on important topics such as bullying, violence, and exclusion, and stimulate the building of communities of shared interests?

Regarding the methodological part. The method of analysis using BG Mama forums has been applied with limits and the author has presented/evaluated it as a main method along with

interviews and focus groups. As a recommendation, ethnographic research in the future would further deepen empirical observations about how networks and actors work.

Assessment of the quality of the PhD student's scientific publications

The PhD student has published 3 articles, all three in English. They are in the following journals: *Critique and Humanism*, 2022, 2(57), 135-146, in *the collection of the Bulgarian Society for Comparative Education "Towards the Next Epoch of Education"*, 2022, v. 20, 159-165 and in the international journal *FACTA UNIVERSITATIS-Philosophy, Sociology, Psychology and History*, 22(02), 107-126. The publications discuss the main theses developed in the theoretical part and empirical research results. The abstract presents sequentially the structure, the main theses and the results of the dissertation.

CONCLUSION: The presented dissertation *"Digital Technologies and Educational Inequalities in Secondary Schools in Bulgaria"* is a completed research product that shows the high level of professional knowledge and skills of the PhD student to independently collect, systematize, analyze and summarize theoretical concepts and empirical data by formulating and arguing her original conclusions in the field of sociology of education. I am completely convinced to vote for awarding Raya Stoyanova Georgieva the educational and scientific degree of "Doctor" in Professional Field 3.1. Sociology, Anthropology and Cultural Sciences, PhD Program Sociology.

24th September 2024

Sofia