BULGARIAN TEACHERS AND THE DIGITIZATION OF EDUCATION

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ABSTRACT

The digital transformation of traditional education leads to a change in the classical idea of the content and structure of the teacher's professional competence. The ability of teachers to teach with high quality is undoubtedly a key and very significant part of it, but in the conditions of the dynamic change of the environment – both in the real classroom and also in the increasingly used virtual one, it changes dynamically and develops with the help of new funding. The last three years, after March 2020, have created favorable conditions for enriching the pedagogical competence of teachers with a set of digital tools. Digitization has led to the enrichment of the technological toolkit of Bulgarian teachers with online-based educational resources, but also with authored exercises, assignments, tests, products and programs for gathering information about knowledge and opinions.

The paper presents the results of three of the authors author's empirical studies conducted in 2018, 2020 and 2022, and related to the use of electronic resources for educational purposes.

Keywords: *teachers, education, digitization*

INTRODUCTION

The teaching profession is ancient one of the oldest, but the interest in it is currently associated with the awareness of society of the role of the teacher in the formation of the value system and cognitive culture of the younger generation in conditions of rapid change of the social and especially technological environment. New demands are being made to the teacher, there are new expectations, and the extent to which the teacher can satisfy them depends on a number of objective and subjective factors. According to the author, teachers' ability to teach with high quality is the core of teachers' professional competence [7], but in the conditions of accelerated digitalization of education it needs to be enriched and conceptualized in terms of the process and outcome of educational activities with students.

Preparing teachers to implement the digitalization of education

The quality of a teacher's work is directly dependent on a number of prerequisites, among which the following are the leading ones: the personal

characteristics related to the suitability to exercise this profession; his basic professional-pedagogical training received at the university; the motivation for work and, last but not least, the continious professional development. The problems of teacher training and qualification are the focus of both academia and the general public, because in reality this concerns parents, pupils, employers and other social partners and institutions.

It is for these reasons that it is necessary to analyse expectations about the nature of teachers' professional-pedagogical competence. An attempt at structuring according to the author includes: "1. Knowledge of the field of science from the bosom of which the subject to be taught is constructed. 2. Psychological knowledge and skills to work with the age category of students. 3. Knowledge of pedagogical sciences and educational technology, and methodological skills. 4. Communication competence to implement an effective educational process in the classroom. 5. Managerial competence to manage the environment and its participants" [6].

This model is based on the understanding that professional preparation is fundamental for the formation of professional competence is also enriched from the positions of the competence approach, described in the regulations on the preparation process [4] and on the qualification [5].

Special attention in both ligislative acts is paid to the training and qualification of teachers for the use of information and communication technologies in the educational process. In the list of compulsory subjects under the Regulation on the State requirements for the acquisition of professional qualification as a teacher, a new compulsory subject "Information and communication technologies in education and work in a digital environment" replaced "Audio-visual and information technologies in education". However, the following questions arise: Who teaches these courses and what is the curriculum? What hardware and software are the student teachers working with? Given academic autonomy, it is possible to have a huge variety both in terms of the content of the curricula and their practical implementation in the teaching process. As a result, teachers trained at different universities may have a different sets of knowledge, skills and competences for working with digital educational resources.

There are problems related to the model for the preparation of future teachers in universities, which, despite the normative framework, is not unified in terms of content. Also the teachers themselves have different levels of digital competence. To address these issues, the National Programme "Improving the competences of teachers in public higher education institutions preparing future teachers" is being implemented. Teachers are trained in two directions - digitalization through ICT-based innovative educational technologies and application of competency-based approach.

Qualification of teachers in digital technologies used for educational purposes

The issue of teacher qualification has acquired new dimensions since the adoption of the Law on Pre-school and School Education and its specification in the Regulation on the Status and Professional Development of Teachers, Principals and Other Educational Professionals. Serious competition has emerged on the education market between universities training teachers on the one hand and commercial companies and NGOs offering continious professional development training courses to teachers on the other. The latter two (for-profit and non-profit legal entities) go through a procedure for approval of programmes by the Ministry of Education and Science and registration in the Information Register, while universities can only teach on the basis of programme accreditation in higher education field 1. Pedagogical Sciences.

This has led to the offering of a huge amount of subjects, courses, programmes and subsequently to the "overqualification" of teachers. In the Information Register of the Ministry of Education as of September 2023, there are nearly 5200 approved subjects, among which those related to the application of information and communication technologies, digital resources and online learning are over 1000.

Against the background of the huge supply, there is a worrying lack of connection with teachers' interests and subsequent formal participation, for which there is publicly available information. The choice of topics for qualification courses is directly linked to the management style of the principal, the organisational culture, the type and size of the school/kindergarten, the location and a range of other factors.

There is a lack of relevance to appraisal, but there is also insufficient relation to the students' evaluation of the change in teachers' performance as a result of the new knowledge, skills and competencies they have acquired following participation in various training courses.

The latter factors and phenomena have been investigated in a nationally representative study conducted in 2019 by a team from the Faculty of Education at Sofia University “Sv. Kliment Ohridski” with 1002 high school teachers. It was found that 50% of the teachers indicated that they had participated in training on. As a result, 45% considered that they had developed their skills in integrating ICT in teaching to a very high and high degree; to a medium degree – 35% and to a low and very low degree – 14% and not developed – 5%. ... 60% of their students think that their teachers present the learning material clearly, including using ICT, but only 52% think that they present the learning content in an interesting way using ICT, 25% could not judge, and just over 22% did not think so [3].

The results show that in 2019, only half of the teachers have participated in training to enrich the pedagogical toolkit with digital competencies and nearly 80% of them report a development that is also noticed and appreciated by slightly more than half of their students.

Teachers' self-assessments of the use of electronic resources for educational purposes

In order to diagnose the digital competences of Bulgarian teachers, we conducted a series of empirical surveys with different tools in the period from the end of 2018 to mid – 2022.

The first study aims to investigate teachers' use of online-based educational resources in the process of preparing and delivering lesson work. It was conducted between November and December 2018 using a questionnaire distributed on paper. It involved 240 teachers, from all over the country, who were included in qualification courses on various topics, conducted within the framework of the project BG05M2OP001-2.010-0001 "Qualification for Professional Development of Pedagogical Specialists" of the Ministry of Education and Science, funded by the Operational Programe "Science and Education for Smart Growth" 2014-2020.

The first question in the study is related to participation in courses on the use of electronic resources for educational purposes. It was established that "64% participated ... , and the remaining 36% did not. However, the data show that those in the second group also use the resources with the same frequency and there are virtually no major differences in the results shown by the two groups – trained and non-trained" [8].

Teachers then answered questions about their access to online-based educational resources, including dictionaries, reference books, libraries, blogs, platforms, game and exercise software, tutorials, Wikis, presentations, social networks, etc. Responses include information on the frequency with which teachers use these resources in preparing for and delivering lessons.

The results show that teachers use presentations and videos most frequently in their lesson work and less frequently software for skill formation and assessment purposes. They visualize well in teaching, but still not all of them do. The majority are users and fewer are creators of e-learning resources, apart from presentations, which almost all do. The culture of sharing is still at a low level and they do not know well the possibilities of combining multimedia products to increase the quality of the learning process. Social networks are the most commonly used sources of electronic resources for educational purposes, with Wikipedia and Wiki type resources coming in second [8].

The second study was conducted in April 2020 to investigate pedagogical communication in distance education in emergency conditions. The participants

in this online survey were 1345 educational professionals working in different types and kinds of schools, mainly women (95%) from all over Bulgaria.

Again, teachers were asked if they had participated in qualification courses for working with online-based educational resources. This time it was found that 55% had participated, with 21% having done so as part of an in-school qualification and 34% as part of so-called external training for the award of qualification credits.

The second significant issue regarding digital competences relates to their prior preparation for using online platforms or programs that they had to start working with after schools close in mid-March 2020. Only 14% had preparation thanks to participation in qualification courses; 10% because the school they work in has one and another 10% because they worked with platforms within projects. The remaining 66% had no prior training. This probably explains the stress and the great difficulties that Bulgarian teachers faced in the initial period of the introduction of distance learning in an electronic environment due to the closures that resulted from the measures related to the COVID-19 pandemic. It is worth noting that they have dealt with this challenge quickly and by the beginning of April 2020 they have already found many opportunities to carry out virtual pedagogical communication, to present the learning content and to assign independent and homework work. This has been realised through the use of a wide range of educational websites and portals providing educational resources, most often structured by subject and/or topic; videoconferencing and two-way communication platforms; programs for creating educational resources – video, text and other multimedia materials; programs for creating tests and other materials for assessment purposes.

Bulgarian teachers are very quickly changing from users to creators of digital resources. 841 indicated that they create their own tests, worksheets, exercises, etc., 862 use e-textbooks, but 1190 combine e-learning resources created by them with those found on the Internet [9].

Based on the analysis of the results of this study, it can be concluded that the majority of teachers exhibit high levels of professional competence and through own initiative and creativity find, select and use online-based educational resources to adapt learning that is conducted in an electronic environment in order to maintain its effectiveness.

The third survey was conducted online between April and June 2022 and the total number of participants was 800, of which 339 were educational professionals working in kindergartens and 461 working in schools, of which 44% (201) were in primary classes (I-IV), 29% (134) in secondary (V-VII) and 27% (126) in high school (VIII-XII).

Among the main objectives was to investigate the extent to which the closure of educational institutions and the frequent replacement of face-to-face learning with online affected their use of digital technologies and online-based educational resources.

In the context of this analysis, the answers to two questions are noteworthy: How would you define your digital competences for working with online-based educational resources now compared to their level two years ago? and How would you define your skills for creating digital educational resources now compared to their level two years ago?

For teachers from kindergartens, it was found that 31% felt that their digital competencies had improved significantly and 53% felt that they had improved, making a total of 84% of those who took part in the survey. This allows to conclude that they have enriched their didactic toolkit with new digital tools, methods and technologies.

About in-school teachers, the self-assessment shows that according to 41% their digital competences have improved significantly and according to 54% of respondents these skills have improved. The cumulative percentage is 95, which is 11% more than kindergarten teachers. This is explainable in terms of the different educational content load and the higher demands on distance learning conducted in an electronic environment. Online learning over the two years (2020-2022) leads to a significant improvement, which is the result of training as well as self and peer learning within in-school qualifications.

For the second question, there are also marked differences between the two groups of teachers. 24% of respondents (80 people) said there had been no change in their skills, but 53% reported an improvement in their ability to create digital resources. The remaining 23% were confident that there had been a significant improvement. Again, it is possible to sum up those reporting improvement to a total of 76%, three quarters of all participants.

For school teachers, 33% self-assessed that their skills had improved significantly, 56% thought they had improved and 11% thought there had been no change. 89% reported an improvement, which is again higher compared to child teachers [10].

The results of the self-assessment show the development and enrichment of Bulgarian teachers with skills to find, use and create digital educational resources.

CONCLUSION

The teaching profession is undergoing a major transformation in terms of key professional competencies on the one hand; but on the other hand, there are

changes in public opinion/attitudes towards it. In terms of professional competences, the inclusion of digital is no longer questionable or objectionable.

Digital competences "are among the eight core competences and refer to criticality and confidence in using the full range of digital technologies for information, communication and basic problem solving in all aspects of life." [1]. In terms of teachers, they are interpreted in "six areas of development, including professional environment; creating and sharing digital resources; managing the application of digital tools; assessment; empowering learners and improving their digital competencies." [2]

Serious questions remain about the quality of preparation of prospective university teachers in the compulsory subject of “Information and Communication Technologies in Teaching and Working in Digital Environments” and about the choice or otherwise of the two electives proposed in the Regulation on the state requirements for the acquisition of professional qualification "teacher".

The results of the three surveys conducted in 2018, 2020 and 2022 allow to draw the general conclusion that the closure of educational institutions – schools for a longer period of time and kindergartens for a shorter one due to the COVID-19 pandemic stimulates Bulgarian teachers to implement at a very fast pace a digital "revolution", which for a part of them was stressful and difficult due to the lack of prior preparation. The conclusion is that the results of digitalisation at secondary level have been satisfactory.

The enrichment of digital competences in terms of the use of online-based educational resources and, more importantly, the acquisition and improvement of self-development skills are key to increasing children's and students' motivation to learn. More generally, this contributes to improving the quality and outcomes of the educational process with the digital generations that are within the scope of the Bulgarian education system.

It remains a debatable question to what extent these skills will continue to develop and whether they will have sustainability as a basis for continuous improvement towards the new demands of the social and technological environment. It is also an open question as to the expectations of digital competences of teachers from students, their parents, employers and last but not least the public institutions that invest in education.

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