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PHYSICS AS A SUBJECT IN THE BULGARIAN SCHOOLS UNTIL THE END OF THE WORLD WAR I

A. VAVREK, G. KAMISHEVA and M. BORISOV

Institute of Solid State Physics, Bulgarian Academy of Sciences,
72 Tzarigradsko Chaussee, 1784 Sofia, BULGARIA

Abstract. In the paper the impact of all important changes in the educational concepts and ideas of the Bulgarian political authorities on the Bulgarian school curricula between 1878 and 1925 is investigated. Special attention is paid to the quota of natural sciences and physics in the curricula. Three main pairs of opposing ideas about the aims of the Bulgarian school are shown to have dominated during the period.

1. INTRODUCTION

Physics was introduced in the Bulgarian school as early as in the 1820s, during the Bulgarian Renaissance. It was considered a most important school subject. The first Bulgarian textbooks in physics and cosmography were published already before the Crimean War. In 1870s physics was taught at a quite high level in the new Bulgarian full secondary schools.[1]

In 1878, just after the restoration of the Bulgarian state, a centralized system of education was established in the country and the development of the national school was put into dependence on the educational concepts and ideas of the political authorities.[2,3] The purpose of this paper is to reveal the impact of all the changes in these concepts and ideas on the Bulgarian school curricula until 1925, especially on the quota of physics in these curricula. Only intermediate and secondary school will be considered.

Three main pairs of opposing ideas about the cardinal aims and trends of the Bulgarian school can be easily identified to clash in the development of our educational system during this period.

2. MODERN OR CLASSICAL EDUCATION

The opposition between the modern and classical education, being very intense in some European countries with classical educational traditions at the end of 19th and the early 20th century, has never been a real problem in the development of the Bulgarian school. The pronounced interest in physics and other "positive" sciences, including mathematics, together with a nearly religious belief in science as a kind of lever for increasing the nations' well-being, is an important feature of the Bulgarian National Renaissance. These ideas gave the modern education a crucial advantage in our country after the Liberation. Up to 1920s, when knowing

Latin was made a prerequisite for studying medicine and law at the Sofia University, the classical secondary schools remained an outsider in Bulgaria.[4]

Physics and other natural sciences (including mathematics) were well represented in the Bulgarian school curricula between 1878 and 1925 (Fig.1). The proportion of time allocated to physics, compared to all natural sciences (including mathematics), was also at a quite high level

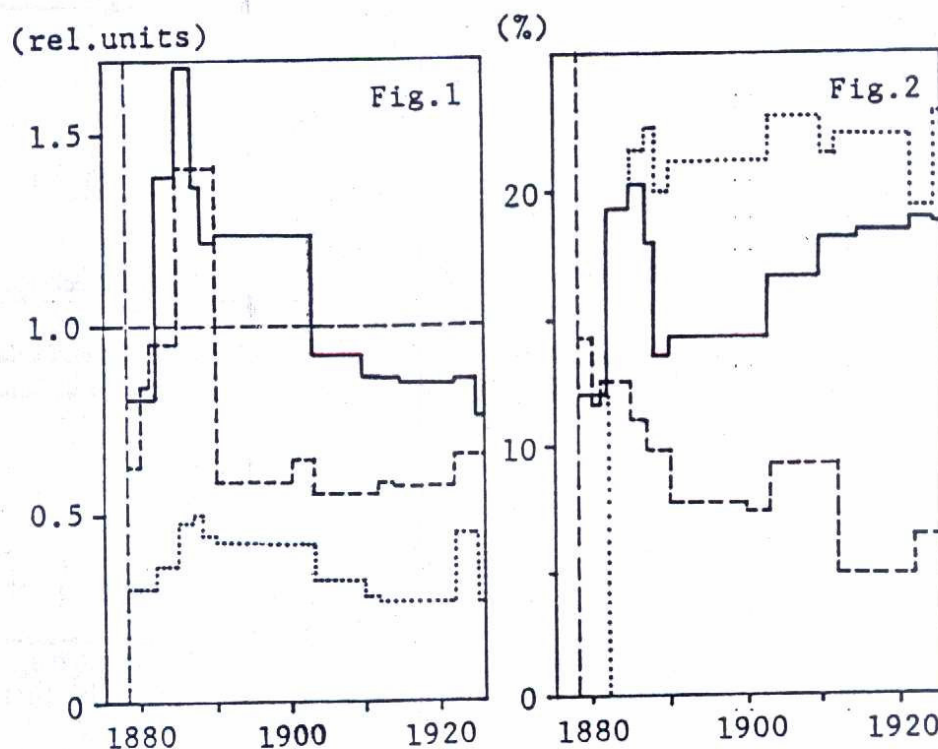


Fig.1.- Relation between the number of hours for natural sciences (including mathematics) vs this number for the humanitarian & social disciplines in the boys' secondary schools (dashed line - lower course, solid line - upper course of the modern schools, dotted line - upper course of the classical schools)

Fig.2.- Proportion of hours for physics vs the total time allocated to natural sciences (including mathematics) in the boys' secondary schools (dashed line - lower course, solid line - upper course of the modern schools, dotted line - upper course of the classical schools)

during that time, with the only exception of the four-years period just after the Liberation of the country, because the Provisional Russian Administration did not include physics in its curricula for the new Bulgarian classical secondary schools. (See Fig.2 and Table 1.)

3. ENCYCLOPAEDIC OR CIVIL & NATIONAL EDUCATION

The Bulgarian school curricula between 1878 and 1887 were dominated by the National Renaissance belief in "positive sciences". The climax of this tendency was reached in 1885, when

the curricula were prepared at an all-Bulgarian teachers' meeting. As many as 17.5 hours a week were allocated to physics in the boys' full modern secondary schools in these curricula (see the Table.) The quota for the other natural sciences was also significantly increased (Fig.1).[5]

After 1885 however the Reunification of the Bulgarian state (i.e. the establishment of the Union of Eastern Roumelia with the Bulgarian Principality), followed by a series of dramatic events, severely changed the political situation in our country. As a result, new goals were set before the Bulgarian school - instead of providing encyclopaedic general education it was entrusted with the task to give predominantly civil and national education. *"The more possibilities for learning we provide to our people, the more hopes we can put on its awareness of its interests"*. In this statement of Stefan Stambolov the essence of the "national" educational policy of the First "Stambolovian" Government (the Government of the National Liberal Party, 1887-1894), is concentrated.[3] During the first three years of this government the structure of the Bulgarian school curricula was significantly modified by a severe reduction of the quota fixed for natural sciences (Fig.1). The proportion of time allocated to physics was also drastically cut down (Fig.2). In 1890 only 10 hours a week were allocated to physics in the boys' full modern secondary schools. (See Table 1.)

Table 1.- Number of hours for physics in the boys' secondary schools

Course	1878	1880	1881	1882	1885	1887	1888	1890	1903	1910	1912	1914	1922	1925
Lower	5	(3)	4	4	4.5	4	4	2	2	2	(1)	(1)	(1.5)	(1.5)
Upper:														
Modern	4	4	4	11	13	11	9	8	8	10	10	10	10	9
Classical	0	0	0	6	8	9	7	7	6	6	6	6	7	6
Semiclassical-	-	-	-	-	-	-	-	-	-	8	8	8	8	6

In 1903 the Second "Stambolovian" Government (1903-1908) once again reduced the quota of natural sciences in the curricula. Even in the upper course of the boys' modern secondary schools it was made smaller than the quota of the humanitarian and social disciplines. However the time allocated to physics was not changed and as a result the part of physics was increased in comparison with other natural sciences.

4. GENERAL AND/OR VOCATIONAL EDUCATION

Aroused for the first time in the early 1880s, in the second half of 1890s another controversy began to dominate the development of the Bulgarian educational system - the controversy between the supporters of the general and vocational mass school.[6] The depression of the late 1890s stood by the antagonists of the wide-spread general education. The intermediate three-class schools (considered lower course of secondary schools, but widely spread as separate schools) became the apple of discord. Several ministers of education tried to pass through the Parliament their educational acts, making efforts to convert most of these separate schools into (pre)vocational "main" schools - upper course of the elementary general school. Measures against the wide spreading of general secondary education were also proposed. Only the frequent cabinet changes during the depression have preserved our general school from some hasty reforms. (Meanwhile some important laws concerning the vocational schools were passed between 1895 and 1906, moved by the Ministry of Commerce and Agriculture, without a real coordination with the Ministry of Education.)

In 1906, when the economic stabilization in Bulgaria had already begun, the Second "Stambolovian" Government found a settlement of the problem by a compromise. The three-class schools were transformed into an upper stage of the elementary school with a curriculum, practically identical to that of the lower course of the secondary schools. An attempt was made however to bring these curricula closer to the practical needs: natural history, physics, chemistry and handwork were requested to be taught *"with respect to their application in agriculture, commerce, industry and home life"*. Possibilities were created for a parallel development of the general and vocational school, both of them based on a seven-years elementary general education.

In 1909 the same principles were included in the new Bulgarian Educational Law, prepared by the Democratic Party.[7] A new separate intermediate school ("progymnazia") was introduced in the Bulgarian educational structure, replacing the upper course of the elementary and the lower course of the secondary school. Elements of physics, chemistry and other natural sciences were envisaged to be taught within the frames of a combined subject *"natural history"*. The time allocated for physics in the new curriculum dropped down to only one hour weekly.

In the modern secondary school however, thanks to the prolongation of the course of all secondary schools by one year, the quota of physics was increased by one hour and the proportion of physics grew up too, notwithstanding the continued falling down tendency in the relative part of natural sciences in the curriculum.

In 1919, at the end of World War I, the Bulgarian Peoples' Agrarian Party formed its own government.[8] In 1921 the agrarians carried out a number of significant reforms in the Bulgarian educational system, following their conceptions of manual labour being a major element in the upbringing and education of young people. The changes in the structure and in the curricula increased the proportion of time devoted to natural sciences without changing significantly the number of hours allocated to physics. In 1923 however the Agrarian Government was overthrown by a coup d'état and nearly all its reforms were canceled, including most of the reforms in the educational system.

5. TEXTBOOKS

The first Bulgarian textbook in physics was published by N. Guerov in 1849. Three more textbooks were created before 1878 and two of them were used in our schools during the first several years after the Liberation. After the stabilization of the curricula for the three-class schools in the early 1880s (See Table 1.) new textbooks in physics for these schools began to appear. In the secondary school however such a stabilization established ten years later. That is why the first new Bulgarian textbook in physics for the secondary schools was published as late as in 1895.

In 1897 Textbooks Regulations were issued by the Ministry of National Education. Only textbooks approved by the Ministry were allowed to be used in the schools. Writing and publishing textbooks however were left to the private enterprise and the number of textbooks for a particular school subject was not limited at all. The Teachers' Councils of the schools were entrusted with the choice of textbooks for their schools. As many as 7 intermediate school level and 4 secondary school level textbooks in physics were included in the first list of textbooks approved by the Ministry of Education, published in 1900.

The possibility of teachers' choosing textbooks for their schools from a variety of textbooks approved by the Ministry of National Education remained a characteristic feature of the Bulgarian educational system until the end of World War I.

6. CONCLUSIONS

Being introduced into the Bulgarian schools as early as in 1820s, during the National Renaissance, physics and other natural sciences were well represented in the Bulgarian school curricula from the Liberation in 1878 till 1925. Between 1878 and 1887 the quota of natural sciences and in particular of physics in these curricula was very impressive. Afterwards, because of the dramatical changes in the political situation in Bulgaria after the Reunification in 1885, this quota was drastically reduced and the goal to give a "civil and national education" was set to the Bulgarian school by the political authorities. In the second half of 1890s the controversy between the supporters of the general and vocational mass school began to dominate the development of the Bulgarian educational system. The possibility of teachers' choosing textbooks for their schools from a variety of textbooks approved by the Ministry of National Education remained a characteristic feature of the Bulgarian school until the end of World War I.

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