THE PROBLEMS OF THE CONTENT OF
SCHOOL EDUCATION IN THE USSR

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In December 1964, a great and representative committee was formed in
the Presidium of the Academy of Sciences of the USSR and in the Pre-
sidium of the Academy of Educational Science, which took as its main subject
the contents of school education. Five hundred scientists of various branches,
representatives of culture and art and workers in education took part in it.
Its main task was to work out the development of new syllabuses and curricula
for all subjects in the secondary school. To prepare the draft of the curricula,
the committee was sub-divided into 15 smaller committees according to
subjects. These were headed by important representatives of science and
culture: Academician Kolmogorov (mathematics), Academician Kikoin
(physics), Academician (Mrs.) Mechkina (history), composer Kabalevski
(music), etc. Of course, already before this, our schools had some syllabuses
and curricula for all subjects and acquired some positive experience when
working with them. But at the time when this committee was formed, articles
by scientists, writers and teachers started to appear in the Soviet press, both
daily and professional, which criticized much in the curricula, especially
with regard to the fact that they lagged behind the present stage of develop-
ment of science and culture. In this respect, the most severe criticism was
raised against the curriculum for science and mathematics. The curricula for
humanities were charged with different types of insufficiencies. In the syllabus
of history the weak point was too much of concentrism, which led to such
things as the teaching of the history of the USSR on two levels: in the 7th and
8th class and then more deeply in the 9th and 10th class. The school course
in literature was criticized by writers, because too much time was devoted
to the analysis of literary works and their heroes. Therefore in individual cases
the living tissue of the work fell to pieces and the emotional education and
formation of the taste of the pupils were pushed into the background.

In this critical enthusiasm completely contradictory opinions were ap-
pearing, which from the point of view of school work could be characterized
as hyper-modern. More precisely a structure of curricula was offered for
the schools which could not be implemented even at university level. Thus,
there were suggestions that the school course in physics should be built on
the quantum theory and the theory of relativity from the very beginning, in
biology on the bases of molecular biology. We also noticed a requirement to
almost exclude descriptive geometrical material from school education and
to substitute for it the respective concepts of linear algebra, based on the
typical theorem “Sack Euclid”!

The committee on the contents of education considered it one of its main
tasks to define a reasonable relation between school education and the
requirements for the progress of science and culture. And this is why it had, so to speak, to fight on two different fronts: both against those who did not want to introduce almost any important changes in the curriculum and against those who voiced “strong” slogans which were not based on solid arguments, and which did not take into account the real conditions and perspectives of the development of schools. Approximately within a year after this committee was established, a first draft of the curricula was sent to a great number of scientific, educational and creative organizations and to individual personalities. This could be done so quickly only because the Institute of General and Polytechnical Education of the Academy of Educational Science had already started to prepare the draft for the new curricula before this committee was established. This institute worked on the first responses and recensions of this draft. I want to draw attention to the fact that a very detailed explanatory study was attached to the first drafts of the curricula. They included a short explanation of the suggested novelties. Already at the end of the first year of the work of the committee, about 2,000 responses and recensions of the draft were collected. Among the opponents of this draft there were also many teachers. They openly said that they would have to learn again, to a certain extent, before they were able to teach according to the new curricula. But opinions of this kind, though they were important, could not prevent our progress since the committee was persuaded that the stimulus which was given by these new curricula for better scientific qualifications of teachers was one of the most important arguments for the suggested reform. But it would not be correct to maintain that the criticism of the novelties came only from the lower levels of the educational structure, only from people who did not have the required scientific qualifications. We encountered thorough criticism, though its concern was not with the bases but only with details, in the Institutes and the Presidium of the Academy of Sciences of the USSR. The authors of the draft were asked to be more moderate in their suggestions. As a consequence of this criticism on the part of many scientific authorities in our country, the mathematicians had to exclude from the draft even very elementary information about the concepts and symbols of the theory of sets and mathematical logic, which they wished to include. Analogous simplification had to be made in the curricula for physics, chemistry, biology, etc. Frankly speaking, I must say that we do not regret this. It is necessary to remember, that the scope of knowledge and skills recommended for the secondary schools, though it should include everything which is really necessary for the preparation of a self-conscious and active builder of socialism, must not include anything useless, which would be an obstacle for the pupils when a compulsory secondary education is introduced.

It would take too long to speak about all the stages of the work of the committee. We will only say that, after the first discussion of the drafts in the Academy, approximately within a year, the committee submitted a revised
version of the drafts to the Academy of Science. The Presidium of the Academy accepted these projects. They were agreed upon by the Party and Government as a document “About Further Improvement of the Work of the Secondary Schools”. It was also published in journals of the respective teaching subjects so that a broad discussion of teaching could take place. Another year was necessary to work on some especially perplexing curricula (physics, mathematics) before the Ministry of Education of the Soviet Union approved them and established a firm procedure of implementation of these new curricula in the schools throughout the territory of the USSR. The complicated process of subsequent transfer of schooling to the new curricula will not be completed until 1975.

Among the most important suggestions is a shortened period of school attendance in the primary school from 4 years to 3 years. Educational experiments pursued for a number of years, and which have been growing in extent every year, have persuaded us that it is possible to rationalize the curricula, textbooks and teaching methods in the primary school in such a way that the previous attainments of knowledge and skills can be reached within 3 years and not 4 years. At the same time it is important to note that the development of the children will progress more quickly and on a higher level and the children will not have to exercise more effort either at school or at home. Shortly, all this can be expressed in the following way: a more reasonable allotment of the teaching material is done in individual school grades; useless extension of some themes of the teaching material is reduced (for example, in the first year, counting in the first 3/4 of the year was only up to 10 and extended only in the last quarter to 20); generalizing rules and procedures are used which make it possible to evade lengthy explanations and occasional remembrance of some concrete facts, etc. These changes were based on a long-range investigation by the psychologists, Zankov, Elkonin, Davydov and others.

In view of the fact that, according to the new curricula, all the material in the primary school can be mastered within three years, we can now spread the subsequent teaching material from the fourth class and not the fifth as before. Consequently, we have gained one more year without changing the time of school attendance (10 years). Therefore many teaching subjects can be shifted from the higher classes to the lower classes and the difference is sometimes half a year, a year or even a year and a half. Thus, for instance, negative numbers in mathematics which in the past were first taught in the sixth class are now taught at the beginning of the fifth class. Of course this shift, wherever it has been performed, was not implemented mechanically. The idea is that the structure of the courses themselves and the methods of teaching individual themes should change. The basic ideas and the methods start to play a major role: equations in mathematics, molecular structure of matter in the first course of physics, the structure of the atom and the periodical system of elements in inorganic chemistry, etc.
A list of subjects which constitute the curricula of our school is not long: the mother tongue and literature, one foreign language (English or German or French), elementary arts and music, history and social sciences, geography, biology, chemistry, physics, astronomy, mathematics, technical drawing and practical work and physical education.

Geology, mineralogy, logic, psychology, education, philosophy, economy, law, aesthetics and history of art are not included in the curricula as independent subjects. To this list we would like to add at least another foreign language and many other things which undoubtedly are of educational importance. But further extension of the curricula would necessarily lead either to a considerable overload of the pupils and lesser efficiency in their learning, to a superficial approach or to a longer period of school attendance up to 11 or 12 years and most probably to both.

And besides, a longer attendance increases the gap between the time of the social and physiological maturity of the young man and his initiation into life and creates serious obstacles to secondary education really becoming the property of the whole young generation in the whole country.

Let us make a remark in passing that the 10 year school attendance in the Soviet school corresponds approximately to the same number of teaching days as in the case of 12 years in the western countries. This is because in our teaching week there are 6 days and not 5 as in the West.

No wonder that the American economist Machlup writes in his recently published book *Production and Extension of Knowledge in the USA* (I quote according to the Russian edition (*Progress, Moskva* 1960)) : “A comparison of the school requirements and results in various countries, in my opinion, has quite clearly shown that the teaching process in the USA can be speeded up and the education which is now provided in 12 years can be acquired within 9 or 10 years”.

What is important here is not the concrete term which might be discussed, but the leading idea with which we agree. An increased amount of years does not necessarily lead to a corresponding increase of the quality and level of education. On the contrary, its effectiveness can be debased.

One of the basic and characteristic features of the Soviet secondary school is the effort to develop the pupils in a versatile way. Every pupil is required to acquire thorough skills and knowledge both in the sphere of humanities and of science and mathematics. What is essential in the draft of the committee is that, while shortening the compulsory and common part of teaching for all the students (to 24 lessons a week in the primary school and 30 lessons a week in the secondary school), it suggested that optional subjects should be introduced. They should help to find and develop individual abilities of the pupils and make the acquired knowledge deeper. The optional subjects are introduced in the last three years of the secondary school, in the 7th class for 3 lessons a week, in the 8th for 4 lessons and in the 9th and 10th for 6 lessons a week. With regard to subjects, they vary considerably: mathematics,
science, technology, humanities, art. The type of instruction also varies and consists of lectures, seminars or practical courses. Of course the optional subjects can and must help vocational orientation and in this way the subsequent choice of career, and to a certain extent differentiation is introduced already in the teaching process. But it is important to stress that it is not the same as in the western countries. It is essential, firstly, that the time devoted to the optional subjects, even in the higher classes of the 9th and 10th years, does not exceed 20% of the time of the compulsory teaching. Secondly, the requirements of universities of all types do not presuppose knowledge which could be acquired in the optional subjects. These requirements are based only on the compulsory courses.

At the moment the bill requiring compulsory 8 year school attendance is being put into practice. Last year (1968), over 55% of the pupils who finished the 8 year school continued their studies in the 9th class (in the towns this percentage was over 80%) and about 22% of those who left went to technical secondary schools which provide general education as well as technical education. A great number of those who left 8 year school (almost 20%) entered various institutions as apprentices, which within the span of 1 or 2 years prepare qualified workers. Until recently, these institutions mostly did not provide general education. In order to acquire such education the pupils had at the same time to attend an evening school for working youths or to leave this to the future when they had their own professions. The documents of the Party and Government considered it necessary to carry out reform of the professional schools, mainly in the most complicated professions, saying that special technical schools would be established with 3-5 year attendance which would provide secondary education together with technical education.

Let me go a little deeper into the relationship between general and technical education. It is a well known fact that in recent years (from 1958 to 1964), a great experiment with so-called productional education in secondary schools has been proceeding. Therefore school attendance was increased by one year and the length of schooling was 11 years. This experiment proved completely competent only in cases where it was possible for the production education to obtain a profession closely linked with theoretical education, e.g. a programmer of computers, a chemist in a laboratory, etc. or when, in the environment of the school, there was an agricultural or industrial complex which provided especially good conditions for mastering the relevant professions. But in neither of these cases was it necessary to prolong school attendance by one year. This is why at the beginning of the year 1964 productional education was stopped in the secondary schools with the exception of those cases where there were all the necessary conditions for this type of instruction: material conditions and professional staff. Together with this the schools returned to the ten-year school attendance. But it would be wrong to draw conclusions that the Soviet educational system as a whole is not able to give to every young man not only a complete secondary
education but also a professional education. It is builders of communism we try to educate, every one of whom has to occupy a place in the economic or cultural spheres of life. Success in this usually requires, besides a general level of culture, some professional preparation. This is why, in all types of schools, a great importance is given to the vocational orientation and pre-professional preparation of the pupils in the higher classes, which have a working and polytechnical character. With regard to the type of schools where, together with vocational education a complete secondary education, is provided, we can name, besides the existing secondary schools with a deeper theoretical education in the 9th and 10th class in mathematics, computers, physics, electronics, chemistry and chemical technology, biology, agro-biology, the technical secondary schools (technikum), pedagogical and medical secondary schools and also professional technical schools which were referred to above. Thus the combination of general education and technical education in one and the same school is on the whole feasible. It is only necessary that corresponding conditions are created, especially as regards material equipment and also highly qualified staff.

The syllabuses and curricula in the present-day Soviet school include a system of skills and knowledge which provides everybody with a broad education and at the same time makes it possible to develop individual interests and abilities.

But it is not our purpose, and we must say that it is not even possible, to give to young people all the knowledge they might possibly need in the future. This is because much of what is considered important today is becoming rapidly obsolete and within 10 or 20 years may not be useful at all. Therefore the curricula, textbooks, and other teaching instruments and the whole set of teaching methods must evoke curiosity and desire for knowledge and constant effort to acquire new and further knowledge in the pupils. If in addition we teach them how to work systematically with books, reference books and other sources of scientific information, then school-leavers will really be cultivated, for real culture means the permanent thirst for knowledge and for mastering the methods of how to quench this thirst!

LES PROBLÈMES DU CONTENU DES PROGRAMMES SCOLAIRES EN URSS

par A. Markushevich (Moscou)

Une commission de représentants chargée d’examiner le contenu de l’enseignement scolaire fut créé en décembre 1964 au sein du Présidium de l’Académie des Sciences de l’URSS et de celui de l’Académie de Pédagogie. Cette commission essaya de définir les relations qui existaient entre l’enseignement donné à l’école et les exigences imposées pour le progrès continu de la science et de la culture et prépara un projet de rénovation des
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programmes qui fut ensuite circulé auprès d'organismes scientifiques, pédagogiques et de développement, ainsi qu'au pré de personnalités, pour commentaires et appréciations. Après un an, la commission présenta une version révisée de ce programme à l'Académie des Sciences ; ils furent ensuite publiés dans des revues pédagogiques. Un ajustement des programmes de physique et de mathématique a eu lieu avant même l'approbation du Ministère de l'Éducation d'URSS. La réforme ne sera complètement adoptée qu'en 1975.

Parmi les mesures envisagées on remarque une réduction de l'enseignement primaire qui ne durera que 3 ans au lieu de 4. La structure des classes changera ainsi que les méthodes d'enseignement des différentes matières en vue de gagner une année sans changer la durée totale de l'éducation obligatoire qui est de 10 ans et qui compte autant de jours de classe que la période obligatoire de 12 ans dans l'Ouest. Les cours inscrits au programme de base comprennent la langue maternelle et sa littérature, une langue étrangère (anglais, français ou allemand), les arts et la musique sous une forme élémentaire, l'histoire et les sciences sociales, la géographie, la biologie, la chimie, la physique, l'astronomie, les mathématiques, le dessin industriel, les travaux pratiques et l'éducation physique. Un nombre plus élevé de matières alourdirait les programmes ou nécessiterait une augmentation de la durée de l'éducation obligatoire ce qui retarderait d'autant l'initiation à la vie.

Le but de l'enseignement secondaire en URSS est d'inculquer la versatilité aux jeunes. Chaque élève doit d'acquérir des connaissances et une expérience des disciplines humanitaires et scientifiques. Le projet de la commission suggère également l'introduction, au cours des trois dernières années de l'école secondaire, de sujets en option afin de développer les capacités individuelles. Le temps consacré à ces sujets ne dépasse pas 20% du temps réservé aux sujets obligatoires et les conditions d'entrée à l'Université ne tiennent pas compte des connaissances acquises au cours de l'enseignement des matières en option.

Les responsables de l'enseignement en URSS ont eu le souci non seulement de fournir un enseignement secondaire complet mais un enseignement pratique et professionnel. Le Parti et le Gouvernement ont donc déclaré qu'il était nécessaire de réformer les écoles professionnelles (Ces dernières ont accueilli en 1968 20% des jeunes quittant l'école secondaire après 8 ans) afin que soit donné un enseignement secondaire complet et un enseignement technique en une période de 3 à 5 ans. En 1964, l'enseignement "productif" (qui a porté à onze ans la durée complète de l'enseignement secondaire) ne s'est avéré satisfaisant que dans un nombre limité de cas : ce système fut donc aboli sauf lorsqu'on disposait des conditions nécessaires en matière d'enseignement, d'équipements et de personnel.

Dans toutes les écoles l'accent a été mis sur l'orientation professionnelle et la préparation pré-professionnelle des élèves des grandes classes qui ont un caractère pratique et polytechnique. Parmi les écoles spécialisées qui offrent un enseignement général et technique combiné il y a les écoles secondaires techniques (technikum), les écoles secondaires pédagogiques et médicales ainsi que les écoles techniques professionnelles déjà mentionnées. Il est à remarquer qu'une grande partie de ce qui est considéré comme important aujourd'hui est déjà dépassé. L'objectif le plus important pour les élèves est d'apprendre les méthodes de travail.