

**Highlights**

"In the school classroom and workshop, in the machine building plant, in the countryside, and wherever we went, we felt the pulse of the Soviet Government's drive to educate and train a new generation of technically skilled and scientifically literate citizens." Such is the consensus of the three specialists who are authors of this volume.

The ideas and practices of Soviet education form a philosophy of education in which the authoritarian concept predominates.

With 60 percent of the adult male population illiterate in 1900, a massive educational effort was deemed necessary to transform this situation into one where new skills and scientific inquiry could meet national needs.

The curriculum is unified and is the same for all schools throughout the U.S.S.R. with but slight variations in non-Russian nationality areas.

Principles of Darwinism, which are studied in grade 9 of U.S.S.R. schools, teach children about the origin of life together with the history of evolution in the organic world. The main theme of the course is evolution.

Major efforts of U.S.S.R. schools during the past 30 years have been to train youngsters for the Government's planned economic programs and to inculcate devotion to its political and social system.

Science and mathematics occupy 31.4 percent of the student's time in the complete U.S.S.R. 10-year school. According to school officials, all work of pupils in these subjects has to be done in pen and ink in order to inculcate habits of neatness and accuracy.

U.S.S.R. plans are to bring all secondary school children into labor education and training experiences through the regular school program. The "school of general education" is now named the "labor-polytechnic school of general education."

Industrial and agricultural sciences and technical developments are causing Soviet educators to be concerned about future needs for re-adapting the schools to give more appropriate instruction for the coming age of automation, atomic power, and space.

The authors consider the polytechnic program in Soviet elementary-secondary schools "as an integral part of the Soviet philosophy of education. It is not a subject but in fact a type of education, and other subjects . . . contribute to the polytechnic area."

1960

# Soviet Education Programs

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- FOUNDATIONS
- CURRICULUMS
- TEACHER PREPARATION

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## Introduction

**A**S THE SECOND GROUP of educators sent by the U.S. Office of Education to the U.S.S.R. under the Soviet-American cultural exchange agreement, we were prepared to study specific aspects of education in that country. From the experiences of those who had gone before us, we had understood and anticipated that these aspects were particularly emphasized by Soviet educational authorities: the basic formation in mathematics, natural sciences, and polytechnic knowledge related to economic production. Since most educational systems and their curriculums are shaped by fundamental concepts and policies, we were naturally interested in those features which are termed the foundations of Soviet and Russian education. Similarly, it proved useful in our study to examine the general principles and methodological framework according to which Soviet teachers work and through which some of the special practices in Soviet education can be interpreted. We also went to Russia aware of the major reform movement underway in education there, and with the intention of seeing as closely as possible the features of the reform and their implementation in those schools which were in a state of transition.

From the moment we stepped into the Soviet jet TU-104 in Copenhagen, which would wing us seemingly without effort to Moscow within 3 hours, we sensed the technological push that later would be evidenced to us in the educational work going on in the Soviet Union. As we flew over the northern flank of the broad East European shelf and into the heart of Russia, we were able to glimpse some of the vastness (over 8 million square miles) of the land whose schools were to be our host. At the same time, we tried to disabuse ourselves from a concern with the geographical extent of this visit, taking comfort in the fact that the nine educators and Commissioner of Education Derthick in 1958 had accomplished a great deal in that direction and had come back with a keen awareness of the great commitment of Soviet peoples to education. We knew too that the vastness of the Soviet Union was knit together educationally by a unified system of general education administered

through central political controls. With these notions in mind, we decided to concentrate our school visit in the Western regions of the U.S.S.R. Authorities in the Ministry of Education of the Russian Soviet Federated Socialist Republic at Moscow, which was our official host, kindly agreed to arrange for us visits not only in Russia proper but also in Ukraine (south of Russia) and in Georgia (in the Caucasus), which are 2 of the other 14 Soviet Republics comprising the U.S.S.R. (See p. XVI for a list of places and schools visited.)

In the school classroom and workshop, in the machine building plant, in the countryside, and wherever we went, we felt the pulse of the Soviet Government's drive to educate and train a new generation of technically skilled and scientifically literate citizens. In the field of general and teacher education, we tried to examine as closely as possible the foundational aspects of their school enterprises, as well as the work of their teachers and students in the areas of mathematics, science, and polytechnic courses. While our efforts were limited to a month's visit, we saw elementary-secondary schools and teachers colleges of various sizes located in different cultural regions. We attempted to limit the number of visits and the distances travelled in order to concentrate on certain programs of study and on certain schools. We spent 2 to 3 days in some institutions for this purpose. By this approach we accomplished a considerable amount and feel that in the main we achieved our mission.

Even so, our visits cannot be judged as fully representative or complete for the educational sectors we sought to study. Schools vary significantly in composition and quality in most countries, and the U.S.S.R. is no exception. We saw some of its best schools and some of its average ones. Naturally, we have attempted to make effective use of official Soviet materials on educational programs and to verify through our visits the teaching described therein. We lay before the reader our findings, hoping that they may prove to be worth the efforts expended. This study is essentially a descriptive one within the framework of comparative education. It is not, however, by virtue of this relationship a *comparative* study or interpretation. We direct the reader to Chapter V, "Conclusions," for our final statement on the matter.

The conception and purpose of our mission were not only educational and technical, but also partly cultural. Under the exchange agreement on cultural relations between the Governments of the United States and the Soviet Union, signed on January 27, 1958, and renewed on November 21, 1959, educators from both

countries are exploring the ways of living and thinking in each other's country. For us, travelling and observing in the U.S.S.R. were thrilling cultural experiences. Our hosts in Moscow, Kiev, Tbilisi, Leningrad, and outlying points were most attentive to our interests and helped us take note of long-established traditions and ancient monuments that mark the way their peoples have trod across the centuries. They took us to musical concerts, theatrical performances, and art exhibits that testified to their many accomplishments in these fields. We left their country with many new impressions and with some added assurances about the usefulness of cultural exchange.

In the pages that follow, a certain division of labor was followed throughout. Writing and research of the first and fifth chapters were the primary responsibility of William K. Medlin; the second and fourth chapters, of Clarence B. Lindquist; and chapter three, Marshall L. Schmitt. All three authors collaborated in providing the documentary materials in the appendixes, in advising each other on their respective tasks, and in supplying basic interpretations for the chapter on conclusions.

#### Schools and Institutes Visited

##### I. 7-year, 10-year, and 11-year Schools

| Name                 | Type                                  | Location         | Enrollment |
|----------------------|---------------------------------------|------------------|------------|
| Number 204           | 11-year                               | Moscow           | 1,050      |
| Lenin School (rural) | 11-year                               | Gorki-Leninskie  | 650        |
| Number 12            | Boarding                              | Moscow           | 300        |
| " 14                 | 10-year                               | Zagorsk          | 1,500      |
| " 20                 | 7-year                                | Zagorsk district | 340        |
| " 16                 | 11-year                               | Moscow           | 1,037      |
| " 57                 | 10-year                               | Kiev             | 880        |
| " 112                | 10-year                               | Kiev             | 657        |
| " 6                  | 10-year                               | Kiev             | 723        |
| " 43                 | 10-year                               | Kiev             | 1,150      |
| " 44                 | 10-year                               | Kiev             | 1,200      |
| Sagaredzho (rural)   | 10-year                               | Georgian S.S.R.  | 916        |
| Number 5             | Vocational-<br>Technical <sup>1</sup> | Tbilisi          | —          |
| " 4                  | 11-year                               | Leningrad        | 1,025      |

<sup>1</sup> A 4-year program based on 7 years of general education.

##### II. Teacher-Training Institutions

| Name                            | Location  | Total enrollment (day, evening, and correspondence) |
|---------------------------------|-----------|---|
| Krupskaia Pedagogical Institute | Moscow    | 7,500   |
| Lenin Pedagogical Institute     | Moscow    | 4,000   |
| Pedagogical School Number 2     | Moscow    | 530   |
| Gor'kii Pedagogical Institute   | Kiev      | 3,050   |
| Pushkin Pedagogical Institute   | Tbilisi   | 5,708   |
| Hertsen Pedagogical Institute   | Leningrad | 16,500  |

##### III. Inservice Institutes for Teachers

| Name                         | Location  | Total enrollment   |
|------------------------------|-----------|--------------------|
| Inservice Training Institute | Leningrad | 3,500              |
| Inservice Training Institute | Moscow    | 6,000 <sup>2</sup> |

<sup>2</sup> Total annual registrations. Regular enrollments in weekly courses are 2,500.

##### IV. Pedagogical Research Institutes

| Name                            | Location  |
|---------------------------------|-----------|
| Methods of Teaching             | Moscow    |
| Theory and History of Education | Moscow    |
| Defectology                     | Moscow    |
| Psychology                      | Moscow    |
| Psychology                      | Kiev      |
| Pedagogy                        | Leningrad |

## CHAPTER I

# Foundations of Soviet Educational Practices

Collaboration in research, interpretation, and technical preparation of documentary materials was provided by Nicholas J. Rokitiensky of the Division of International Education.

**T**HE PRESENT SYSTEMS of schools and educational methods in the U.S.S.R. are outcomes of many and complex factors and developments—historical, economic, social, psychological and cultural—as well as educational theories derived from these areas and scientific investigations into education. In order to help us understand the school programs and how they function, this chapter will briefly analyze those factors in their relationships to current educational practices, and will consider the status of Soviet education today.

In Russia, public school systems are, historically speaking, a recent phenomenon, and popular instruction in knowledge about the world developed later than in most other societies in Western civilization. During the 18th century, the first secular schools were small and, for the most part, socially exclusive. Only in the latter half of the 19th century did the Russians succeed in establishing some basis for the expansive developments we are witnessing in the 20th century. Early efforts were small and usually came from the initiative of the crown.

During the last decades of the 1800's and especially the years prior to the 1917 Revolution, popular movements for education brought steady increases in school facilities. These late beginnings were primarily responsible for the relatively narrow national bases on which Soviet educators began to build a public schools system in the 1920's and 1930's. Particularly since 1930, therefore, a rather phenomenal growth has occurred in educational facilities in the U.S.S.R., moving steadily in the direction of universal, compulsory general education. In recent years, this movement has tended toward the goal of universal high school education, but had not reached that point when major reforms were enacted into law late in 1958. During this period of rapid

growth, curriculum and methods have responded primarily to economic requirements of society.

### Historical Problems

#### ECONOMIC DEVELOPMENT

Historical problems of Russian education can be written largely in terms of economic and social conditions. Until late in the 19th century, the material exploitation of Russia had progressed slowly. Linked closely to this situation was the main social problem of serfdom, which was legally abolished during the 1860's. The availability thereafter of skilled manpower for economic growth became primarily a function of school facilities.

In other major European countries and in America, industrial growth and applied science had advanced, during the last half of the 19th century, at a much greater pace than in Russia. As the urgencies, after 1900, for the material exploitation of the country and for securing its international position pressed against the capacities of the people, it became evident that educational facilities would have to be developed at great speed in the decades ahead. Since 60 percent of the adult male population were illiterate in 1900, a massive educational effort was deemed necessary to transform this situation into one where new skills and scientific inquiry could meet national needs. The rate of Russian industrial growth progressed rapidly after 1900 and, during the Soviet period, was set at ambitious paces through the 5-year plans beginning in 1928, which is a chronological demarcation point in Soviet society. Because of the country's recent economic development and since Soviet authorities have established priorities sharply favoring heavy industrial production, educational programs have been designed to meet those fundamental needs. The proportion of total planned investment in the national economy going into heavy industry has been and is to continue to be 70 percent in the new 7-year plan (1959-1965).

The proportions of the adult population employed in various sectors of the economy are similarly indicative of industrial emphasis. As of 1956, according to Soviet statistics, 85.2 percent of the adult population were employed in productive branches of industry and agriculture; only 14.8 percent were working in administrative, distributive, and welfare services, including educa-

tion.<sup>1</sup> These factors have definite effects on education, on the preparation for life that youth must receive in school. In conjunction with economic plans, the planning for and control over school programs are devised by central authorities and administered by national, republic, and local organs of government functioning along a decentralized pattern.<sup>2</sup> **The main tasks of U.S.S.R. schools over the past 30 years have therefore been to train youngsters for the government's planned economic programs and to inculcate devotion to its political and social system.**

#### SOCIAL DEVELOPMENT

The Russian Empire entered the 20th century with a highly stratified social structure that was undergoing strains and great pressures for change, and changes were in fact rapidly taking place in Russian society. At the top of the social pyramid were the Emperor (Tsar), his family, and related imperial and princely families. A landed and titled nobility with extensive privileges ranked next, followed by a sizable class of officials whose upper ranks enjoyed prestige conferred by their positions and economic status. Entrepreneurs and men of commerce were not numerous, but they were important in the social and cultural, as well as economic, life of the towns. The Russian clergy composed another distinct social group having its own somewhat corporate character. Taken together, these social groups accounted in 1900 for about 3 percent of the total population. In terms of educational opportunity, their children constituted about 40 percent of the total enrollment in secondary schools of the Ministry of Public Instruction.<sup>3</sup> In institutions of higher learning, 61 percent of the students in 1914 came from these social groups.

Persons employed in agriculture, including small holders, and in industrial enterprises together accounted for approximately 87 percent of the total population. Their children made up 57 percent and 39 percent of the enrollments in fee-requiring secondary schools and higher institutions, respectively. The late emergence (after 1860) of Russian masses from the conditions of serfdom

<sup>1</sup> S. G. Shapovalenko, ed. *Soedinenie obucheniia s proizvoditel'nyim trudom uchashchikhsia.* (Combining instruction with production work of pupils.) Moscow, R.S.F.S.R. Academy of Pedagogical Sciences, 1958. P. 7.

<sup>2</sup> *Soviet Commitment to Education.* U.S. Department of Health, Education, and Welfare, Office of Education. (Bulletin 1959 No. 16.) Washington, U.S. Government Printing Office, 1959. P. 8.

<sup>3</sup> Total enrollments (1914) in these schools were 556,487, but there were 135,769 pupils in other secondary schools, the majority of whom came from the social groups mentioned. Cf. Nicholas Hans, *History of Russian Educational Policy*, pp. 235-39; also, *Eshegodnik Rossii* (Yearbook of Russia), 1906, St. Petersburg, *Tsentral'nyi Statisticheski Komitet*, 1907.

made the rapid development of educational facilities both burdensome and urgent. This slow appearance of a free labor supply was closely related to Russia's tardy industrialization and social development, which in turn were hampered by the lack of a broadly based school system.

#### GEOGRAPHY

Bearing on the U.S.S.R.'s historical problems of economic and social development has been her geographical position. Steadily expanding from her European homeland after the 15th century, Russia came to occupy by the 20th century the vast Eurasian plain and plateau which, with little interruption, stretch eastward for thousands of miles to the Great Mongolian Plateau and, eventually, to the Pacific Ocean. These plain-plateau regions have served for over a thousand years as avenues for great human migrations and for building empires.

One major outcome of this situation is that the changing ethnic tides have left both islands of various cultures and mixed ethnic and cultural features that today give Soviet schools their particular imprints. Another result is that this immense region, until recently very sparsely populated and little developed in the central and eastern parts, has presented and continues to present a large problem for the manpower and resources development capacity of the nation.

The kinds of education, training, and related experiences which Soviet youth receive are closely related to these problems emerging from geography. They are factors, therefore, which should enter into any consideration of education in the Soviet Union. Our mention of them here merely points to their seeming importance and complexity.

#### SCHOOL SYSTEM

Years of war and revolution (1914-1921) delayed and disrupted building a national school system until the 1920's. These delays, followed by new economic priorities, had the effect of limiting education of the masses to the rudiments of literacy and elementary education. A systematic reestablishment of school systems came after 1928, when the Soviet Government launched the first in its series of priority economic plans. A minimum general education of 4 and then of 7 years was provided for all and, for those who qualified, desired to continue, and were admitted, a unified secondary school leading to the university or to specialized vocations was provided. During the period from

1935 to 1955, universal public education became a policy of the Government which made free and compulsory 7-year schooling available to the overwhelming majority of Soviet children whose grandparents, and many of their parents, had been either illiterates or the recipients of an elementary education only. By the 1955-56 school year, over 5 million youngsters were enrolled in academic high schools, and another 2½ million, in vocational, technical, and specialized schools beyond the 7th grade. The sociological aspects of this "educational revolution" in a little more than one generation invite attention, but are not the subject of this study.

Russian school systems prior to 1917 were, in general, similar to those which then characterized various European school systems. Three or four years of primary school were followed by enrollment in one of several different kinds of schools, independent of and parallel to each other: academic (college preparatory), vocational, technical, commercial, and so forth. Transfers into one of these or other specialized schools (*e.g.*, pedagogical or medical) might also occur at a later point in a pupil's general school program. The main feature of this parallel system, however, was its rigid socioeconomic framework.

The curriculum in the academic school was a "classical" or traditional type (emphasizing either the classics or modern subjects) and required the pupils to master much subject matter preparatory to studying for the professions (law, letters, medicine-dentistry, or technology) at the university. Under these organizational and curricular patterns, access to the liberal professions, intellectual enlightenment, and technical careers was limited to small proportions of the total young population.

After the establishment of the Soviet State, these patterns changed little in form but substantially in content, involving new selection criteria for advancement to secondary and higher education, and new subject matter as well as didactics. Particularly during the curriculum reforms of the 1930's did the traditional academic structure reaffirm itself in Russian education after a decade of experimentation. Absent were Greek, Latin, and religion as subjects, being replaced by modern languages, sciences, and political instruction. These general characteristics of the Soviet school system endured almost intact up to the 1958-59 school year, when new laws and large-scale experimentation began to work radical changes in Soviet educational practices.

One other characteristic of Russian education, not unrelated to recent policy developments, has been a historical concern for

manual, technical, and labor training in the schools. Already in the 1860's and 1870's some Russian educators saw the need for combining theoretical instruction with manual and practical work experiences. Some legislation and experiments led to curriculum changes in this respect, but these ideas did not become widespread in the schools of general education. Nonetheless, a certain tradition had been established, and we note that in the 1890's Russian educators advocated instruction in agriculture and in industrial work, which not only would help young people in the "real" world but also would inculcate (especially on children of the upper classes) respect for work and a sense of beauty in the realm of physical forms.<sup>4</sup>

#### POLITICAL SYSTEM

The vast regions of the Russian Empire (now the Soviet Union) were ruled for centuries by highly centralized institutions of Government. In the development of educational policies and institutions as well as in other activities of society, central authorities have exercised decisive influences. After a few months of a provisional government in 1917, a new form of centralized authority replaced the old imperial organs of government. Under firm Communist Party direction, the new Soviet Government continued a system of extremely centralized political controls. This system is officially termed by Soviet authorities a dictatorship of the proletariat.

Applying itself to education, this system exerts overall policy direction of educational developments and carefully worked-out measures of inspection and fiscal controls. Soviet education is administered, therefore, according to centralized ministerial principles traditionally practiced in many countries.

The several problems briefly touched upon here are the major ones which over many decades have been instrumental in shaping Russian schools, and which continue to exercise strong influences at the present juncture in the history of education in the U.S.S.R.

#### PHILOSOPHY AND CONCEPTS OF EDUCATION

The prevailing and official philosophy in Soviet intellectual, academic, and scientific work is dialectical and historical materialism (popularly called "Marxism-Leninism"). This philosophy teaches that matter, in its various solid, liquid, energy, or

<sup>4</sup> See, *Report of the Commissioner of Education for the Year 1890-91*, Vol. 1 "Education in Russia," by Frances G. French. Washington, U.S. Government Printing Office, 1899. Pp. 242-261.

ethereal forms, is an absolute and eternal quantity. Based essentially on concepts of 19th-century physics, it permeates the basic courses in all curriculums to inculcate on students a "scientific-atheistic" understanding of the world.

According to Marxism-Leninism, society has historically developed and still develops in line with fundamental economic laws only, to which all other institutions, including education, are ancillary. These ancillary institutions are termed "superstructure." Schools are seen merely to reflect economic relations of society, in which pluralistic concepts are to have no place. Soviet philosophy admits that theory and practice interact and are modified. As Soviet economic and political programs have become ever more deterministic in all phases of life, these principles have in effect been oriented so as to construct a philosophy of education which appears to have pragmatic and perhaps expedient characteristics. These characteristics can be seen in the Government's recent decision to carry out extensive reforms in Soviet education.

Soviet philosophy envisages an ideal socioeconomic order (communism) for mankind and so endows itself with an idealistic nature. One must reckon with this idealism in examining the characteristics of Soviet society and its schools. The history of Russian philosophy before the Soviet period is marked by strong currents of idealism. This tradition appears not to have been lost in contemporary applications of dialectical and historical materialism, which at the same time provides a new frame of reference for social action in the field of education.

While materialism is the official philosophy, there appear to be other ideas which animate both intellectual life and educational philosophy, and which are at pains to find a source in the doctrine of dialectical and historical materialism. One of these is the overwhelming conviction, which one finds in Soviet educators and parents, that the primary path to a better future is through education, through intellectual improvement. This conviction motivates a great inner drive to master knowledge and its applications, an intellectual thirst that is prepared to endure other deprivations to satisfy itself. The U.S.S.R. Minister of Higher and Secondary Special Education recently expressed this faith to us in his own way when he said: "We in the Soviet Union believe absolutely in the victory of science; we believe that science leads to truth. We have everything to gain by giving our youth the best education possible." Other Soviet educators and teachers have expressed similar views. Such conviction is an article of

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faith which draws its strength from deep motivation. Without it, Soviet school plans might be something different today.

"Free and universal public education" is another foundation of the Soviet system of education. Prior to legislation on the current reforms, the U.S.S.R. Constitution (article 121) stated: "Citizens of the U.S.S.R. have the right to education. This right is ensured by universal compulsory seven-year education; by extensive development of ten-year education, by free education in all schools . . . by a system of state grants for students of higher schools who excel in their studies; by instruction in schools being conducted in the native language. . . ." This provision has been amended to read 8-year and 11-year education, and to give education a polytechnic orientation. All schools except the military are coeducational.

Many of these various ideas about education and its philosophy are not peculiar to the Soviet period of Russian history only. They have their earlier traditions in the fabric of Russian culture out of which Soviet society has emerged over the past 41 years. Furthermore, loyalty to the homeland and to the authorities invested with the power to defend it is a longstanding national characteristic that continues to be a great significant force in today's Russia. The schools imbed and teach such traditions. Lenin himself, referring to cultural legacies of the past, acknowledged the worth of certain achievements made in imperial times: "We can build communism only on the stock of knowledge, organizations, institutions . . . human forces and means left to us from the old society," and "we must take what was useful" from the old school.<sup>5</sup>

Because of a return during the 1930's and 1940's to some principles of education practiced before the 1917 Revolution, Soviet educators have endowed their philosophy with a certain traditional or "essential" character. These principles include curriculum construction with a main emphasis on pupils' acquiring a definite amount of subject matter in all disciplines; the selective procedures for student promotions, based primarily on rigid, subject-centered examinations; and the organization of schools in different parallel systems. They have introduced the prerevolutionary concept of medal winners: "gold medal" and "silver medal" recipients. These students are the ones who have received all "A" grades or mostly "A" with some "B" grades, and these honors earn them preferential treatment in higher education.

<sup>5</sup> V. I. Lenin. *Sochinentsia*. (Works.) 4th ed., vol. 31. Moscow, Gospolitizdat, 1950. Pp. 259-261.

These principles of selection reflect a philosophy of education that views secondary and higher education as not the province of all those who want to obtain academic and professional preparation, but rather of those who qualify according to the selective criteria. The tendency of such a system is, of course, to make the upper grades and university years exclusive. As we shall observe later in this study, however, these principles are now undergoing transformation.

Important for Soviet educational thought has been the life work of Anton S. Makarenko, a Soviet Ukrainian pedagog who during the 1920's and 1930's developed a theory and system of education by working with derelict youth. Often working in opposition to officially announced educational principles and policies, Makarenko drew an important body of educational rules, methods, and moral principles directly from experiences in the school. Although these ideas were by-and-large not founded explicitly in teachings of Marx and Lenin, their "main object . . . was to demonstrate how collective discipline may be established and maintained," a goal which at length found support in the governing councils of the Soviet Union.<sup>6</sup> Today, Makarenko's work retains a high place in the thinking and practice of Soviet educators.

It is also instructive to examine the psychological foundations of Soviet education and their implications for a philosophy of education. Most psychological research in the U.S.S.R. concerns problems in the educational field. Like philosophy, Soviet psychology is founded on the materialistic, monistic concept of the world which recognizes only nature (or matter) as the source of mind and consciousness. The entire mental activity of man is seen as a reflection by his nervous system of the real world (the physical world) and of his relationships to this world. Man's spiritual development is held to consist of the development of the qualities of the personality, especially of its talents and abilities. Through instruction and a controlled environment, man conditions himself to using his qualities in the common social interest.

According to Soviet educational theory, children are fashioned by environment, by mentally absorbing their environment and then transforming these ideas into personal experiences. Environment includes almost everything in experience. These experiences are to be self-disciplining, conscious ones wherein the individual

<sup>6</sup> Frederic Lilje. *Anton Semjonovitch Makarenko*. An analysis of his educational ideas in the context of Soviet society. University of California Publications in Education, vol. 13, No. 1. Berkeley and Los Angeles, University of California Press, 1953. Pp. 27-32.





Figure 1-1.—Returning from physical exercise, rural school, Moscow Oblast.

contributes his utmost to society while living in harmony, or in agreement, with it. Soviet patriotism—fidelity to the Soviet land and to the ideas of communism—occupies a leading place in this educational conditioning, and in this sense it gives the school a political character as well as a moral one.

Employing primarily the conditioned reflex theory as elaborated by Pavlov (1849–1936), Soviet psychologists have worked out a system of didactics which are strict and fixed in their conception and application; one might even use the term “narrow” to distinguish them from the broad scope of methods employed, for example, in most U.S. schools. Soviet psychologists maintain that fundamentally all (except physically disturbed or handicapped) children can learn the standardized subject matter through the teaching methods devised for all schools. By definition, therefore, they exclude from practical consideration many educational variables. Inherent differences exist among children, they admit, but only in small degrees. The curriculum, dominated until now by the so-called “hard” subjects, is designed to give all future citizens an intellectual foundation that is, in form, a traditional European one. This approach to education tends to give Soviet teachers a classroom control that appears complete.

Certain of their psychological research findings in the past are not the only explanation that we observe for this principle, however, and it is well to point out that Soviet psychologists have only recently been in a position to try out new methods in connection with a more diversified curriculum. As one Moscow educator pointed out to us in a discussion on methods, the researchers are not always successful in getting their results and viewpoints adopted in school programs. Psychologists and other researchers are busily engaged in work on such areas as development of the cognitive activity of pupils in the teaching process (especially in relation to the new polytechnic curriculum); simplification in learning reading and arithmetic skills in the lower grades; the formation of character and teaching moral values, including Soviet patriotism; psychological preparation of future teachers; the principles and methods for meeting individual children's needs (such as “self-appreciation”), in terms of handicaps and as regards a child's particular attitudes, peculiarities, and maturity; and understanding the internal, structural integrity of each school subject and its interrelationships with other branches of knowledge. These research activities are carried out under Soviet conditions and exemplify some of the major problems which educators there now face.

Although research goals are by and large established through planning, there is evidence of much purely experimental investigation, especially in educational psychology and education of the handicapped. It does seem to us, however, that limitations resulting from central control of research seriously handicap organic development; regional needs and individual creative innovations do not easily find accommodation in the official framework.

Soviet educators define their system as an all-round training whereby youth can participate in creating the conditions for a socialist, and, ultimately, a Communist society.<sup>7</sup> Such participation can become possible, they hold, only as students cultivate all the basic disciplines and only through a “steady rise in the productivity of labor . . .” which is linked closely with the educative process. School children and students are engaged in a total educational program which aims to teach them all the same basic subjects, morals, and habits in order to provide society with future workers and employees whose general education will make them socialist (Communist) citizens and contribute to their productivity upon learning a vocation (profession). A major task

<sup>7</sup> I. A. Kairov, ed. *Pedagogika*. (Pedagogy.) Moscow, Uch. Ped. Giz., 1956. Pp. 20–22.

now occupying Russian psychologists is to investigate the psychological conditions for improving the practical performance of pupils in prevocational school programs. Achieving this goal would have an effect on their productivity as adult workers.

Education and training in labor, therefore, form an important part of programs in educational research and in the regular schools. We have already noted some historical precedents in this direction during the late 19th and early 20th centuries. Soviet educators continued this concern for labor education, restating the theory in Marxist-Leninist terms.<sup>8</sup> After a variety of experiences in the early years of Soviet rule, the official study program for the general school became the "complex method," embracing all disciplines through a series of courses built on geographic schemes. The central theme of each phase or scheme was the work done by individuals and society to bring material surroundings into human service, and subject-matter was supposed to be introduced in order to develop understanding of the main theme. Socially useful work experiences were to be combined with this program. Many pedagogical and practical difficulties impeded its implementation, and the further development of this program, as well as Soviet pedagogy, was hampered by the reforms of the early 1930's, which came partly in response to the requirements of the 5-year plans.

Today, Soviet educators are enunciating new principles of labor education. While the new principles and programs use much the same terminology as that of former years, certain concepts and methods of implementation distinguish them from earlier practices. The basic philosophy of Soviet polytechnic education in the general primary-secondary schools is that education under modern technological requirements of society must include a basic understanding, in theory and in practice, of the operations of industry and agriculture. The philosophy postulates certain educative values to be derived from polytechnic training, such as understanding physical, natural, and mathematical laws; respect for labor activity and working people; and appreciation for complex processes in the course of material production. "The main task of the school is to prepare the up-coming generation for life,

<sup>8</sup> Lenin's original ideas on the subject are not extensive. A short summary of them is provided in N. K. Krupskaja, *Isbrannye pedagogicheskie proizvedeniia* (Selected pedagogical works), Moscow, Ushpedgiz, 1957, pp. 72-77. Krupskaja's own writings on polytechnic education are sizable.

for useful labor, to inspire in youth a deep respect for the principles of socialist society."<sup>9</sup>

These ideas seem to be transforming the Soviet general school into a major educative instrument for upgrading the technical-scientific competence of the entire generation. The school thus becomes a base for readapting the population, and particularly the young generation, to the changing techniques of modern industrial society. In this process, it appears to us that polytechnic education, combined with the traditional academic program, is emerging as a dynamic element in the philosophy of education in the Soviet Union.

Soviet educators point to the family and to youth organizations, as well as to the schools, as fundamental influences in the total education of children. Parents are encouraged to follow closely their youngsters' progress in school, to confer with teachers, and to serve on parent's school committees. Youth groups (the "Pioneers" and the "Komsomol") take the lead in stimulating and directing pupil initiatives, checking up on classwork and social performance, and applying forms of group punishment against recalcitrant members of the group (*kollektiv*).

The ideas and practices which we have reviewed here form a complex philosophy of education in which the authoritarian concept predominates. This philosophy at the same time recognizes flexibility and seems quite acceptable to changing conditions and views. Once a new concept is defined by the authorities, however, it is made to apply equally to all school districts and activities. Combining authoritarianism, elements of traditional education, faith in the power of education and in mass education, materialism, and educative values in polytechnic-labor programs, the Soviet philosophy of education stands today as a dynamic movement among educational philosophies of the world. Much evidence indicates changes in the philosophical foundations of education in the U.S.S.R., however, and it will require careful study in years ahead to determine what effects they have on educational philosophy.

#### SCHOOL ORGANIZATION

The political and economic contours of Soviet society largely determine the patterns of educational programs and organization. Planning and priorities are the leading factors here. At the base of the school system is a common program: a generally unified,

<sup>9</sup> Excerpt from a decree of the All-Union Komsomol Central Committee, in *Uchitel'skaja gazeta*, (Teachers newspaper), Feb. 28, 1959.

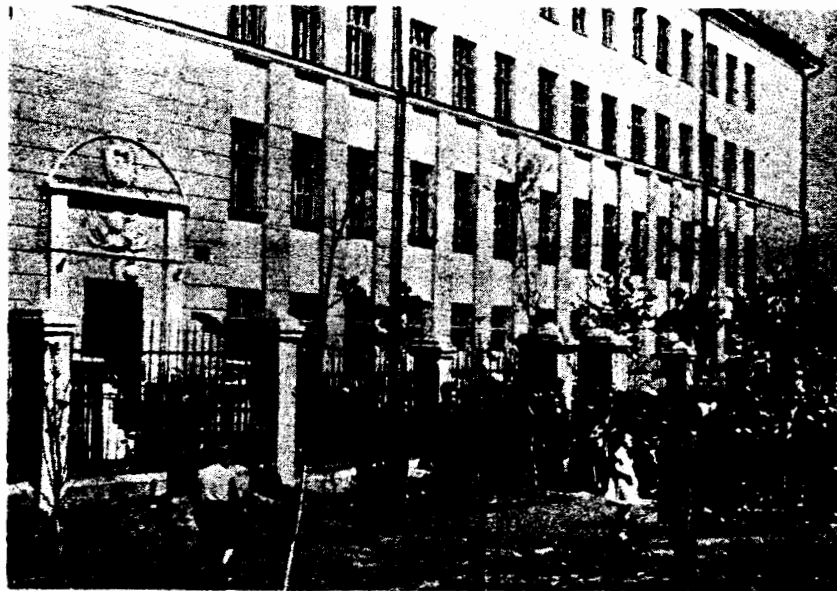


Figure 1-2.—Ten-year school, Zagorsk. Built in 1952.

universal, compulsory elementary schooling in grades 1-4<sup>10</sup> and a compulsory (nearly universal) 7-year education, or the "incomplete" secondary school.<sup>10</sup> This education provides the foundation for most all other educational programs, and normally all grades are housed in the same building. This latter principle applies also to the 10-year (or 11-year) school. Terminal in character, the 7-year school is followed by any one of several different kinds of schools which function parallel one to the other but under different administrative jurisdictions.<sup>11</sup> Thus, after receiving 7 or 8 years of general education, pupils may go into different forms of secondary education: 3-year general-polytechnical (leading to the university or to work in industry and agriculture), vocational (leading to industry or agriculture), technical (leading to industry, agriculture, and possibly higher education), semiprofessional (leading to industry or public services and possibly to a higher institute), and one of several forms of part-time general education. The last four educational routes may be anywhere from 6 months to 4 or more years in duration. The elementary-secondary boarding school is a new institution (since 1956) offering general-polytechnic education. Although we saw

<sup>10</sup> The 4-year elementary school is now in transition to a 5-year program; and the 7-year school is going into an 8-year program.

<sup>11</sup> *Soviet Commitment to Education*, pp. 5 ff.

education of this type, we did not make a special study of it.

Soviet educational policy requires a 6-day week for all school children. Saturday, however, is normally a shorter school day than the other days. The hours accumulated during a week, month, and year are impressive (see appendixes I to III for total hours per week from grade 1 and up). Over a 10-year period, the Soviet pupil spends approximately 10,600 hours in class and regular school activities. Under the new 11-year program, the total is planned to be well over 12,500 hours.

At the higher education level, we see another fractionalized system, where large numbers of separate and specialized institutions train highly qualified specialists in a few narrow fields, in response to economic and cultural requirements. For example, the medical, pharmaceutical, and veterinary institutes are outside the great universities. They are operated separately and come under the joint jurisdiction of the Ministry of Higher and Secondary Specialized Education, and an economic or functional ministry, such as the Ministry of Health or Ministry of Ferrous Metallurgy. While the State University of Moscow houses the basic faculties (departments) in the life sciences, a specialized school like the Timiriazev Academy of Agriculture at Moscow trains specialists in agricultural science and conducts research. Hundreds of such specialized institutes exist, working in relatively narrow fields.

This separation and the high functional specialization of Soviet university-level programs exemplify both Russian philosophy of education and conditions for educational development in the U.S.S.R. To help form a bridge between the foundational, theoretical training provided in the universities and the applied, specialized training given in the many institutes, there are the national (U.S.S.R.) Academy of Sciences, with its affiliates (such as the Siberian Branch), and the many Republic academies of sciences. Along with the higher education Ministry, these academies are responsible for planning and coordinating the theoretical and applied fields of scientific research. In the various departments (each grouping many disciplines) and many institutes of the Academy, the leading questions of science and methodology of research are considered. The leading members of the Academy are simultaneously the outstanding members of the university faculties. In such ways the Academy guides the scientific endeavors of the nation. A series of lesser academies responsible for the professions, such as education, fine arts, medicine, and architecture, perform similar functions in their respective fields.

### Central Planning, Controls, and Methods

The Soviet economy has been geared since 1928 to a series of 5-year plans and now is engaged in an ambitious 7-year plan (1959 to 1965). These plans have consistently emphasized heavy industrial production, and even the new 7-year plan envisages 70 percent of total investments for the heavy industry sector.

The demands on the schools are closely related to these plans and emerge from decisions made by the State Planning Committee's (Gosplan) educational department. The various educational agencies must implement these plans, and the laws on which they operate provide the directions for meeting planned manpower needs. It is because of this planned development that Soviet educators are able to say to foreign educators that in the U.S.S.R. there are "no shortages" of specialists and teachers, since each succeeding year requires the training of specific quantities (quotas) of personnel.

To implement the planned training programs, two orders of control are exercised. The first is essentially political, drawing its authority from the central organs of Party and Government. The main operative agency for general education in each republic, the ministry of education, has central powers over all the school districts in the republic. The curriculums that it establishes are obligatory for all schools, so that the number of hours devoted to chemistry in a 10-year Moscow school will be the same as that in a 10-year school at Irkutsk, Siberia, other things being equal. This latter practice is control of the second order: educational control. Through its published curriculums, textbooks, methods manuals, and examination booklets the ministry controls the day-to-day work of the schools. An elaborate inspectorate system verifies from time to time a school's performance in every subject and activity.

#### PRINCIPLES AND METHODS OF INSTRUCTION

Principles of the teaching process provide a set framework for classroom teachers and are considered obligatory for them to observe. These basic principles were announced by the highest Government authorities at the outset of the major reforms in Soviet education in 1931-1932.<sup>12</sup> In accordance with these requirements, definite methodological solutions have been provided

<sup>12</sup> See M. M. Deineko, comp., *Spravochnik direktora shkoly* (Manual of the school director), Moscow, Uchpedgiz, 1955, pp. 17-31; also, *Bulleten' Narodnogo Komissariata po Prosvetsheniis R.S.F.S.R.* (Bulletin of the People's Commissariat for Education of R.S.F.S.R.), 1932, No. 49, Article 638, Sept. 5, 1932.

over the years for each subject. The major feature of the Soviet curriculum is the parallel method of presenting subject matter, both internally with respect to each discipline and externally with respect to interdisciplinary relationships. While this feature appears strongest in the fields of mathematics and the sciences, it is used to some extent also in the social sciences subjects.<sup>13</sup> By this method, facts and skills are learned about two different areas of a subject, such as mathematics, during the same period of instruction (that is, the same term or semester). Similar learning activities occur in physics or in geography, and the knowledge acquired in each of these subjects may also be related to knowledge or skills acquired in another discipline.

As we have already pointed out, Soviet pedagogy has a distinctively traditional or "essential" character as far as form is concerned. Content is another matter.

One of its cardinal principles is that "the development of abilities is impossible without a systematic mastery of scientific knowledge."<sup>14</sup> In practice this means learning prescribed amounts of data through emphasis on drills. The construction of the curriculum and the main body of teaching methods sharply reflect this principle and are representative of long-established practices of European education. Learning is developed through individual, separate subjects in systematic, logical, and interrelated forms following the elementary grades (1-4). Sequences are carefully worked out for each subject, normally based on 2, 3, or 4 hours of instruction per week. Certain "hard core" subjects, like the mother tongue and mathematics, are taken 6 or more hours per week until the high school level.<sup>15</sup> Soviet educators strongly maintain that each subject has its own, distinct body of knowledge which must occupy a corresponding place in the general curriculum. Teaching concepts that advocate merging of disciplines into such integrated courses as social studies or general science are shunned by them. They do not use any unitary measuring device for curriculum analysis or construction, such as the American Carnegie Unit. Subjects are given different emphases according to the values, both educative and utilitarian, that officials responsible for educational plans determine appropriate to their society's needs and schools' tasks.

<sup>13</sup> See examples given in Bruce R. Vogel, *The Mathematics Program of the Soviet Secondary School. Its Status and Innovations*. Unpublished doctoral dissertation at the University of Michigan, Ann Arbor, 1959.

<sup>14</sup> Kalrov, I. A., *Pedagogika* (Pedagogy), p. 94. It is not intended here to discuss the problems of defining what is "scientific knowledge" in Soviet contexts, but rather to point out a governing principle within the Soviet framework.

<sup>15</sup> See appendix I, table B, p. 219.

## THE LESSON PLAN

The heart of teaching each subject is the daily lesson plan. Every hour of every subject has its planned instruction or activity, worked out in detail in writing by the teacher in accordance with the requirements of official syllabuses (*programmny*) and texts. All topics in the syllabus are supposed to be covered in class, and the textbook serves as the main instrument or aid.

The lesson plan provides the basic academic work of the class. It should be so constructed that the following major aims of the lesson are achieved:

1. *Clear objectives*—Pupils must receive factual data which enable them to acquire precise impressions and understandings; they must see relationships between phenomena, theories, and laws; they should be able to distinguish type-processes and acquire the habit of doing this; they should be trained to notice lacunae which may occur in a body of given knowledge.
2. *Union of the formative and developmental tasks in education*—Through rigorous study of subject matter (especially the sciences), pupils should understand the materialistic basis of the world, the class struggle in social development, and the ideals of communist morality; teachers must constantly develop the thinking, memory, awareness, discipline, and volitional qualities in children and inculcate habits of orderliness.
3. *Appropriateness of educational materials*—Pupils' ability to perceive ideas is strongly dependent on the material aids used in education; teachers must carefully select the correct and most useful means for impressing upon children new and related facts.
4. *Collective unity of the class*—Each teacher's individual qualities must be used in the lesson so as to get the entire class to succeed in its assigned work; the teacher strives to consolidate knowledge already learned by pupils, to improve their ability to acquire more, and to inspire all children to pull together in mastering the subject.

Along with the work of the daily lesson plan, homework is assigned in varying amounts, from the second grade up. Whenever possible, teachers relate assignments to the problems of everyday life and to environmental occurrences. From grade 5, homework is more closely related to the regular lesson plan and actually forms an extension of it. Ideally, home assignments are not to exceed 30 minutes for each main subject. Depending on the grade level and the number of times per week a subject is taught, homework varies from 2 to 4 hours a day, making an average total of 16 to 17 hours per week. Some Soviet educators with whom we talked were admittedly concerned about the amount of time pupils put into home assignments, and these educators were striving to improve classroom methods so as to reduce the homework load. They feel that the better training in both subjects and methods which a teacher receives will enable him to

enrich the learning process in class and thus lessen the load carried in after-school hours. Inservice training programs are playing an important part in this effort. One geography teacher in whose class the writers spent some time had eliminated all homework in world geography. Methods such as class projects in political and economic geography covered the prescribed subject matter in a way that left no work for outside completion.

In all the classes we visited, lecture by the teacher and recitation by pupils on specific topics assigned from the lesson plan were the main teaching methods employed. Particular examples of this practice will be found in subsequent chapters dealing with various teaching areas. Possibilities for pupils' voluntary expression and participation are limited; the essential feature of Soviet classroom pedagogics is that the pupil must master the prescribed topics and be able to perform correctly what is given or required in the textbook.

## MARKING SYSTEM

The marking system used in Soviet education is a unified one consisting of five number values. These standards have been used since 1944. Briefly, the values for each number-grade are as follows:

- 5—Means that the pupil (or student) has acquired an exhaustive knowledge of the subject matter, according to the program (syllabus); he has solidly mastered and understands the material precisely; in oral or written examinations, the pupil provides correct answers to all questions, works independently, applies facts to practical situations, and employs correct language in all forms of expression.
- 4—Means that the pupil knows all the required subject matter in the program; he has grasped and understands the material well; in examinations, he answers questions without difficulty, can apply knowledge practically, does not make serious mistakes, and employs written language with only minor mistakes.
- 3—Means that the pupil commands the fundamentals of the subject matter as required; in applying facts to practical tasks he has some difficulties which are overcome with moderate aid from the teacher; in spoken and written expression he makes mistakes.
- 2—Means the pupil reveals ignorance of most of the required subject matter; he answers only leading questions coming from the teacher; he makes numerous, serious mistakes in written work.
- 1—Means that the pupil is completely ignorant of the subject matter.

No arithmetical averages of a pupil's grades for all subjects taken in the year are made by Soviet educators, and the level of performance reached at the end of the year determines the grade. Pupils who obtain marks of 5 in *all* subjects in the curriculum are named gold medal winners; those who receive marks of 5 in

all the final exam subjects and 4 in no more than three other subjects are named silver medal winners.<sup>16</sup> Both categories of students earn special academic privileges with respect to entrance into higher institutions of learning.

Children are also graded on their personal conduct, inside and outside the school. A mark of 5 is given for normal, satisfactory conduct. When a pupil violates rules and receives a 4, the school's educational council takes note and watches for any further violation. Should a serious infringement of normal behavior occur, a 3 is given, in which case a pupil may be subject to dismissal from the school. If a child does not correct his behavior after initial violations, and becomes subject to a 2, he will be expelled by the educational council. This latter decision requires approval by the district educational department.

One example of class grading observed by the writer was the marking given for reading. The fourth grade class was asked to turn in the book to an unfamiliar text. The first child called upon read fluently one paragraph and then was asked questions by the teacher on the passage for comprehension. With some hesitancy the pupil answered the questions satisfactorily. The teacher recorded a mark of 5 and spoke it loud enough for all to hear. A second pupil, reading a new paragraph, had some difficulty with words and did not completely satisfy the teacher with answers to questions about the text read. This pupil received a 4. A third child read a third passage with marked ease and much expression. She was able to retell the part of the story (from Jules Verne) without any difficulty. This pupil received a 5.

Fourth grade Russian language work is graded, according to an official statement on marking,<sup>17</sup> in line with the following standards: for a 5, in written work, the pupil must clearly understand the story in the text; relate its content faithfully and without factual mistakes or substantive imprecisions; observe sequence; have no defects in the use of words or construction of sentences; and have no more than one error in punctuation. In mathematics for grades 8 through 10, for a mark of 5 the pupil must carry out written work completely and correctly, including the various steps in reaching answers and the giving of proof wherever appropriate. A 4 is given when there are one or two mistakes in written assignments.

<sup>16</sup> In 1969, final exams at the end of secondary school were required in Russian literature, algebra, geometry, physics, chemistry, history, and a foreign language.

<sup>17</sup> M. Deineko, *op. cit.*, pp. 249 ff.

In inspecting a number of school children's workbooks (copybooks) containing regular written work and quizzes, we noted that in the main the marking standards as established by Soviet educational authorities are maintained.

In school corridors and classrooms, one sees many posters and banners carrying quotations and slogans from Government and Communist pronouncements. Many of these quote Lenin, some Marx, and their apparent purpose is to inculcate on pupils the beliefs expressed in the quotations. For example, in an eighth grade biology class, we observed these two posted on the walls: "The human mind has discovered much that is unusual in nature and is discovering still more, thereby increasing its power over nature." (Lenin) "Philosophy merely explains the world in various ways, but the conclusion of the matter lies in the fact that the world will change itself." (Marx) In a polytechnic laboratory in physics, the following quotation appeared in large yellow letters on a red banner: "Communism—it is Soviet power plus the electrification of the entire country." (Lenin)

These and other quoted sayings from Communist leaders appeared to be aimed at invoking in young people a strong desire to understand and to master their material environment. In certain quotations, a clearly political as well as philosophic indoctrination was evidently intended.

#### OUTSIDE SCHOOL ACTIVITIES

While the classroom teaching process exemplifies the essential features of Soviet educational philosophy and methods, another important area of education and culture lies outside the regular school program. This area is the Pioneer organization with its many clubs and district or municipal "palaces." Existing separately or parallel to the school system, it nonetheless has very close ties with school programs. Adult leaders in the Pioneer activities come mostly from the teaching staff of the local schools. This relationship provides for a direct bridge between educational work in both school and club.

Every school participates to some extent in forming "circles" (clubs) at the local Pioneer house. Children with expansive interest in developing knowledge and skills are encouraged to join the Pioneer organization and to participate in the club activities. These activities may be built around a particular subject, like literature or chemistry, or around some problem in home-making or industry. An important aspect of the program would seem to be the emphasis placed on child interest and self-expression.

mote among children character-building activities consistent with Communist social and moral aims. These activities, we were told, should develop self-reliance and self-confidence, individual skills and talents, and respect for human values and for the "collective" \* (*kollektiv*, or group). The tutor's activities are mainly concentrated in after-school hours, when he works closely with the Pioneer and Komsomol organizations in developing programs for cultural enrichment and ideological upbringing. One tutor, who held the rank of senior tutor, with whom the writers spoke at some length, was a geography teacher in the regular school program. This man appeared to be an extremely able person. He holds a university-level degree from the Lenin Pedagogical Institute which, he was quick to point out to us, used to be the Second Moscow State University. He had 16 years of experience in teaching, was a singer and musician, and apparently had a fine personality. We felt that here were some qualities evidently sought in selecting a person for the new job of school tutor.

This tutor and the pupils put on a "talent" show for us which, we felt, merited particular praise for its organization, development of abilities, and spirit of comradeship. The tutor himself led and participated in parts of the program. We observed his conduct of an eighth grade class and were impressed with the teaching skills he employed.

#### PUPIL PROMOTIONS

As indicated earlier in this chapter, evidence suggests that nearly all pupils manage to pass the academic program. Only occasionally did we notice children obviously too old for their grade. This information is corroborated by findings of other careful observers of Soviet schools.

While precise data on the overall success and promotion of children in the U.S.S.R. are not available to us, it seems useful to report our findings in some schools. In the village school at Gorki-Leninskie near Moscow, which is now an 11-year school developing a full polytechnic education program, we were told that 80 percent of the graduates of the 7-year program go on to the upper grades (8 through 10 and now 11). Those who do not go on and decide to go to work can continue their education in a vocational school or in evening classes, correspondence programs, or special schools for working youth. These latter three programs lead to an academic high school certificate. Graduates of the 10- and 11-year programs who go on to higher education amount to about 30 percent of the graduating class. Not all within

this 30 percent can, however, be enrolled in the day programs. A little less than half of them will be admitted on an evening or correspondence basis. Some graduates go to 1-year vocational schools in agriculture, where on completion of the courses they will receive a trade specialty (such as machine operator) which qualifies them for a certain wage. In a school in a Georgian town near Tbilisi (southern Caucasus), 28 percent of the 7-year graduates went the previous year (1958) into vocational and technical schools, while the other 72 percent continued academic education in the eighth grade.

At 10-year School No. 14 in Zagorsk, a city of some 50,000 people, 90 percent of the pupils normally go on to the eighth grade. Upon graduation from grade 10 in 1958, about 20 percent enrolled in institutions of higher education. This school had an enrollment in 1959 of 1,500. In a smaller, 7-year school near Zagorsk, 17 pupils graduated in 1958. Of this number, 13 went on to the eighth grade, 2 enrolled in a vocational school, and 2 others went to work. In Moscow 11-year School No. 16, nearly 100 percent of the 7-year graduates continue their education into grade 8. From one class of 31 students completing grade 10 in 1958, 14 were accepted by institutions of higher education. From among 70 graduates of grade 10 at School No. 57 in Kiev, 34 enrolled in day programs of higher education, while the others are working but continuing their education in part-time programs.

These samples of promotion ratios taken at random substantially confirmed information later given us at the Ministry of Education in Moscow regarding pupil advancements. We were told that in urban regions (including the rural environs of major towns) between 70 and 80 percent of the youngsters go on to secondary school after grade 7; and that in the farming or rural areas, the figures vary but are around 50 percent. A small percentage of pupils today do not complete the seventh grade.

Statistics published by the Soviet Government in recent years do not give us enough information to speak with authority about enrollments as percentages of total age groups. Until official data collected during the recent Soviet population census become available,<sup>19</sup> it is unwise to attempt to give precise figures on how many Soviet children out of a specific age group are enrolled in various educational programs. Information given to us in the

<sup>19</sup> Cf. *Vestnik statistiki* (Journal of statistics), Moscow, No. 5, 1960. Additional statistical data, released in February 1960 (*Izvestia*, Feb. 4, 1960), can assist in further analyses of enrollment and promotion developments.

U.S.S.R. and other data enable us to point to the general directions of pupil promotions. From our visits in the western regions of the Soviet Union, it appears that there about half of the eligible age group is enrolled in the upper grades of 10-year (some 11-year) programs. Another not insignificant proportion is enrolled in secondary vocational and technical schools of various types. These proportions are not precise, and we were unable to have them verified. Pertinent to these considerations are the facts that approximately one-half of the entire Soviet population is rural, and that one-fourth of all children in the elementary grades (1 through 4) attend separate, 4-grade schools. As of 1955, 65 percent of these schools (rural and urban combined) had 40 pupils or less, and 57 percent of them had but one teacher. It is apparent from these data that the 10-year school, which incorporates all grades, has not yet become available to significant portions of the population. While some observers indicate that no more than one-third of all Soviet children have been going on to secondary education, we feel that this estimate may be somewhat low and that it likely has been closer to one-half. Recent changes obscure this picture. In either case, mass education now appears to be in effect in the U.S.S.R. The degree of success that Soviet teachers are having and will continue to have with their principles and methods of teaching will determine the level and quality of education in this mass system.

### Problems and Changes in Soviet Education

4- The unified school system and curriculum produce kinds and degrees of uniformity and conformity that are quite unfamiliar to an American observer. At first, one might think that here is an educational structure without major problems. Looking at the day-to-day pedagogical performances in the classrooms, our reaction was that this description of the situation appeared somewhat correct. We did, however, sense immediately a certain formalism in the school's learning exercise, which provided no indication that children develop skills to use knowledge. Pioneer work affords this opportunity for some children, however. The plan of studies, outlines of courses (syllabuses), official textbooks, and daily lesson schedules all provide ready-made devices for teacher control over the learning process and for measuring the amounts of information acquired. Teachers know their methods, pupils are eager to learn, and parents (especially many of those

who received little education themselves) are insistent that Ivan go to school.

The picture is not so calm as it first appears, and many Soviet educators with whom we talked discussed quite frankly what they thought was wrong with their schools. Studying their comments and following their educational publications as well as announcements by Government leaders in the U.S.S.R., we have been able to identify some of the major problem areas in Soviet education and the general direction in which it is moving.

Since the last major reforms initiated during 1931-32, the Russian general school has been primarily concerned with developing a strong academic program. This concern centered on the subjects whose mastery provided a necessary foundation for higher education, especially in mathematics, physical-natural sciences, and the mother tongue. Educational research aimed primarily to provide solutions to methods problems in subject-matter teaching, and to disseminate its findings and the experiences of the best schools to the field. With the various manpower needs, regulated to planned quota systems, this policy appeared to be satisfactory until recent years.

New problems arose, however, in connection with the economic, social, and intellectual development of the country. Briefly, these problems are: An unbalanced curricular structure, which requires all pupils to take the same subjects throughout the 7- and 10-year school programs; swelling enrollments in secondary education during the period 1950-1957; an impending fall in the age-group leaving schools for productive activities in society; unfavorable psychological attitudes of youth, especially in regard to occupational training and physical labor; need for improvement in selection procedures and in evaluating pupils' achievements; and need for providing for individual children's differences. We saw evidences of certain of these problems in the schools, spoke with Soviet educators about them and others, and have followed discussions in the Soviet press concerning some of them.

#### CURRICULUM

Leading Soviet educators in the Pedagogical Academy and also some school principals feel that, in the main, the old programs of study<sup>20</sup> constituted too heavy a load for Soviet youngsters. Obvious needs have arisen to facilitate the acquisition of mathematics, sciences, and technical drawing to lighten the load for specific time periods, and to reduce the program in social studies-

<sup>20</sup> See appendix I, table A, p. 218.



humanities. In discussing this matter in the Institute of the Theory and History of Pedagogy, the Director was careful to point out to us that the overall aim is *not* to reduce the quality of education, in the academic sense, but to make learning easier and more accessible to all children. The new curriculums being worked out are planned to introduce much more practical work than was previously offered, and at the same time they will lessen relatively (but *not* absolutely) the load of academic subjects as compared to the old curriculums.

Curriculum development is also going on in order to teach educative values of practical work (in shops and agricultural plots) and of production work (in shops and factories, and on farms). Pupils will spend many more hours than heretofore on activities involving manual as well as intellectual skills. Backgrounds for this development are discussed later in this chapter.

#### ENROLLMENTS

As the Soviet Union moved toward universal 7-year education in the postwar years, pupil enrollments in the upper secondary grades began to swell way beyond the numbers normally required to meet higher education quotas. From 1950 to 1955, for example, the number of students in grades 8, 9, and 10 of the regular day schools increased by 350 percent (from 1.5 million to 5.2 million). While graduates from these grades during that period mounted to 1.5 million a year, annual first-time enrollments in universities and institutes have been held consistently to around



Figure 1-4.—Manual arts work in second grade.

450,000. In some anticipation of the need to supply future secondary school graduates with some specialized knowledge or skill, the XIX Congress of the Communist Party of the Soviet Union (C.P.S.U.) in October 1952 passed a resolution calling on the schools to devise ways of changing their programs: "With the aim of raising further the socialist, educative significance of the general educational school, and of securing for pupils who fulfill secondary school conditions the free choice of a vocation, it is necessary to proceed toward effecting polytechnic instruction in secondary schools and to take measures necessary for the transfer toward general polytechnic education."<sup>21</sup>

Educational administrators set to work on this problem and also on efforts to direct academic high school graduates to other programs. New postsecondary vocational-technical schools were opened in 1954-55 to train skilled workers, in addition to the already existing network of technicums and other specialized institutions. These latter two types, formerly organized mainly for receiving 7-year school graduates, expanded their facilities for offering training to persons with 8 or 9 years of education and to graduates of the 10-year program.<sup>22</sup>

In very recent years, however, upper secondary enrollments in the regular day schools have fallen off rapidly, to the point where in 1958-59 the number fell to 3,400,000.<sup>23</sup> This drop is primarily due to the very low birth rate during wartime conditions (1941-45), compounded by heavy losses of life, both military and civilian.

#### LABOR MARKET

The drop, after 1957, by one-half in the number of youths of working age will have an effect on numbers available for industrial and agricultural employment during 1960-1965. With this situation imminent and with needs for technically literate youngsters ever on the increase, the new polytechnic training program is being introduced at a time when it can help meet these problems and when enrollments are lower and more manageable. Low

<sup>21</sup> M. Deineko, *Op. cit.*, p. 186.

<sup>22</sup> For example, see programs listed for the Moscow region in *Kuda poiti uchit'sia; spravochnik* (Where to go to study; a manual), Moscow, "Moskovskaya pravda," 1956, pp. 121-208; also M. Deineko, comp., *Gde poluchit' spetsialnost'; spravochnik* (Where to receive a specialty; a manual), Moscow, Uchpedgiz, 1956.

<sup>23</sup> Over 1.2 million others were enrolled in special schools for working youth and 1.1 million for adults, which offer complete academic programs. *Narodnoe khoziaistvo S.S.S.R. v 1959 godu.* (The national economy of the U.S.S.R. in 1959.) Moscow, Gosstatizdat, 1959. Pp. 115-117.

CHAPTER II

# Science and Mathematics in the General Schools

IT SEEMS NATURAL that, by virtue of the materialistic philosophy espoused by the Soviet Government, great emphasis should be placed on the natural sciences and mathematics. This view not only is reflected in the curriculums in institutions of education, but it also pervades the thinking of those who are in charge of educational programs.

Everywhere we visited we were impressed by the fact that the Soviet people are convinced that their destiny is closely linked with science and technology. They are proud of their successes with Sputniks and Luniks. They praise the accomplishments of such world-renowned scientists as Pavlov, Lobachevskii, and Mendeleev. They accord great respect and prestige to their large number of present-day scientists who are making names for themselves and pushing Soviet science and technology to the forefront. It was not surprising to us then that, when we interrogated pupils in the schools that we visited, a large percentage of them wanted to become scientists and engineers.

## Some Fundamental Soviet Ideas

While in the U.S.S.R., we had opportunity to discuss with leading educators the role that science and mathematics education plays in the schools of the Soviet Union. We wanted to learn from them what their views are on how much science and mathematics should be taught in the schools and how these subjects should be taught.

In our consultations with officials of the Russian Soviet Federated Socialist Republic (R.S.F.S.R.) Ministry of Education in Moscow and in discussions with researchers and teachers around the country we questioned the educational policy of requiring

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ss in shifting to new curriculums suggest that the best ed and staffed schools will be the ones to change their pro- first.

ed on evidence thus far published, it appears that the poly- school with labor experience will provide both the aca- and the prevocational (polytechnic) education with which youth will make their way in Soviet society. It also seems at that the nature of the 8-year school and the absence of a ement that children continue on to upper secondary school provide strong tendencies toward making the 8-year school a nal one for many youngsters. Future developments will ate the actual trends, and meantime many problems ad- dly lie ahead for Soviet educators.

feel that, depending on pupil selection and on teacher aration, the introduction of much more polytechnic and labor ation might change the emphasis of the overall program in academic disciplines. Such a change might occur especially ollments steadily increase and the new 11-year school be- es a unified, mass, and somewhat comprehensive educational tution. The vast majority of pupils will, upon graduation,

employment in the economy, while a small percentage will ify for institutions of higher education and postsecondary ols. Up until the decade of the 1950's, these latter institutions rbed most of the high school graduate. That Soviet educa- are thinking about ways to provide future academic enrich- it programs is evident in plans, which they discussed with us, provide special after-school classes in mathematics and the nces. Some experiments in academic "track" programs have o been taking place in a few secondary schools, and certain viet educators suggest introducing a multiple-program second- r school of a comprehensive type.<sup>30</sup> They also speak of an entual 12-year program in order to accommodate all youth.

It seems clear to us that the Soviet Union, on a mass scale, is w adjusting its educational system so as to make a general ucation with polytechnic emphasis available to all youth in the cades ahead. The "reform measures" appear to respond to onomic needs and technical development of the country, and to ain thus far an academic emphasis about the same as in the -year program. The exact character of these measures will e known, however, only as they are implemented in the schools nd authoritatively reported on.

<sup>30</sup> N. K. Goncharov, "O vvedenii furkatali v starshikh klassakh srednei shko" ("On intro- ducing multiple-track education in the senior grades of secondary school"), in *Sovetskaiia peda- gogika* (Soviet pedagogy), No. 6, 1958, p. 12 ff.