Selected aspects of education in statistics in Russia

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During the last ten years the system of education in the field of statistics in Russia has undergone noticeable changes as a result of economic reforms, changes in the institutional set up, in organization and methodology of official statistics; these changes have had a profound impact on the educational programs (curriculum) in statistics, on the textbooks, on the contents of lectures and practical exercises suggested to students at the seminars, on more intensive use of modern information technologies in educational process.

Statistical education in Russia was always and still is an integral element of the system of high economic education in Russia. At present time statistics is taught at the universities and at the institutions with economic orientation such as economic academies, universities, institutes and colleges. It is also taught at the institutes with so called humanitarian orientation such as, for example, Juridical Institute or the Institute of History and Archives and so forth; the mathematical statistics is taught in many non-humanitarian institutes.

The largest statistical educational establishments are located in Moscow, St. Petersburg, Novosibirsk, Rostov-on-Don, Samara, Kazan, Nizhniy Novgorod, Jaroslavl, Saratov, Voronezh, Stavropol and some other towns.

Broadly speaking, there are two types of economic institutions where statistics is taught.

The institutions where statistics is a predominant subject and where future professional statisticians are trained belong to the first type; the majority of graduates from these institutions work in national or regional statistical offices of the country, though some graduates may find jobs elsewhere: in government, research institutions or in business.

The Moscow State University of Economics, Statistics and Informatics (also known as Moscow Economic University) is a leading center of statistical education in Russia (it belongs to the first type). Prior to 1996 it was known as Moscow Institute of Economics and Statistics (MIES). It was established in 1932 and its major objective was to train statisticians as professionals who could work in national and regional statistical offices of the former USSR. The MIES also carried out intensive research in the field of economics and statistics, published textbooks and teaching programs on various branches of statistics, released recommendations on the methods of teaching of statistics and rendered assistance to statistical departments of other institutes and universities. The MIES had a system of post graduate training which made it possible to release specialists of high level of qualification capable to work as teachers in statistics and in other capacities in various government bodies and branches of economy.

In 1996 MIES was transformed into Moscow Economic University which took over the above mentioned functions of the MIES on a larger scale and a range of subjects taught at the university has been considerably expanded to include computerization of statistical process, econometrics,

information technology and some other topics.

At present time the Moscow Economic University provides educational services to 5000 students (including students studying statistics by correspondence).

The statistics is taught during the third, fourth and fifth years of studying and accounts for 35 per cent of the overall time. The students study the following subjects:

macroeconomic statistics, national accounting, social statistics, statistics of population, international statistics, statistics of market of goods and services, economics and statistics, statistics of firm (micro level), theory of statistics.

Special course on application of sample surveys is given in the context of more general course of the " theory of statistics".

A number of subjects are taught in the context of the course on mathematical statistics. They are as follows: elementary methods of analysis of statistical series; theory of probability; econometrics; econometric models; multidimensional statistical analysis; forecasting.

There are also courses on i) demographic statistics and social mobility and ii) statistics of activities of banks, insurance companies and firms.

Efforts are normally undertaken to involve the students in the actual practical work carried out by statistical national and regional statistical offices. For example, students normally participate in the censuses of population as interviewers or in other types of surveys; some students are provided opportunity to practice at the government agencies or at the enterprises.

The educational institutions with economic orientation where statistics is taught not as a predominant and yet as an important subject belong to the second type. There is a number of such institutions, but the most important among them is the Moscow State University (MSU) which has the economic faculty. Other important educational institutions in Moscow which have statistical departments include: Moscow University of Management, Financial Academy under the auspices of the Russian government, Moscow State University of Commerce, Russian Agricultural Academy, Moscow Institute of International Relationship, Russian Institute of Economics and Finance (provides educational services by correspondence).

In St. Petersburg the major institutions which have statistical departments include: St. Petersburg State University, St. Petersburg University of Economics and Finance, St. Petersburg State Agricultural University.

As a rule, the statistical departments (statistical chairs) in the above institutions are responsible for organization of teaching process; they compile programs (curriculum), organize lectures and seminars where students are urged to discuss the topics introduced to them during the lectures and are requested to carry out some exercises using the PCs, organize exams (as a rule, in written form); the statistical departments are also involved in the research work, which is carried out in cooperation with other organizations and quite often on a contractual basis for the national or

regional statistical offices, for enterprises or research organizations; the departments are also responsible for steering the research work of the postgraduates.

In accordance with the standards on general orientation of teaching in statistics approved by the government the following subjects are taught: theory of statistics; economic statistics; social statistics; international statistics; mathematical statistics.

The "theory of statistics" is an introductory course and it deals with such topics as organization of statistical observation, elementary methods of processing of statistical series, describing set of measurement (e.g., frequency distribution, measures of variability), elements of time series analysis (smoothing methods, adjustment for seasonal factor, etc), theory of probability and sample surveys, theory of indices, axiomatic and economic theories of indices and their impact on the choice of various index formulas, correlation and regression analysis.

The economic statistics is introduced to the students when they have got acquainted with principles of the theory of statistics. The topics covered by this course, as a rule, include: system of national accounts, economic classifications (e.g., classification of economic activities by industries or classification of goods and services), statistics of employment and unemployment, statistics of prices, external trade statistics, balance of payment statistics, government finance statistics (GFS), monetary and financial statistics and some other topics. It is worth noting that this course is intended to familiarize the students with both methodology used by official national statistics as well as with the respective international standards that is with the recommendations elaborated by the international organizations. Such approach is employed in the most consistent manner by the statistical department of Moscow State University. It is worth noting in this context that the" Program of transformation of business accounting and statistics in accordance with the international standards" adopted by the Russian government several years ago envisages among other things introduction of the international standards in statistics in the educational curriculum.

The course on social statistics covers such topics as population and its major demographic characteristics (size of population and its structure, rates of birth, death, natural increase, etc), statistics of social conditions of life, such as housing and communal services, educational, medical and cultural services, distribution of income and final consumption of population, social security system and the role of social benefits, social stratification and mobility, etc. It should be noted in this context that several years ago MSU and some other universities in cooperation with the UNDP introduced a course on Human Development; in the framework of this course there is an important statistical part dealing with measurement of Human Development (HD) and calculation of index of HD; the lectures on this statistical aspects are normally organized by the statistical departments. In 2000 year the MSU released a special textbook for this course.

In the context of the course on international statistics the students study such topics as the history of international statistics, contemporary organization of international statistics, the most important standards of international statistics (in the field of national accounts, balance of payments, GFS, employment and so forth), the most important statistical publications released by the international organizations. Special attention is paid to the methodology of the international comparisons of the GDP and purchasing power parities which are carried out by the international organizations.

The course on financial statistics includes such topics as statistics of finance of the enterprises, monetary and financial statistics, government finance statistics, money and banking statistics, balance of payment statistics, statistics of insurance and so forth.

As a rule, the teaching process assumes the following forms: lectures (50 per cent of the overall time), practical seminars where students discuss certain topics and issues, introduced in the lectures (50 per cent) or have to do some exercises, such as, for example, compilation of various indices, construction of certain national accounts and so forth; during this course the students are requested to write an essay on the topic suggested by the teacher and to write a "control work ". As a rule, the students work with the actual statistical data during the seminars, however, in some cases numerical exercises refer to hypothetical situations.

It should be noted that additional statistical education exists in Russia for the employees of national and regional statistical offices. The objective of this additional education is to raise the level of qualification of the staff, to introduce to them international standards, to acquaint them with the changes in methodology and in information technologies. The lectures and other forms of educational process are provided by the staff of the Moscow Institute on Professional Training in Statistics which exists under the auspices of Goskomstat of Russia.

The major current limitations and shortcomings of the present system of statistical education in Russia are, in our view, as follows:

- insufficient participation of many teachers of statistics in active research work; in many cases this participation exist only on paper;
- insufficient participation of many teachers in the seminars and conferences on important issues of economics and statistics and especially those held abroad; this limitation is largely due to the lack of resources;
- insufficient involvement of many teachers in writing articles and textbooks;
- in many cases the system of evaluation of teachers' performance by the students does not exist;
- on the whole still insufficient use of the modern technologies in teaching process;
- the system of the post graduate training has deteriorated during recent years because graduates do not have sufficient incentives to continue their education as the postgraduates; in most cases the graduates of universities and institutes look for the jobs in private sector (in banks, companies, etc.);
- although conferences on education in statistics are held regularly in Moscow relatively small number of teachers attend and many educational institutions located outside of Moscow do not send their representatives due to lack of resources and therefore many teachers of the country do not participate in the discussion of existing problems.

Thus, further progress in education in the field of statistics in Russia requires concrete steps needed to overcome the above mentioned limitations and shortcomings.

Key words: education, economic statistics, curriculum, theory, program, institution.