

METHODOLOGICAL BASICS OF EDUCATIONAL STATISTICS

1. Legal Basis

Educational statistics is constructed on the basis of the Regulation No. 452/2008 of the European Parliament and of the Council concerning the production and development of statistics on education and lifelong learning, the current legal basis in Bulgaria in the area of education, the International Standard Classification of Education - revision 2011 (ISCED 2011) and the concomitant methodological instructions. At the same time the main part of the methodology is formed by the methodological documents of Eurostat, which are connected with the preparation of the data and the filling in of the so called UOE annual education questionnaire (a joint questionnaire of UNESCO, OECD and Eurostat).

The basic legal and official acts in the Republic of Bulgaria which are directly implemented in the development of the methodology and organization of the current statistical surveys are: the Law on Statistics, the Pre-school and School Education Act, the Law on Vocational Education and Training, the Higher Education Act and the Law on the Development of the academic staff in the Republic of Bulgaria.

The data on school education are not comparable to those for previous years, since 2017/2018 school year because of considerable changes in the educational system structure resulting from the Pre-school and School Education Act¹.

2. Main Statistical Surveys

The National Statistical Institute conducts yearly exhaustive surveys that characterize the activity of the educational institutions:

- Pre-primary education in kindergartens (educational level ISCED - 0);
- Primary and lower secondary education, secondary education in all types of schools and vocational education after secondary education in the vocational colleges (educational levels ISCED - 1, 2, 3 and 4);
 - Vocational training against payment for attaining of vocational qualification in centers for vocational training centers (VTC), vocational gymnasiums, vocational colleges and vocational schools, covering the education of the individuals, which are older than 16 years and enrolled in vocational programmes against payment leading to vocational qualification, according to the Law on Vocational Education and Training (educational levels ISCED - 2, 3 and 4). The statistical survey on VTC has been conducted jointly with the National Agency for Vocational Education and Training, since 2012 via the use of an information system;
 - Tertiary education for acquiring the educational-qualification degrees 'Professional Bachelor', 'Bachelor' and 'Master' in colleges, universities and equivalent higher schools (educational level ISCED - 6 and 7). The statistical survey on higher education covers all authorized higher schools according to the Higher Education Act and the private spiritual higher schools, opened under the regulation of Law on Religion;
 - Tertiary education for acquiring the educational and scientific degree 'Doctor' in universities and scientific organizations (educational level ISCED - 8).

3. Main Statistical Units and their Breakdowns of Characteristics

3.1. Students enrolled (children in kindergartens, pupils, students, Ph.D. students)

3.1.1. Definition

A pupil/student is every person enrolled in an educational program of formal education according to ISCED irrespective of the mode of attendance. Formal education includes the educational programmes implement in the legitimate educational institutions created according

¹ Prom. SG No. 79/13 Oct. 2015, amend. and suppl. SG No. 98/9 Dec. 2016, amend. SG No. 105/30 Dec. 2016, amend. SG No. 58/18 July 2017, amend. and suppl. SG No. 99/12 Dec. 2017, amend. SG No. 24/16 March 2018.

to the existing legal order. Ph.D. students in scientific organisations are also included, irrespective of the mode of attendance.

NSI with its surveys is aiming to determine the number of students in the educational system as of a given date of observation. This is the basis for calculating the internationally accepted indicator 'Participation Rate of the Population in the Educational System', which represents the relative share of students enrolled from a certain age group in relation to the number of the constant population of the country in the same age group. According to the recommendations for filling in of the UOE-questionnaire, each country should make efforts to obtain the exact number of the enrolled students, without counting twice those which are enrolled in two specialties in the same higher school or in two educational institutions, i.e. **annually the number of enrolled students should be obtained by counting the students as persons and not by counting the number of enrolments.** For example in one university (college) according to the current national methodology, students are counted only once in the case of simultaneous enrolment in two specialties. Double counting is not allowed except in the case of illegal simultaneous study in two universities.

3.1.2. Reference date

The reference dates of observation for the different surveys are selected in such a way so to reflect adequately the number of students. The period of 15 - 30 days after the beginning of the school year turned out to be most suitable because in this period the status for each student is finally settled.

For the different surveys the observation dates are as follows:

- Pre-primary education - December 1;
- Basic and secondary education and vocational education after secondary education - October 1;
- Training for attainment of professional qualification in vocational training centers, vocational gymnasiums, vocational colleges and vocational schools - December 31;
- Tertiary education (Ph.D. excluded) - November 15;
- Ph.D. - December 31.

3.1.3. Main breakdowns of characteristics

The main breakdowns of characteristics for collecting data on enrolled students are: sex, year of birth, grade, repeating a grade, level of education, mode of attendance, type, profile and location of the primary (secondary) school, profession/specialty studied, citizenship and country of prior education (for tertiary students and Ph.D. students), studying of foreign languages, studying of mother tongue (for primary and secondary education).

Students studying in vocational classes at general schools are presented in the vocational education.

Foreign students are those students who are not citizens of the Republic of Bulgaria as well as those who have dual citizenship and have been enrolled under the regulations for foreign citizens.

The student mobility is measured by country of prior education which means that mobile student is a student who has graduated secondary education abroad.

3.1.4. Some particularities when distributing enrolled students by ISCED 2011 levels of education

- The students in the preparatory grade before first grade in classes for hard-hearing children and visually handicapped children are classified at the starting stage of basic education or level ISCED - 1 (basic education), because the program is different from the one for kindergartens.
- Students in VIII grade, enrolled in general profiled and vocational programmes with admission after completed VII grade are classified as ISCED 3 level, until the school year 2016/2017 including, for as much as these are overall programmes aiming at acquiring secondary education and are entirely conducted in gymnasiums, art and sport schools or vocational gymnasiums.

- Until the school year 2016/2017 including, students in vocational schools (VS) and in independent vocational classes with enrolment after VI and VII grade are classified as ISCED 2 level according to ISCED 2011 and those studying in VS with enrolment after VIII grade are classified as level 3 according to the same classification.

- For the school year 2017/2018 data on lower secondary education (V-VII grade) and secondary education (VIII-XII grade) are presented totally, because an additional classification of the educational programmes according to ISCED levels is needed.

3.1.5. Students who have left school are defined as students who were enrolled in the beginning of the previous school year but before its end due to some of the listed reasons had left the school. These students are observed by sex, grade groups and by reasons for leaving:

- With poor health who had not continued education in hospital or remedial school;
- Students up to 16 years old who moved to another school but without confirmation that they were enrolled;
- Left because of unwillingness to study, as a total and of which persons over 16 years of age included in this number;
- Left because of family reasons;
- Left because of going abroad.

Those who have left school cannot be treated as dropouts from the educational system because they could continue their education during the next school year and those who were under 16 years of age are obliged to continue their education.

3.2. Newly enrolled pupils/students

3.2.1. Definition

Pupils/students who have been enrolled for the first time in the initial grade or course of the respective educational level are considered newly enrolled. This means that those which have been enrolled in the same educational level previous years are not included to the number of the newly enrolled.

3.2.2. Main breakdowns of characteristics

The main breakdowns of characteristics for collecting data on the newly enrolled students are: sex, year of birth, educational level, mode of attendance, type, profile and location of the primary (secondary) school, profession/specialty taught, educational qualification degree (for tertiary education) and citizenship (for students in tertiary education and Ph.D. students).

3.3. Educational level graduates, who have received a certificate or a diploma

3.3.1. Definition

Graduates are those pupils/students who have received a document for a completed level from a legitimate educational institution, containing all the necessary records and stamps according to the law. According to the UOE-questionnaire requirements graduates are divided into two groups:

- Graduates who have received a diploma for the respective educational level for the first time;
- Graduates during the last school year who already have a diploma for the same educational level, obtained during previous periods.

At the present moment the NSI does not collect data separately on both groups of graduates. It is doing this only for their total number since the educational institutions themselves are not in a position to supply the NSI with reliable data separately for the two groups of graduates.

3.3.2. Main breakdowns of characteristics

The main breakdowns of characteristics for collecting data on graduated students are: sex, year of birth, mode of attendance, type, profile and location of the primary (secondary) school, profession/specialty taught, level of education attained (primary or secondary), degree of professional qualification attained, educational qualification degree (for tertiary education) and citizenship (for students in tertiary education and Ph.D. students).

3.4. Teachers/Academic staff

3.4.1. Definition

The teachers (academic staff) are official persons who directly conduct the training sessions according to curriculum irrespective of whether they are full or part time employees. Directors and assistant directors in primary and secondary education are observed separately although a great part of them may have lecturing functions as well. The academic staff in tertiary education (ISCED - 6 and 7) includes persons whose main engagement is teaching and research work. This staff includes the officials such as rectors, vice rectors, deans, heads of departments, etc. if their main engagement is teaching.

3.4.2. Main breakdowns of characteristics

The main breakdowns of characteristics for collecting data on teachers are: sex, age (5-year age groups), completed educational level, educational level for teaching, type and location of the primary (secondary) school, type of employment - full or part time.

Teachers in primary and secondary education are grouped by levels of teaching and by programme orientation (general education or vocational). In the cases when a teacher teaches in different levels, he/she is classified in the level where he/she has most school hours.

Teachers of vocational classes in general schools are presented in vocational education.

Academic staff in tertiary schools is studied by sex, age, type of employment (full or part time), by scientific titles - professors, associate professors, assistants, senior lecturers and lecturers and scientists with teaching activity.

3.5. Management personnel

3.5.1. Definition

The management personnel include official persons performing management functions at the level of the educational institution - principals, assistant principals, rectors, deans and their assistants, heads of departments.

3.5.2. Main breakdowns of characteristics are the same as those for teachers/academic staff.

4. Educational institutions

Educational institutions are main data sources for enrolments, teaching staff and other personnel. Type of educational institutions and their characteristics, determined by different criteria are integral part of essential indicators for enrolments and personnel.

4.1. Definition

An educational institution is defined as a center taking independent decisions, which performs educational services for persons and organizations and is established according to the rules of the law. This means that the institution has a manager (director, rector or another manager) i.e. that this is an 'independent' educational institution. 'Dependent' educational institutions are branches or units known under other names and are typically subordinate to an independent institution.

Teaching educational institutions are those, which directly perform training according to educational programs with students in organized classes (groups) at place or by a distant mode of attendance. Self-training persons and firms conducting qualification courses, language training and others do not come into the scope of the definition of teaching educational institutions.

4.2. Types of educational institutions and their main statistical characteristics.

4.2.1. Kindergartens

Main characteristics:

- Type of ownership (public and private)
- Type: all-day, remedial, special kindergartens for children with special educational needs and/or with chronic diseases, half-day, weekly, seasonal.

4.2.2. Schools² (I - XII grade)

² According to the Pre-school and School Education Act

Main characteristics

- Type: primary (I - IV grade), basic (I - VII grade), integrated (I – X grade), gymnasiums (VIII - XII grade), secondary (I - XII grade), vocational (art schools, sport schools, vocational gymnasiums providing training on programs for attainment of third and second level of professional qualification, including religious schools). Since 2011/2012 school year, with an amendment to the Law on Vocational Education and Training (State Gazette No. 50/2010), programmes in sport schools passed from general to vocational programmes providing training for attainment of III level professional qualification.

- Type of management: independent and dependent schools.

4.2.3. Vocational colleges with enrolment after secondary education.

Main characteristics: type of ownership (public and private).

4.2.4. Higher schools - colleges, universities and equivalent higher schools.

Main characteristics: type of ownership (public and private).

5. Specific classifications used

5.1. International Standard Classification of Education (ISCED 2011). ISCED was designed to serve as a framework to classify educational activities as defined in programmes and the resulting qualifications into internationally agreed categories. The basic concepts and definitions of ISCED are intended to be internationally valid and comprehensive of the full range of education systems. The classification rests on three components: internationally agreed concepts and definitions; the classification systems and mappings of education programmes and related qualifications in countries worldwide. ISCED 2011 was adopted at the 36st session of the General Conference of UNESCO and 2014 was defined as the first year for obligatory dissemination of statistical data distributed by the revised classification.

5.2. 'Classification of the fields of education and training 2008', approved by the president of the NSI and published in State Gazette, No. 91/09.11.2007. This classification has statute of national classification and completely corresponds to the Methodological instructions of Eurostat's 'Fields of Education and Training' (Manual, 1999). On the base of this classification, several specific classifications were developed and are being used as follows:

- Classification of the fields of education and specialties taught in the vocational gymnasiums, art and sport schools. This classification is being applied also for the vocational training after completed secondary education.

- Classification of fields of education and professions taught in the vocational schools and classes;

5.3. 'Classification of the fields of education and training 2015' published in State Gazette, No. 46/17.06.2016. The classification was developed on the basis of UNESCO 'ISCED Fields of Education and Training (ISCED-F 2013)' and the methodological document 'Fields of Education and Training (ISCED-F 2013) - Detailed field descriptions'.

5.4. Classification of the groups of specialties for acquiring the qualification and scientific degree Ph.D.

This classification is used in Ph.D. statistics and is based on a Council of Ministers Decree, published in State Gazette, No. 34/1990. As the classification is not harmonized with the requirements of the classifications mentioned from point 5.1. to point 5.3, a transition key is used for the purpose of ensuring internationally comparable data on Ph.D. students by fields of education. This key defines the correspondence of the specialties from the Bulgarian classification and the detailed fields of education and training of the international classification. In the list are also included new doctorate programmes, accredited by the National Evaluation and Accreditation Agency, since 2012.

6. Reducing the number of pupils/students and teachers/academic staff to a full-time equivalent

6.1. Definition of full and part time employed student/teacher

A student is considered full time if he/she is enrolled in a regular mode of attendance and part time if he/she is enrolled in another mode of attendance (correspondence courses, evening courses).

A teacher/academic staff member is considered full time employed if he/she works in an educational institution on a labour contract and has a full norm employment planned for the school year. If these conditions are not fulfilled, the teacher is considered part time employed. This last category includes also all part time teachers working on a second or civil contract.

6.2. Calculating the number of the pupils/students and teachers/academic staff into a full-time equivalent.

It is considered that the Full-time Equivalent (FTE) of a student of a regular mode of attendance is equal to one unit of FTE. The number of the part timers is reduced in FTE by dividing it by the so called converting factor which is equal to the ratio of the yearly length (in school hours) of the 'regular' program and the length of the correspondence or other respective programme. Thus if the regular program is twice the length of the correspondence, the converting factor is $K = 2$. If the students in the regular type are 200 and those in the correspondence are 100 then the $FTE = 200 + 100/K = 250$.

The FTE for teachers is calculated in similar way, with the converting factor for the part timers being determined as a ratio of the number of hours of the teachers working on a labor contract and the average number of hours of the part timers. For tertiary education FTE is calculated separately for every scientific title (professors, associate professors, senior lecturers, lecturers, assistants).

7. Scope of the Surveys

The statistical surveys cover enrolments, teaching and other staff in all legitimate educational institutions on the territory of the country including their branches.

8. Data Dissemination

Data from the statistical surveys of the pre-school, primary, secondary and tertiary education are disseminated by different means.

8.1. Statistical publications

NSI is publishing yearly the statistical publication 'Education in the Republic of Bulgaria'. Beside this, education data are included in the general publications of the NSI 'Statistical Yearbook' and 'Statistical Reference Book.'

8.2. Internet

The data in the NSI website and the Information system 'Infostat' are updated yearly.

8.3. Ad hoc data requests

Data are being given to:

- Other statistical bodies
- Local data users
- International organizations (UNESCO, Eurostat, OECD, UNICEF, World Bank).