THE EDUCATIONAL SYSTEM IN ROMANIA. TRENDS AND DEVELOPMENTS IN THE EARLY TWENTY-FIRST CENTURY

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Abstract: The evolution, humanity has faced many difficulties, such as physical or spiritual. General solution provider, which makes driving direction - progress or regression, one is beyond any bias, the educational system that has managed to develop each country. Influences and determines the quality of this system, an indisputable manner, the length and effective transition to the next stage of humanity: the knowledge society. This paper aims to evaluate the Romanian education system, from 2002 to 2010. Are pursued two main objectives: first, to clarify the situation in the period 2002-2007, and, secondly, the achievement of the forecast calculations for indicators that characterize education in Romania.

JEL classification: C82, C83, I21

Key words: educational system, indicators, assessment.

1. INTRODUCTION

Educational system understand complex social action cultural transmission, generation, organization and management of individual or collective learning. Man by nature is a cultural being, educated. Relationship between culture and education is that we understand by culture training, education and the education process of transmitting culture. Learning is, in fact, cultural assimilation. Educational content aimed at culture, knowledge, that all information, knowledge, goods and cultural products, values, etc.

For quantitative assessment of the education system, there are plenty of indicators - expressed both in absolute terms and relative value. The main indicators for assessing the educational system are:

- *school-age population (PVS)* – is the population whose age falls within specific educational levels according to regulations. Is determined based on demographic data and special censuses, representing people age 3-25 years, as follows: 4-6 years - for pre-school; 7-10 years - for primary education; 11 to 14 years - for secondary education; 15 to 18 years - for secondary and vocational education, secondary

education and apprenticeship; 19 to 23 years and over - for higher education;

- *school population (Ps)* – are all children, pupils and students enrolled in the training and education, a school year, whatever forms they attend school and age;

- *out of school population (Pn)* – includes persons who are of school age are not enrolled in an organized form of education:

  $Pn = Pvs – Ps;$

- *degree of coverage (GC)* – is calculated as percentage ratio between the number of school population and school-age population:

  $Gc = \dfrac{Ps}{Pvs} \cdot 100$;

- *four-year-olds in education participation rate (%)* – this indicator presents the percentage of the 4 year olds who are enrolled in education-oriented pre-primary institutions. These institutions provide education-oriented care for young children. They can either be schools or non-school settings, which generally come under authorities or ministries other than those responsible for education. They must recruit staff with specialised qualifications in education. Day nurseries, playgroups and day care centres, where the staff are not required to hold a qualification in education, are not included [5];

- *18-year-olds in education participation rates, all levels (%)* – this indicator gives the percentage of all 18-year-olds who are still in any kind of school (all ISCED levels). It gives an indication of the number of young people who have not abandoned their efforts to improve their skills through initial education and it includes both those who had a regular education career without any delays as well as those who are continuing even if they had to repeat some steps in the past [5];

- *loss of school (PES)* – are students who dropped further study during the school year or postgimnazial cycle, and analyzed either school year or cycle of education. School losses are determined based on variables „school students enrolled at the beginning of the cycle" (Ei), „school students transfer to and from school that year unit (Et), „graduate students at the end of school" (Ep), and „students deceased" (Ed), so:

  $Pes = Ei \pm Et – (Ep + Ed);$

- *student-teacher ratio (Rep)* – is calculated by dividing „the number of full time equivalent student" (E) to „number of teachers teaching full-time equivalents" (Pr). Only teachers in service (including special education teachers) are considered. Relationship calculation is as follows:

  $Rep = \dfrac{E}{Pr} \cdot 100$;

- *absenteeism* – is the phenomenon that reflects the students enrolled in an organized form of education do not attend formal schedule, for unjustified reasons. *Absenteeism rate (Ra)* can be applied to the average student, formation of study, subject, semester, school year, school unit, administrative unit, etc.. Is determined based on the variables „number of hours of absence" (Oa), „number of days of absence" (Za), „total number of students" (E), „all hours" (O) and „the number of days in the curricula" (Z):

$$Ra = \frac{\dfrac{\sum Oa}{\sum Za}}{\dfrac{E \cdot O}{Z}} ;$$

- **promovability** – is analyzed by *graduated rate (Rp),* which is calculated as percentage ratio between „number of students who passed the school year" (Ep) and „the total number of students" (E):

$$Rp = \frac{Ep}{E} \cdot 100 ;$$

- **intake rate (Rad)** – is calculated as percentage ratio between „number of first year students study a level of education" (E1) and „the number of final year students study the lower level who attended school the previous year" (Eu):

$$Rad = \frac{E1}{Eu} \cdot 100 ;$$

- **school leavers** – is where a student has attended school some time after leaving school with no intention to come back. *Dropout rate (Ras)* is calculated as percentage ratio between „number of students who left school" (A) and „the total number of students who were enrolled in that school year" (E) based on the relationship:

$$Ras = \frac{A}{E} \cdot 100 ;$$

- **early school-leavers** – percentage of thepopulation aged 18-24 with at most lower secondary education andnot in further education or training. From 20 November 2009, this indicator is based on annual averages of quarterly data instead of one unique reference quarter in spring. See footnotes for further details. Early school leavers refers to persons aged 18 to 24 fulfilling the following two conditions: first, the highest level of education or training attained is ISCED 0, 1, 2 or 3c short, second, respondents declared not having received any education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding no answers to the questions "highest level of education or training attained" and "participation to education and training". Both the numerators and the denominators come from the EU Labour Force Survey [5];

- **illiteracy** – is a cultural and educational status of adults who can not read or write and did not attend an organized form of education. Determine *the rate of illiteracy (Rab)* as percentage ratio between „number of people who do not know how to read and write" (Pa) and „the total number of persons" (P):

$$Rab = \frac{Pa}{P} \cdot 100 ;$$

- **total population having completed at least upper secondary education, population aged 25 to 64 (%)** – the indicator shows the percentage of the adult population (25-64 years old) that has completed upper secondary education. The indicator aims to measure the share of the population that is likely to have the minimum necessary qualifications to actively participate in social and economic life. It should be noted that completion of upper secondary education can be achieved in European countries after varying lengths of study, according to different national educational systems [5];

- **share of women among tertiary students; Women among students in ISCED 5-6 - as**

% of thetotal students at this level total - science, mathematics and computing - engineering, manufacture and construction (%) – this indicator presents the percentage of women among all students in tertiary education irrespective of field of education and among all students in the fields of mathematics, science and computing and in the fields of engineering, manufacturing and construction. The levels and fields of education and training used, follow the 1997 version of the International Standard Classification of Education (ISCED97) and the Eurostat manual of fields of education and training (1999) [5].

2. EVOLUTION OF EDUCATIONAL SYSTEM IN ROMANIA, IN THE PERIOD 2002-2010

Education indicators are among the significant indicators of the level and effects of investment in human capital, because it currently depends on quality, especially in perspective, economic and social progress of each country.

Table no. 1 presents the general indicators of education in our country during 2002-2010. Number of schools is decreasing, while the enrolled population seems to resume their downward trend after the year 2007/2008 increased slightly. Number of children in kindergartens is increasing the number of pupils falls and the number of students continue their growth. Number of teachers staff after an increase in the 2004/2005 school year, reinforcing its gradually decreasing trend (in these estimates did not take into account the reduction scheduled for 2010 with 15,000 employees in the education system). Number of pupils per teacher is kept on the range of 15 to 16 students to one teacher.

Table no.1 General indicators of the education system in Romania during 2002-2010.

School year	2002 / 2003	2003 / 2004	2004 / 2005	2005 / 2006	2006 / 2007	2007 / 2008	2008 / 2009	2009 / 2010
Units	23679	18012	14396	11865	8484	8230	7930	7121
Enrolled population	4496786	4472493	4403880	4360831	4345581	4404581	4325544	4300264
Children in kindergartens	629703	636709	644911	648338	648862	650324	657440	661526
Pupils	3270786	3214999	3108634	2996029	2911213	2846904	2743757	2653946
Students	596297	620785	650335	716464	785506	907353	924347	984792
Teachers staff	286670	281272	285861	281034	277318	276849	274921	273041
Number of pupils upon a teacher	15.69	15.90	15.41	15.52	15.67	15.91	15.73	15.69

Source: NIS for the period 2002-2008, private estimates for the year 2008/2010

Evolution of schools in the period 2002-2010 (Table no. 2) show an increase in kindergarten in 2007-2009, when over the period 2002 to 2007 it declined continuously. Note, the table is the fact that most of their schools increase their number (the primary and secondary schools, vocational and apprenticeship schools, tertiary education institutions). Also not taken into account in achieving the estimates for the past two years the planned reform in education from school year 2010-2011, which aims to reduce the number of schools.

Evolution of teaching staff by level of education, shows an increase during 2002-2010 kindergarten staff. All growth records and staff in tertiary education. Staff in primary and secondary education, vocational and apprenticeship education, and post high school and foremen education fell. High school staff has developed oscillating around 60,000 employees (Table no. 3).

Table no. 2. Evolution of schools in Romania, by level of education, from 2002 to 2010.

School year	2002 / 2003	2003 / 2004	2004 / 2005	2005 / 2006	2006 / 2007	2007 / 2008	2008 / 2009	2009 / 2010
Kindergartens	9547	7616	5687	3769	1720	1731	1742	1753
Primary and Secondary schools	12456	8714	7023	6411	5045	4737	4429	3592
High schools	1388	1397	1413	1410	1421	1426	1431	1436
Vocational and apprenticeship schools	85	79	77	90	115	147	142	154
Post high school and foremen education schools	78	84	79	78	79	83	81	81
Tertiary education institutions	125	122	117	107	104	106	105	104

Source: NIS for the period 2002-2008, private estimates for the year 2008/2010

Table no. 3. Evolution teachers in Romania, by level of education, from 2002 to 2010.

School year	2002 / 2003	2003 / 2004	2004 / 2005	2005 / 2006	2006 / 2007	2007 / 2008	2008 / 2009	2009 / 2010
Pre-school education	34307	34585	35288	35755	36555	37348	37798	38415
Primary and secondary education	154197	150510	150168	144489	141601	138972	135803	132702
High school education	60988	58925	62192	61914	62048	61620	62506	62856
Vocational and apprenticeship education	6063	5782	6290	6234	5643	5939	5883	5852
Post high school and foremen education	1496	1333	1066	1099	888	1006	773	666
Tertiary education	29619	30137	30857	31543	30583	31964	32159	32552

Source: NIS for the period 2002-2008, private estimates for the year 2008/2010

Evolution of graduates in Romania, by level of education, in the period 2002-2010 is presented in Table no. 4. Number of graduates from secondary education declined, like that of post high school and foremen education. The other three categories - high school, vocational and apprenticeship, and tertiary education - we increases the number of graduates.

Table no. 4. Evolution of graduates in Romania, by level of education, from 2002 to 2010.

School year	2002 / 2003	2003 / 2004	2004 / 2005	2005 / 2006	2006 / 2007	2007 / 2008	2008 / 2009	2009 / 2010
Secondary education	307551	296777	265179	231842	219507	191864	167762	143660
High school education	173584	172371	177576	185255	187576	191533	195620	199707
Vocational and apprenticeship education	83294	77762	152875	150187	133829	171638	188987	206337
Post high school and foremen education	25337	22636	18530	15899	12660	9385	6176	2967
Tertiary education	103402	110533	108475	112244	125499	125802	130393	134983

Source: NIS for the period 2002-2007, private estimates for the year 2007/2009

From the perspective of higher education in Romania, it is interesting to analyze the distribution of students' majors (Table no. 5). Thus, the total number of students increased, reaching from 596,297 (2002/2003 school year) to 984,793 (during the school year 2009/2010). A similar situation is found for all specialties, without exception.

Figure 1 shows the detailed structure of students' majors. In 2002/2003 academic year the largest share was held by students of specialty "University-teaching" (30.29%), followed by the "Economics" (26.53%), and "Technical" (25.58%). During the academic year 2009/2010 hierarchy is managed by students at the "Economics" (33.68%), students at specialization "University-teaching" passed second place with 29.65%, and the place

third are students at the "Technical" with 18.91%. Students from the "Medical-Pharmaceutical" hold a share of 4.57%, while students at the "Art" were only 1.25%.

Table no. 5. Evolution of students from Romania, specialization groups in the period 2002-2010.

Group of specializations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010
Students enrolled - total	596297	620785	650335	716464	785506	907353	924348	984793
Technical	152547	158014	161850	164736	170921	178258	181404	186266
Medicine and pharmacy	32495	33072	35039	36422	40028	41398	43086	44993
Economics	158185	172409	188505	221619	242330	294417	305315	331716
Law science	63456	60613	59621	63586	82696	116538	107981	117570
University-pedagogy	180603	187141	195190	218860	238711	265624	274703	291946
Artistic	9011	9536	10130	11241	10820	11118	11859	12302

Source: NIS for the period 2002-2008, private estimates for the year 2008/2010
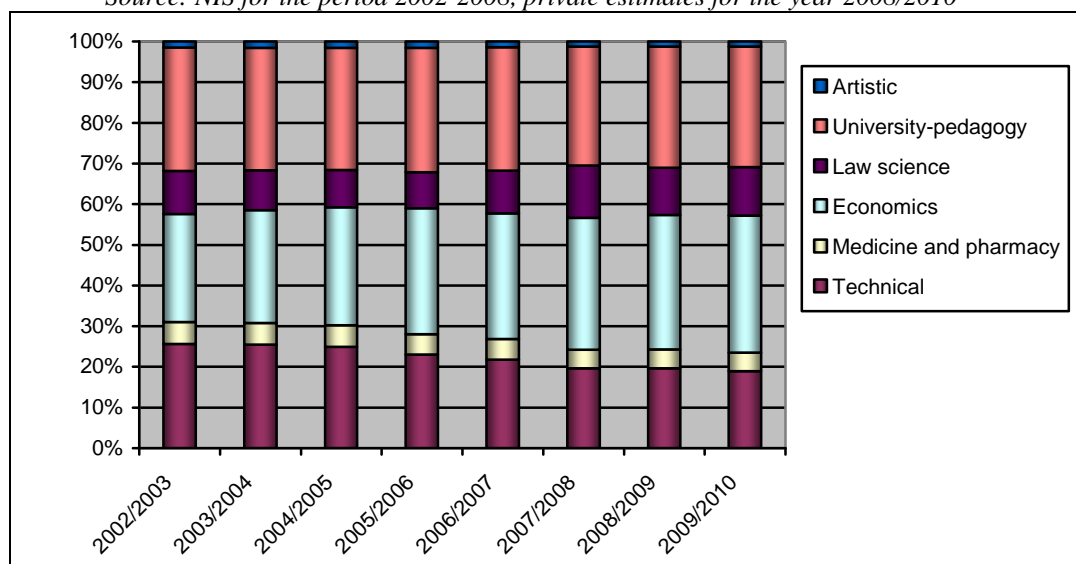
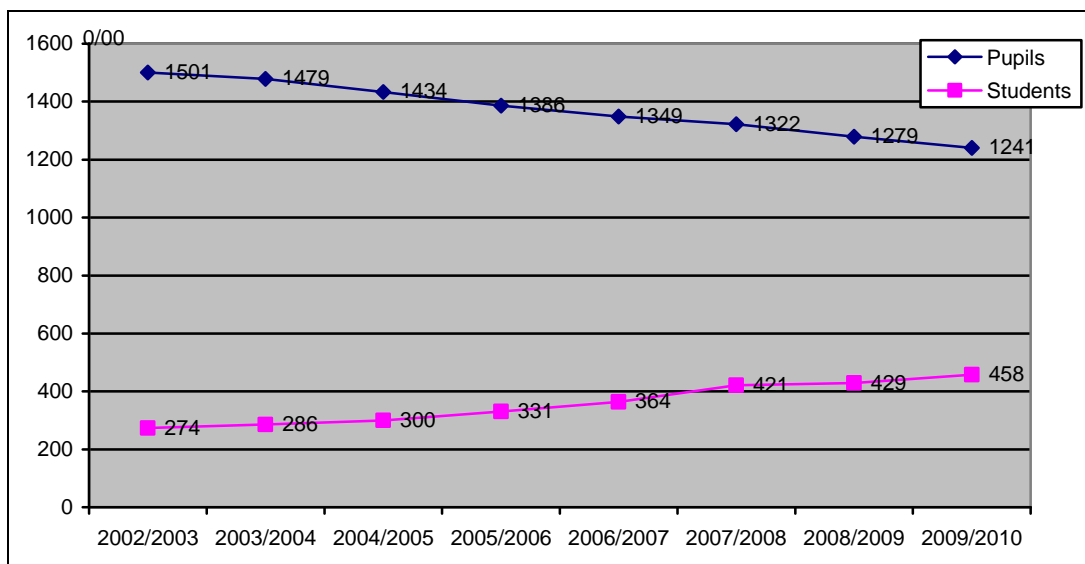Source: NIS for the period 2002-2008, private estimates for the year 2008/2010

Fig. 1. Evolution of students on majors, in Romania, during 2002-2010.

Evolution rate for pupils and students per 10,000 population in Romania, during 2002-2010, is shown in Figure 2.

Figure 2 shows that the rate of students from 10,000, although higher than the 10,000 students, recorded sales, while the latter is increasing, nearly doubling from 2002 to 2010.
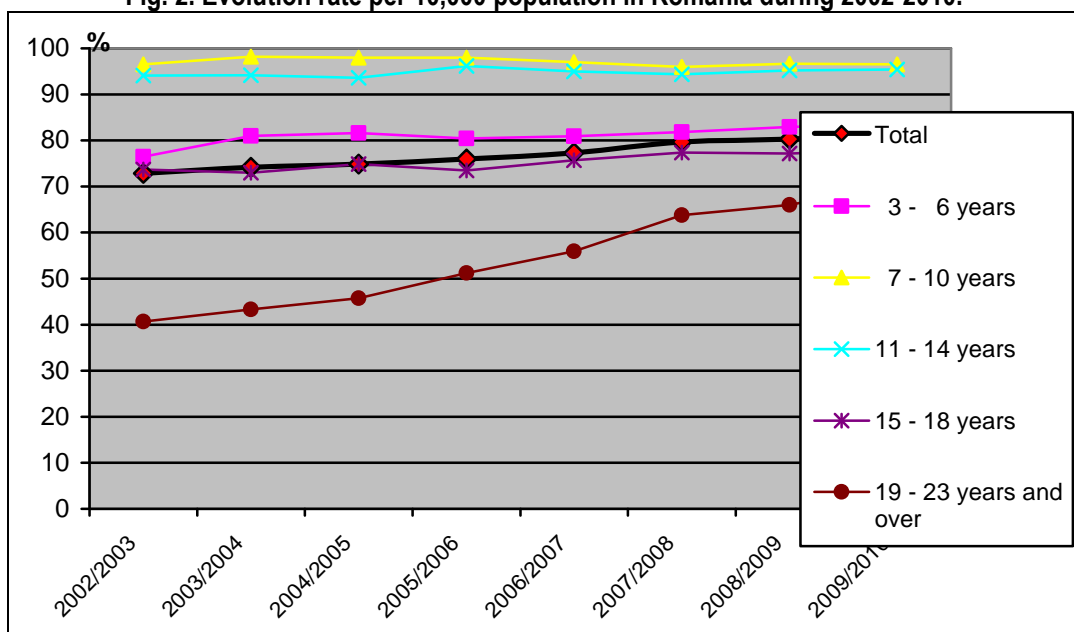
Degree in education coverage of school-age population in Romania, age groups, from 2002-2010, is shown in Figure 3. The total degree of coverage in the education of the population is growing between 70 and 80%, exceeding the upper limit of that range last year. Age groups, the highest level is met for the population of "7-10 years" and "11-14 years" (90%). Lowest level occurs in people aged "19-23 years and over", but that is booming and has exceeded 60%.

An interesting situation for our country is evident from Figure 4, the overall level of coverage we see how the education of the population (growing) is engaged to the degree of coverage for females (upper) and the degree of coverage for the male population (below).
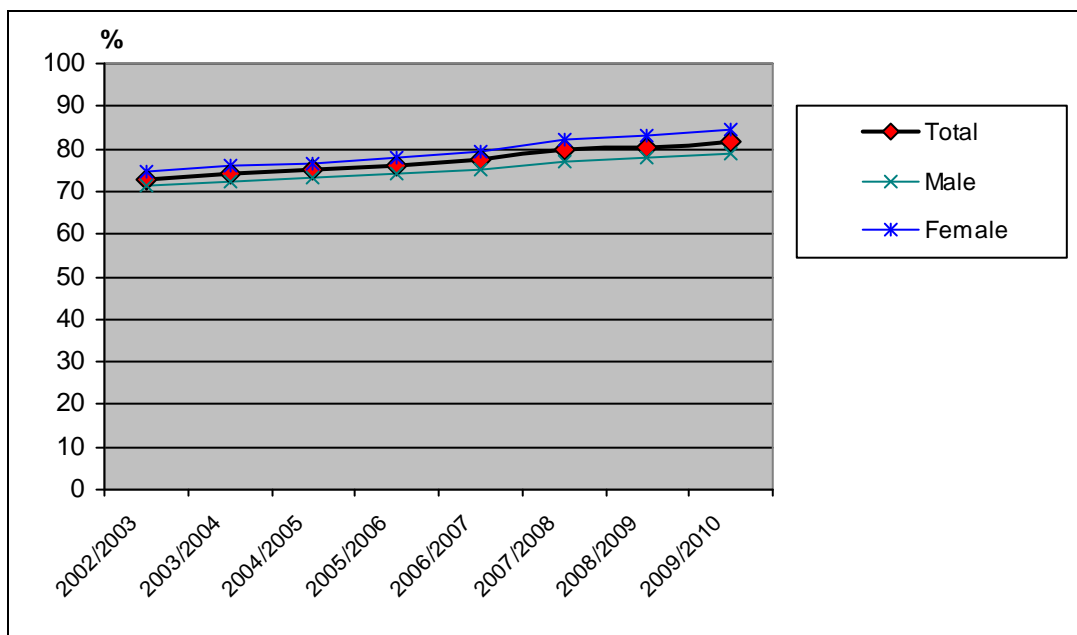
Fig. 2. Evolution rate per 10,000 population in Romania during 2002-2010.

Fig. 3. Developments in education coverage level of school-age population, by age group in Romania during 2002-2010.

Source: NIS for the period 2002-2008, private estimates for the year 2008/2010

Fig. 4. Developments in education coverage level of school-age population in Romania, by sex, during 2002-2010.

Another relevant indicator is the "abandon rate in pre-university education". The highest level of abandonment is made for pupils "Post high school and foremen education" (over 8% in most years) - Figure 5. To compete with this category for four of the seven years of analysis, students are to "Vocational and apprenticeship education". Lowest level of drop-out rates occur in pupils' "primary and secondary education".
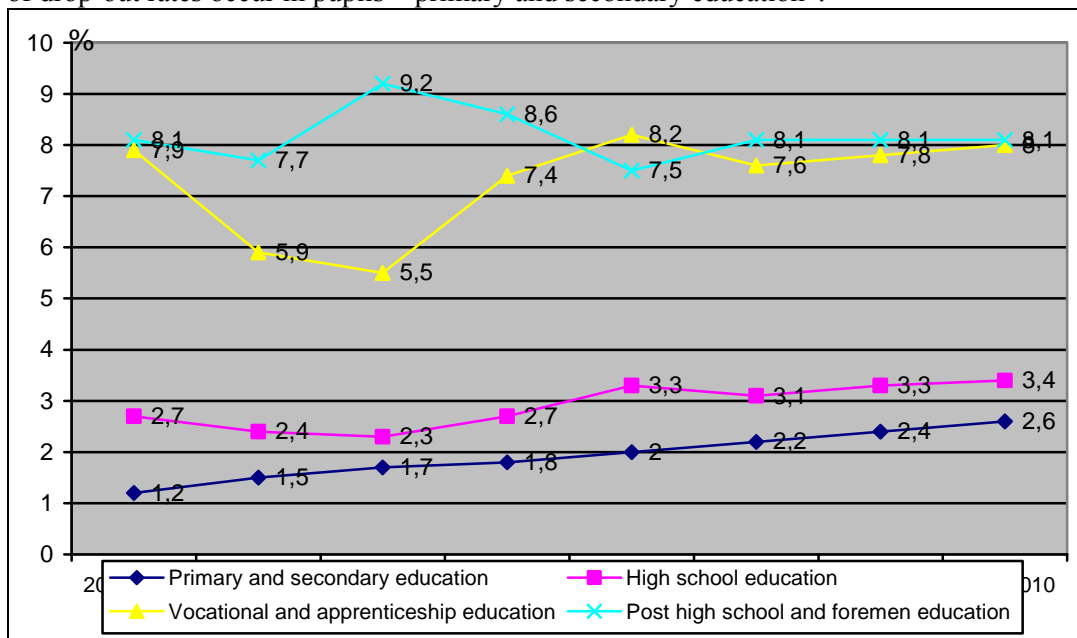
Source: NIS for the period 2002-2007, private estimates for the year 2007/2010

Fig. 5. Evolution of "abandon rate in pre-university education" in Romania during 2002-2010.

Abandon rate in pre-university education in Romania, by development region, in 2006/2007 school year, is depicted in Figure 6. In "Primary and secondary education" the highest drop-out rate has West Region (2.5%) and lowest South-West Oltenia (1.5%). To "High school education" the highest rate of abandonment have a Center and Southeast regions (3.8%) and lowest Northeast Region (2.9%). To "Vocational and apprenticeship education" highest rate of abandonment is a Bucharest-Ilfov Region (9.4%) and lowest South-West Oltenia (7.0%). To "Post high school and foremen education" the highest drop-out rate has West Region (11.7%) and lowest Region Bucharest-Ilfov (3.4%).
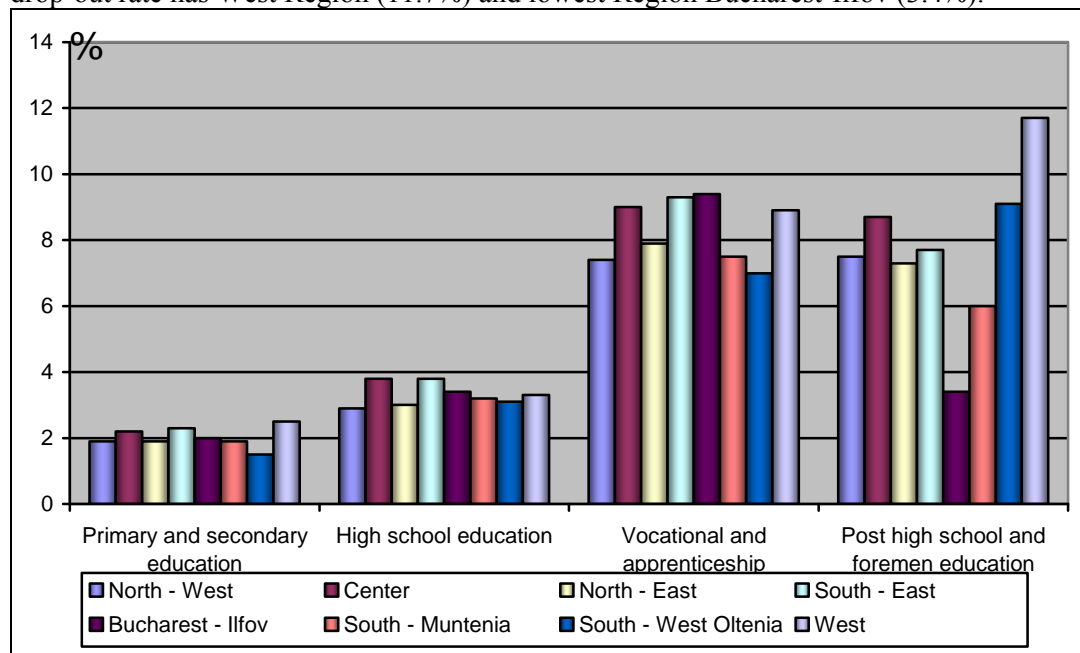
Source: NIS

Fig. 6. Evolution of "Abandon rate in pre-university education" in Romania, by development regions, in 2006/2007 school year.

3. CONCLUSIONS

In Romania, the number of schools is declining, as well as the school population. Number of children in kindergartens is increasing the number of pupils falls and the number of students continue their growth. Number of teachers staff strengthen their downward trend. During 2002-2010, the number of graduates of secondary education and post high school and foremen education declined, while the other three categories (high school, vocational and apprenticeship, and tertiary education) have increased. Distribution analysis shows that students in the specializations in academic year 2009/2010, the chain is run by students at the "Economics", students of specialty "University-pedagogy" passed on the second and third place students are the "Technical". Evolution rate per 10,000 population of pupils and students in Romania shows that students rate, although higher than the students, recorded sales, while the latter is increasing. Degree in education coverage of school-age population in the period 2002-2010, in Romania is growing. "Abandon rate in pre-university education" is highest for pupils "Post high school and foremen education". Leading regions in terms of drop-out rates are: West Region (the "Primary and secondary education" and "Post high school and foremen education"),

Center and South East Regions ("High school education") and Bucharest-Ilfov Region ("Vocational and apprenticeship education").

REFERENCES

1.	Ciurlău, C., Enea-Smarandache, I., Murăriţa, I., Ciurlău, C.F., Ciobanu, A.M.	ECONOMIC FORECAST. Theory. Choice test. Applications, Universitaria Publishing House, Craiova, 2008
2.	Murăriţa, I.	Socio-economic development forecast of the Jiu Valley area, Universitaria Publishing House, Craiova, 2007
3.	Radu, C., Ionaşcu, C.M., Murăriţa, I.	Theoretical statistical, Edition II, Universitaria Publishing House, Craiova, 2009
4.	* * *	Statistical Yearbook of Romania, National Institute of Statistics, Bucharest, 1990-2008
5.	* * *	Eurostat, http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/