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**THE EXTENT, INTENSITY AND DIRECTIONS
OF SPATIAL EFFECT OF SECONDARY LEVEL
EDUCATION SYSTEM IN TORUŃ**

**THE STRUCTURE OF SECONDARY EDUCATION —
GENERAL VIEW**

While deep socio-economic changes proceed in Poland, one can observe new tendencies and directions of spatial behaviour of population. This is also reflected in the range of spatial effect of secondary education. Its range decreases and on the other hand — number of pupils grows in number, i.e. its intensity increases.

Toruń is the important centre of secondary education for youths coming from all the Toruń province as well as neighbour ones. Nowadays the secondary schools (except for after-secondary ones) attend over 18 thousand pupils. During last ten years number of secondary level students revealed increasing tendency. Just only in 1987/1988 school year there was 13.8 thousand pupils, while in the year 1992/1993 16.6 thousand and in 1996/1997 already over 18 thousand.

During investigated period the structure of secondary education underwent changes, but it is not discussed in this paper. One should mention however, that in Toruń 13 general secondary school (high school, gymnasium) attend some 36% of total students number (in 1987/1988 only 18%), 6 vocational general schools: 9% (1987/1988: 16%), 14 technical primary-based schools: 23% (19%), 9 technical vocational-secondary based schools: 5% (6%), 12 basic vocational schools for not working youths: 14% (19%), 5 basic vocational schools for working youths: 12% (21%) and 1 special basic vocational school: 1% (1%) — see table 1.

Table 1. Proportional distribution of secondary school students in Toruń within particular types of school with regard to sex in the years 1987/1988, 1992/1993 and 1996/1997

Type of school	1987/1988					1992/1993					1996/1997				
	G	B	The proportional share in total number of secondary schools students			G	B	The proportional share in total number of secondary schools students			G	B	The proportional share in total number of secondary schools students		
			T	G	B			T	G	B			T	G	B
General education	69	31	18	24	11	66	34	26	36	17	65	35	36	48	24
General vocational	81	19	16	26	7	94	6	9	17	1	77	23	9	14	4
Technical based on primary sch.	32	68	19	12	26	31	69	23	14	30	30	70	23	14	31
Technical based on vocational sch.	36	64	6	4	8	45	55	4	4	5	27	73	5	3	7
Basic vocational for not working youths	47	53	19	18	20	40	60	22	18	25	38	62	14	11	17
Basic vocational for working youths	35	65	21	15	27	31	69	15	10	20	37	63	12	9	15
Special vocational	39	61	1	1	1	44	56	1	1	2	47	53	1	1	2
Total	51	49	100	100	100	48	52	100	100	100	49	51	100	100	100

Explanations: G — school-girls, B — school-boys, T — total.

In general, the number of students in secondary schools reveals growth tendency (fig. 2), it especially concerns general and technical schools, in contrary to the basic vocational ones, where number of pupils drops. In the period of interest it was 14% (fig. 1).

During analysed period there took place change of proportion in school-girls and school-boys number, that learn at secondary schools. Perhaps this is due to changes in the sex and age structure of population.

The range and directions of spatial effect of secondary schools are influenced by various factors: profile and size of school, diversity and attractiveness of education types, tradition, quality of teaching, distance to the pupils' home places and transport connections (possibility of easy access).

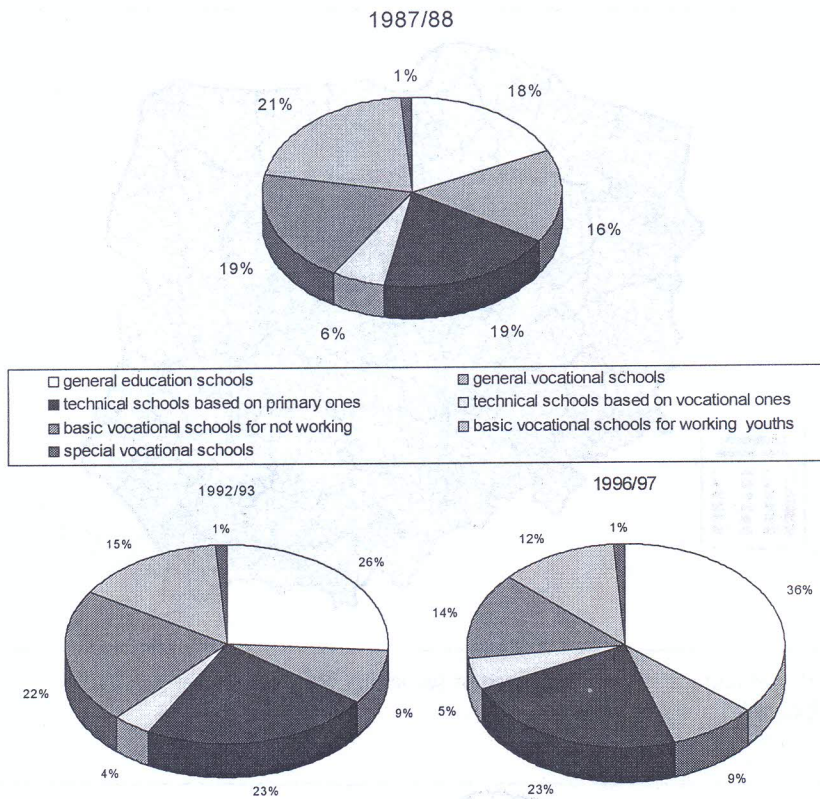


Fig. 1. Number of students attending all type of secondary schools in Toruń in the years 1987/1988, 1992/1993 and 1996/1997

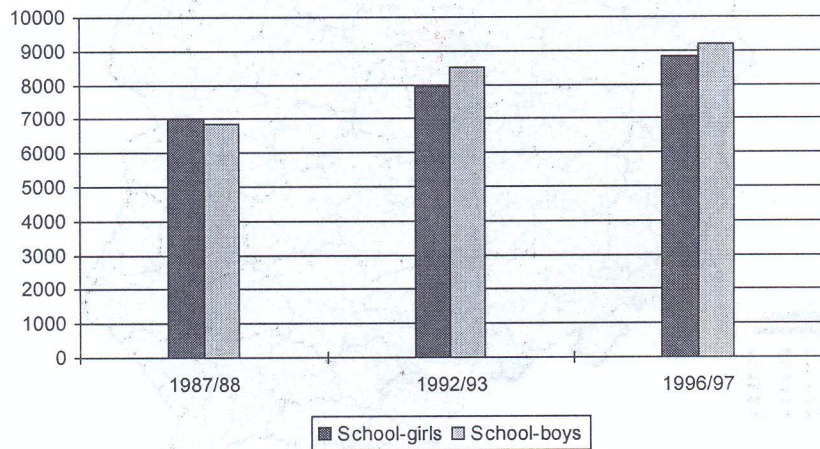


Fig. 2. Number of school-girls and school-boys in secondary schools in Toruń in years 1987/1988, 1992/1993 and 1996/1997. The range, intensity and directions of spatial effect of secondary education in Toruń

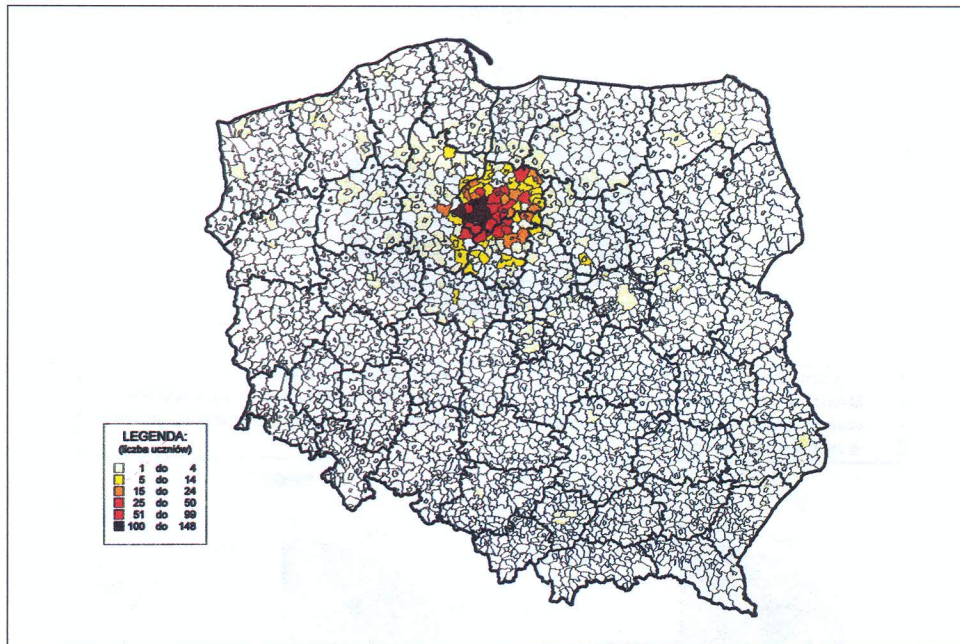


Fig. 3. Range and intensity of influence of secondary Toruń schools in 1987/1988
Legend: number of students

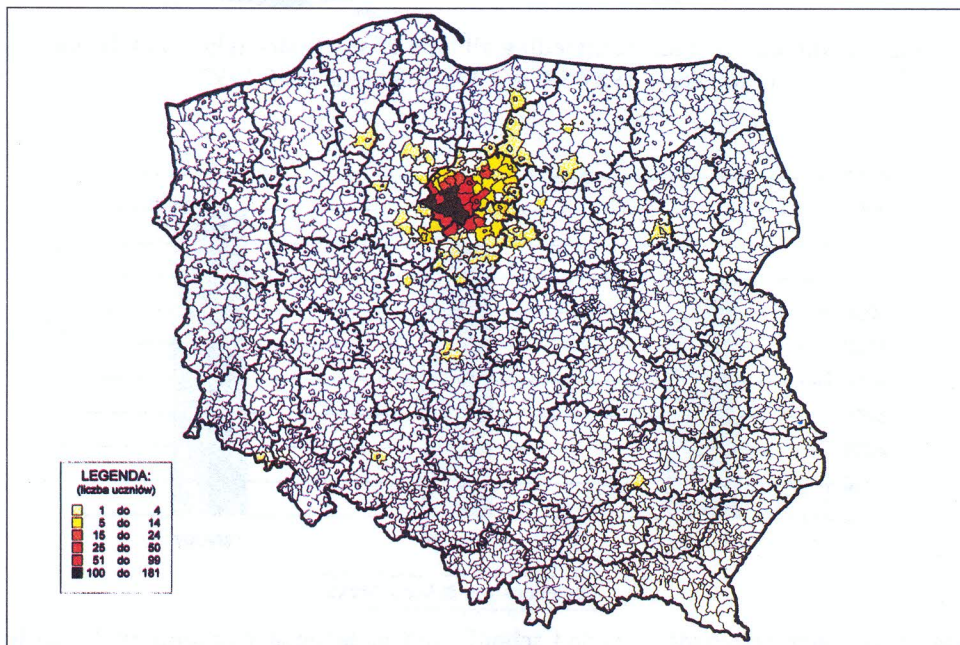


Fig. 4. Range and intensity of influence of secondary Toruń schools in 1995/1996
Legend: number of students

The range of general secondary schools influence in 1987/1988 school year covered mainly southern part of Toruń province and only few communes outside it. Most distant place located in the general schools influence area in 1987/1988 was Mała Wieś in Płock voivodeship. The intensity of the effect diminishes as the distance from Toruń grows. Among those travelling daily to schools, most of all pupils came from places situated more close to Toruń, from communes: Lubicz, Łysomice and Łubianka.

In the school year 1996/1997 the extent and intensity of Toruń general schools influence grew larger. The range comprised south-western, central and north-eastern part of the province, taking the shape of belt. These schools had also the effect on northern part of Włocławek province and several communes belonging to other provinces. Most far places of daily travelling to general schools in Toruń are: Szczytno (Olsztyn province), Babimost (Zielona Góra province) and Człuchów (Śląsk province). Szczytno and Babimost, lie in the influence zone of Toruń general schools. Also the intensity of influence increased in 1996/1997. Most students travel from south-western, central part of the province and from the Jabłonowo commune. During investigated period the augmentation of discussed process became noticeable in north-eastern and central part of Toruń province.

Number of factors influenced growth of the extent and intensity of above mentioned schools acting in last years. The education embraced youths of demographic explosion, 8 general schools having attractive education profiles were erected, general schools in places of residence were short of education diversity, youths' interest in general secondary education increased and the transport connections to Toruń has been improved. One should notice, that from the midst of all examined secondary schools only general ones were characterised by large growth of range and intensity of influence. In other schools one could observe decrease in the number of daily travelling youths or its inconsiderable increase, what finally led to extenuation of these schools influencing area.

As far as the general vocational schools are concerned, in the year 1987/1988 they had largest extent of influence, because these schools were attended by pupils from communes of all north-western and central Poland. Almost whole Toruń province area was the part of this zone — only six communes stayed away. Most youths came from south-western part of the province and from communes: Aleksandrów Kujawski (Włocławek province), Śliwice, Świecie and Bydgoszcz (Bydgoszcz province). The reason of such far influence of general vocational schools was that some kind of these school types were situated in Toruń, while they were missing in even distant places. They were: General Vocational School of Historical Monument's Preservation, Teachers Study, and after all — General Military School. The free boarding school, free tickets for travelling home and pref-

erences given to pupils when starting education at high military schools, were tempting youths to enter the latter secondary school.

In the year 1996/1997 influence zone of general vocational schools of Toruń grew less. That year students came mainly from south-western and central part of Toruń province and some communes of northern part of Włocławek province. At present these schools do not exist. Causes of this big change were: liquidation of mentioned schools, and most of all — financial reasons, i.e. dormitory costs, increasing expenses for journey to home, and so on. Also the interests of youths have changed, now preferring general and technical secondary schools. Number of pupils daily travelling to general vocational schools in Toruń decreased by a half.

In 1987/1988 school year technical schools based on primary ones had influence zone similar to general vocational schools. It comprised north-eastern and central Poland. Places influence of these technical schools were: Werbkowice (Zamość province), Żory (Katowice province) and Stawiszyn (Kalisz province). Only six communes in Toruń province stayed aside of the zone. Moreover, many communes of Bydgoszcz and Włocławek provinces lied within above effect area of Toruń schools.

Most pupils came from area surrounding Toruń and communes: Dobre (Włocławek province), Konin (Konin province), Płońsk (Ciechanów prov.) and Nowe Miasto Lubawskie (Toruń prov.). It is interesting, that nine persons travelled from Płońsk commune (Ciechanów prov.), the place so distant to Toruń. Most of them were students of Milling Technical Secondary School. In 1987/1988 there were few milling technical schools in Poland, so the interest in this school was high. Wide range of education types at technical schools basing on primary ones and low costs of travelling are main reasons of the great extent of these schools influence in 1987/1988.

During next period the situation changed, what is evidenced by data from year 1996/1997. Influence area of above mentioned schools has covered most Toruń province, northern Włocławek and Płock provinces and some communes of Bydgoszcz and Olsztyn provinces. Communes located far off Toruń and influenced by technical schools are: Ostrów Mazowiecki (Ostrołęka prov.), Lewin Brzeski (Opole prov.), Osiek (Tarnobrzeg prov.), Korsze (Olsztyn prov.) and Warta (Sieradz prov.). In the analysed period number of pupils going to technical, after-primary schools increased by 10%. Intensity of these schools influence has also grew, chiefly in the distance of 50 kilometres around Toruń and along with Toruń — Hawa communication route.

The extent of effect of technical schools based on primary education level has lessened between 1987/1988 and 1996/1997, and it was mainly caused by financial reasons. However the intensity of effect has grown, particularly not far away from Toruń. This process happened on account of

demographic changes in the region and increase of interest in technical education among youths.

Technical schools based on basic vocational school were much more popular with pupils in the school year 1987/1988 than now. In 1987/1988 they influenced greater part of Toruń province (except for several eastern, northern and western communes), northern and western part of Włocławek province and part of eastern territory of Bydgoszcz province. Some youths attending above schools came also from communes of Płock, Ciechanów, Gdańsk and Skierniewice provinces. Most distant place of pupil's origin was Ustka (Słupsk prov.).

Most intensive effect of technical schools grounded on basic vocational education could be found in communes scattered about Toruń and Włocławek provinces, i.e. in communes: Toruń, Wąbrzeźno, Golub-Dobrzyń, Rypin and Aleksandrów Kujawski. Somewhat less pupils learned at these schools, who came from communes: Łubianka, Kowalewo Pomorskie, and Brodnica. In this case the regularity: the nearer secondary education centre, the greater part of youths from a locality attends its schools, does not exist. The crucial for education at technical schools based on vocational ones in Toruń was, in great measure, the lack of these schools type at pupil's place of residence. So the will of continuation of education was decisive for daily travels to above schools in Toruń. It should be underlined however, that in these circumstances greater part of youths resigned education at technical schools based on primary ones. They were largely pupils from places surrounding Toruń, what caused irregularity in intensity of influence of discussed schools in 1987/1988.

The situation changed a little in 1996/1997. There was distinctive diminution of influence effect of the schools. Only south-western part of Toruń province and the part of Włocławek province situated at the Toruń voivodeship border and several communes in provinces: Olsztyn, Elbląg and Bydgoszcz lie within the range of influence of technical schools grounded on basic vocational schools in Toruń. In 1987/1988 school year pupils travelled to Toruń to these schools from 64 communes, while in 1996/1997 from only 37.

Also the intensity of the phenomena grew less, in particular in communes: Toruń, Lubicz, Obrowo, Chełmża and Golub-Dobrzyń, and to slightly less degree in Łysomice, Zławieś Wielka, Kowalewo and in Włocławek province: communes Ciechocinek and Czernikowo. The reason of intensity and extent reduction was pecuniary difficulties of many families and growing smaller interest of youths in this kind of schools. In the last investigated year only 1/5 of basic vocational school graduates in Toruń undertook further education.

The year 1987/1988 was record comparing to all the period in respect of pupils attending basic vocational schools in Toruń. As much as 41% of

total pupils number were students of basic vocational schools. And this obviously influenced the intensity and range of the effect. In 1987/1988 youths travelled from 76 communes, mainly from Toruń province (except for Grudziądz surroundings, where one could find great variety of vocational schools) and northern part of Włocławek province. Intensity of the Toruń vocational schools effect is significant in south-western and central part of the province and in northern communes of Włocławek province (25 to 108 persons from one commune). It also embraced some communes of neighbour provinces and of provinces: Konin, Elbląg, Ciechanów, Katowice, Suwałki, Koszalin, Kielce. In this case dimension of the effect was small.

In the school year 1996/1997 number of pupils of vocational schools in Toruń decreased by 14% regarding preceding period, what affected intensity and the extent of their influence. That year youths travelled to basic vocational schools of Toruń from only 47 communes, chiefly from south-western and central part of Toruń province and from the area of northern Włocławek province. The most pupils travelled from communes: Toruń, Zławieś Wielka, Łysomice, Chełmża, Łubianka, Lubicz, Kowalewo, Obrowo and Czernikowo (25 to 95 persons from each). The area of low influence intensity covers north-eastern part of Toruń province and northern Włocławek province. It also concerns several communes of Płock, Konin, Bydgoszcz and Olsztyn provinces. Though places: Tolkmicko (Elbląg prov.) and Kętrzyn (Olsztyn prov.) were affected by effect of basic vocational schools of Toruń.

In general, the influence zone of all Toruń secondary schools considerably lessened since 1987/1988 (Fig. 3, 4). Nowadays the effect of these schools does not refer to western and northern Poland, and is much weaker in central and southern part of the country. If in 1987/1988 youths travelled to Toruń from 32 communes of Bydgoszcz province, now does it from only 9 units. Similar situation takes place in remaining neighbour provinces, as in 1987/1988 pupils travelled to Toruń from 9 communes of Płock province, and now (1996/1997) from 4, from Gdańsk province in previous period from 6 communes, at present — none. In year 1987/1988 pupils learning at secondary schools in Toruń came from 6 communes of Ciechanów prov., and from 8 communes of Elbląg prov. Today the schools attend pupils from 1 commune of Ciechanów prov. and from 2 communes in Elbląg prov.

INTENSITY OF SECONDARY EDUCATION EFFECT AND DISTANCE TO THE TOWN

The area influenced by secondary schools of Toruń was divided into 8 zones every 20 kilometres, starting from Toruń centre, along routes of students' daily travelling. This analysis was made on the base of data col-

lected from school registers and lists of first form pupils attending secondary schools in Toruń.

Table 2. Proportional number of secondary schools students in Toruń according to distance zones (ways to place of residence) in the school years 1987/1988 and 1996/1997

School year	< 20 km	20–40 km	40–60 km	60–80 km	80–100 km	100–120 km	120–140 km	140–160 km
1987/1988	65.0%	16.5%	8.8%	5.0%	2.6%	0.6%	0.3%	0.4%
1996/1997	76%	16.5%	4.4%	1.6%	0.8%	0.2%	0.07%	0.06%
School year	160–180 km	180–200 km	200–220 km	220–240 km	240–260 km	260–280 km	280–300 km	above 300 km
1987/1988	0.3%	0.1%	0.06%	0.04%	–	0.06%	0.04%	0.3%
1996/1997	0.06%	0.04%	0.04%	0.04%	0.02%	–	0.02%	0.06%

The intensity of the secondary schools effect dwindles together with increasing distance to the town (not necessary topographical, linear distance). The intensity not always permanently changes along with increase of distance to the town, because it undergoes some modifications caused by pattern of settlement network and related distribution of population.

Toruń and its nearer surroundings (up to 20 km) are characterised by largest share of secondary school pupils, due to largest concentration of youths attending these schools in Toruń. During period under examination the proportional share of secondary school students within the 20 km zone around Toruń significantly increased (11%). In the zone of 20–40 km this share is still larger than in further areas, amounting to 16.5% and did not change in that period. It is because of towns and large villages situated within this zone, from which youths willingly travel to Toruń owing to the proximity of the town and attractiveness of its schools. The distance is not a pecuniary barrier yet.

In the farther zones young people travelling daily make only little part of total pupils. Within 40–60 km zone it figured out in 1987/1988 at 8.8% and has constantly decreased in further zones. During discussed period the declining tendency starts at zone 40–60 km and keeps up to the end of school region.

Recapitulating, one should state, that during the 1987/1988 and 1996/1997 periods the intensity of Toruń secondary schools effect has grown in the section of up to 50 km, while in the zone above 50 km it has decreased. In the considered period the effect diminished at communes located in northern and eastern part of Toruń province and northern part of Włocławek province. In school year 1987/1988 intensity in these areas fluctuated between 5 and 99 persons from each commune, and now between 1 and 14.

Number of students travelling from communes surrounding Toruń amounted to 100–148 persons (from each of them), whereas in 1996/1997 100 to 181 (from every unit). The reasons of this process lie in pecuniary difficulties of many Polish families, connected to economic transformation of the country as well as in the establishment of new secondary schools proffering wide range of education types in the place of youths' residence.

Intensity of secondary education effect of Toruń is inversely proportional to distance from the town. The consequence of this process is diminution of Toruń spatial influence as the centre of secondary education, and increase in school youths number in the zone up to 20 km. However, Toruń as the centre of secondary education, still has the great extent of influence, as in 1996/1997 year it amounted to 420 km, in spite of its reduction by 160 km since 1987/1988.

FINAL REMARKS

Changes in the structure of secondary education in Toruń are indirectly result of economic and social transformations, taking place during investigated period in Poland. Last of all, one should ascertain:

1. Intensity of secondary schools effect is positively influenced by length growth of daily travel routes, frequency of transport connections and density of its network.

2. Largest spatial extent of the effect is the feature of technical secondary schools having attractive education lines (technical schools based on primary and vocational ones), absent in secondary schools in other, even distant places.

3. The extent of secondary education effect of Toruń has shrunk. Main reasons are:

— decrease in attractiveness of schools, that had a largest extent of spatial effect,

— reorganisation of teacher's education system (among others liquidation of Teacher's Study),

— low salaries and lack of possibilities to employ medium medical personnel caused liquidation of Medical Secondary School,

— no need for a special preparation of pupils to education at High Military School of Rocketry and Artillery, caused liquidation of Military Secondary School,

— growing significance of secondary education, particularly general one, in towns quite close to Toruń,

— increase of social inequalities and connected with it impoverishment of considerable part of society (high costs of travelling to schools and maintenance at dormitories).

4. Spatial intensity of secondary education effect is inversely proportional to distance from the town: 76% of secondary school students come from Toruń and its nearer surroundings (up to 20 km). This number increased during investigated period. Within other distance sections (zones) the number of youths travelling to Toruń has decreased since 1987/1988.

5. During researched period number of students at secondary schools (general and technical) in Toruń increased by 8%, while at basic vocational ones it decreased by 14%. In the school year 1996/1997 most youths learned in general secondary schools (36% of total pupils number) and in technical, based on primary ones (23% of totality).

6. In the inquired period one could observe increase in school-boys number by 13% in general schools and by 12% in technical ones, based on the primary education; this growth took place at the sacrifice of basic vocational schools (decrease by 15%). It testifies to more interest of school-boys in secondary general and technical education.

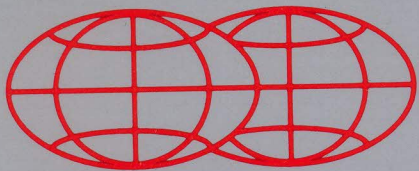
7. Among school-girls declining tendency has occurred in general vocational (by 12%) and basic vocational schools (by 13%) and there took place increase in general schools (by 24%). This is owing to small interest of girls in basic vocational education and to liquidation of typically girls' school in Toruń (General Medical School, Teacher's Study, General School of Administration). Difficulty in getting job after completion of basic vocational education is the main reason of continuation of education in secondary schools.

8. At present Medical Secondary School is being liquidated, Technical School of Water Drainage underwent reorganisation — new school was founded: Technical School of Environment Engineering and Land Reclamation. Because of shortage of willing to attend, some technical schools based on primary one are to be closed soon: Milling Technical, Mechanical and Electrical ones. Several schools have been already dissolved: Basic Vocational School of Construction, Basic Vocational School at Mechanical, Electrical and Electronic Schools Group and also Basic Vocational School of Agriculture.

9. Meeting interest of youths, new schools were established: six general education, two private general, two technical, one general vocational, School of Hotel Management, Technical School of Electronic, and two basic vocational for working youths — in Chemical Schools Group and Food Schools Group.

10. More specialisation is introduced into education at general schools. Adequate teaching profile in these schools is to help to come pupils to further decision concerning choice of university study type or after-secondary school, gives them greater chance of success in future school, where they will continue their way of education.

11. The structure of secondary schools in Toruń on the background of Toruń province distinguish itself by: higher proportional participation of secondary school students, higher proportional (percentage) share of youths attending general secondary and vocational secondary schools, and smaller proportional part of pupils learning in basic vocational schools. Tendencies of change in education structure of Toruń and its province are similar. During investigated period there took place proportional increase of youths in general secondary education and decrease in vocational schools of all types.



RUCHLIWOŚĆ PRZESTRZENNA LUDNOŚCI W OKRESIE PRZEMIAN USTROJOWYCH

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