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THE STANDARD OF EDUCATION COSTS WITHIN THE ALLOCATIVE FUNCTION OF PUBLIC FINANCES SECTOR

Introduction

Within the new theory of economic development, knowledge constitutes the most important endogenous productive factor. Investment in human resources is thus becoming a necessary condition for the state to maintain its international competitive advantage. Therefore, it is so important for the educational system to provide the knowledge in categories of know-what, know-why, know-how, know-who, know-when, know-which, know-between, know-where, know-whether, know-if. This kind of knowledge would be extremely useful while defining the essence of the public finance sector function in contemporary economies. It seems justifiable to identify a state's function with the function of public financing. Public finances are not only an instrument but also an attribute of the state power. There is a widespread agreement on the need of public financing of classic public goods and services. The extent to which the state engages in the provision of such goods is implied by the deficiencies of market mechanism when it is employed to just division of the gross domestic product. Wide differences in the level of incomes among various territorial units in a country may lead to deepening of regional development inequalities. Therefore, one should especially pay attention to the allocative function of public finances. The essence of this function consists in the fact that part of goods and services – as a result of the action of government and local administration – is allocated beyond market mechanisms. The exclusion of market mechanism allows for the realization of the state functions. These functions are reflected in the expenditures side of public finances. This is directly connected with the public production of given public and social goods. The part of expenditures

directed to them constitutes the actual share of public sector in the social product. Another part of the expenditures is transferred to the private sector through social aid, subsidies, etc. In this case the role of public finances consists in re-allocation of the means within the frames of the private sector itself [Ziółkowska, 2005, pp. 39 – 46].

The need of the state's engagement in the allocation of resources can be traced by looking at the example of the availability of services in the education sector. These services should be available to all citizens independently of the place of residence within a country. It is the system of education funding that decides about whether the place of residence creates an obstacle in the availability of the education services, or not. An interesting aspect appearing in the analyses within the field of education economics seems to be the question of determining the cost of the realization of an educational service in the light of current legal state. The results of such analyses could constitute an argument in the debate on the evaluation of the allocative function of public finances. The aim of this paper is to make an attempt at presenting a method of calculation of a standard of education costs in Poland¹. The article includes methodological indications concerning the calculation of:

- the obligatory hours range in various types and kinds of schools in relation to the number of full-time employed teachers (the number of teaching posts),
- the costs of employing one teacher at schools run by local self-government units (JST).

The methodological remarks concern the educational institutions for which the running unit is a rural commune. The proposed method of calculating the standard of education cost can however be also employed for other local self-government units (urban communities and mixed rural-urban, districts (powiaty), and the regional government).

Costs of education in relation to the level of the part of general educational subvention

Previous analyses have been directed towards the determining the level of financial covering of the costs of educational tasks from the part of the general educational subvention (SO). According to the current legal

¹ The article concerns the education costs within the frame of the current range of compulsory school enrolment and compulsory education.

status it is the SO to constitute the most important instrument of funding the educational tasks in the units of local government. The basic guiding principle for this calculation is: 'fund-follow-the-child'. That is to say, the subvention is calculated basing on the number of pupils enrolled at schools and other educational units that are run or funded by respective communes, districts, and regional governments. The level of subvention depends on the number of so called 'calculative' pupils (that number is calculated through employing different weights for chosen categories of pupils enrolled in respective types and kinds of schools, and the corrective indicator that takes into account the types of teaching posts). The basis for the calculation of the subvention is the financial standard of subvention distribution as the quotient of the general subvention (after 0.6% reserve deduction), and the general calculative number. For the year 2006 the financial standard was set at about 2943 PLN. In order to calculate the level of the subvention one multiplies the financial standard of subvention distribution by the number of calculative pupils in the given unit, with the use of the system of standard increasing in the form of the 'weights set'².

The educational part of the general subvention directed from the government budget to the local government budgets embraces the following amounts:

1. basic amount of subvention according to the financial standard A of the subvention distribution (SOA);
2. complementary amount of subvention according to the weights P of increasing the standard A for the realization of school tasks (SOB);
3. the realization of after-school educational tasks (SOC) [Kowalska, 2003a, 2006a, pp. 41 – 48].

This type of analysis is most often used by the local self-governments on account of the conviction that the amount of the received educational subvention (calculated in relation to 1 pupil) should be strongly correlated with the cost influencing factors. These in turn have to be higher in the rural communes because:

- the rural schools are for obvious reasons smaller,
- serving lower number of pupils does not mean the decrease in the number of teachers employed,
- most of the pupils have to commute to school,

² The ruling of the Minister of Sport and Education, December 22nd, 2005 concerning the distribution of the part of the general educational subvention for the units of local self-government in the year 2006, Dz.U. No. 266, item no. 2231.

- the transport of pupils and implied times of waiting require the creation of dayrooms,
- teachers working (but not necessarily living) in rural areas use the obligatory rural and rent allowance,
- additional educational services, given the poorer (than in cities) scientific and cultural infrastructure, are financed in the frames of the school system.

Not denying the value of this kind of analysis, it is worth underlining that the reported in course shortages of covering by the SO of the whole of education expenditure by a JST, is not itself an argument strong enough to claim the increase of funding, for example through the usage of the subvention reserve.

The government may for its side give the following arguments in favor of maintaining the status quo:

- local over-employment,
- overstated administrative costs of educational units maintenance,
- persistence in sustaining costly schools with low number of pupils.

Therefore, in order to avoid a subjective evaluation of the state of local education funding the analyses should concern the relation between the education cost standard to the level of SO. This kind of analysis is especially important for the evaluation of the allocation of social resources in rural areas³. The inhabitants of rural areas have to face a lot of cumulated factors that impair their perspectives for personal development. These include still lower education level, the mismatch of personal abilities with the labor demand in respective regions, lower aspirations, difficulties in the access to labor market, and in some regions also the lower life standard among the people living in rural areas. The worse start in life and lower educational chances of the rural areas pupils are also influenced by a range of barriers connected with the functioning of education system in rural areas (for example limited access to the counseling on the health and educational development of youngest children, limited access to kindergartens, greater variations in the professional level of teachers, worse educational offer of secondary level education, less opportunities of life long learning), and also the necessity to meet some specific needs that appear in such environments (for instance during the periods of intensive

³ Governmental plan of rural areas' development' – Ministry of Education and Sport – proposal – 25/07/2006.

works on the farms), struggling the obstacles connected with the financial situation of rural families, and their educational aspirations. Also the educational infrastructure is underinvested and not tailored to the local needs. The results of the proposed analyses could contribute to the work that is currently done by the Ministry of Agriculture and Rural Development on the Program of rural areas development for the years 2007-2013 that includes action 3.3. – Recovery and development of village⁴.

Framework plans of teaching as an indicator of education costs

The determination, in the light of the existing law, of the cost of realization of teaching at schools led by units of local government requires calculating:

1. the weekly range of hours for respective types and kinds of schools basing on the analysis of framework plans of teaching,
2. the increase of the number of hours of classes implied, among others, by the obligation to divide a class group over 24 pupils in case of foreign language teaching, information technologies classes, informatics, and over 26 in case of physical training,
3. the number of hours per class, taking account of the increases implied by the framework teaching plans,
4. the number of teaching posts given the class counting less than 24 pupils and more than 24 pupils.

The framework teaching plan determines the weekly range of educational activities for respective teaching periods with given aims, constituting the teaching whole (so called educational phases) in the following types of educational units: primary school, gymnasium, vocational school, three-years lyceum, three-year lyceum with profiled teaching, four-year technical school, two-year supplementary lyceum for the graduates of vocational schools, a post-secondary school with teaching no longer than two and a half years, three-year special school for pupils disabled mentally to moderate or advanced degree, as well as for those with combined disabilities. The framework plans embrace:

1. compulsory teaching and educational activities that comprise teaching subjects, blocks of subjects, integrated teaching, education paths, modules, facultative activities, and classes concerning the education profiles;

⁴ Proposal W – 04/03 /2006, pp. 106 – 109.

2. religion/ethics classes;
3. hours left to the school head's discretion;
4. activities of therapeutic-educative character, taking account of the developing, compensating, and remedial classes;
5. socio-therapeutic activities organized for pupils with dysfunctions and disturbances that impair the social functioning.

The regulation of the National Education Minister issued on February 12th, 2002 concerning the framework teaching plans in public schools defines the weekly range of compulsory educational activities⁵, additional educational activities, and religion/ethics classes. The range of activities in exemplary educational units is as follows:

- 24 hours (classes 1-3 of primary school);
- 29 hours (classes 4-6 of primary school);
- 31.33 hours (classes 1-3 of gymnasium – bilingual education excluded);
- 33 hours (bilingual gymnasium);
- 32.66 hours (in general secondary schools – 3-year lyceum);
- 38.8 hours (classes of the four-year vocational secondary schools).

The increases in the number of hours per unit within respective types of schools may be implied by:

1. the necessity of introduction of the remedial activities for disabled pupils, concerning the correction of physical defects, speech impairments, the spatial orientation and mobility, the teaching of sign language or other alternative methods of communication;
2. the introduction of teaching of a minority's or ethnic group's language at schools that employ:
 - the minority language,
 - bilingual education,
 - additional minority or ethnic group's language teaching;
3. the compulsory division of groups having classes in:
 - foreign languages, informatics, informatics and technology elements in classes consisting of more than 24 pupils;
 - not more than half of compulsory educational activities from the range of general education, for which the teaching program implies the necessity to hold seminars, in classes consisting of more than 30 pupils;

⁵ Dz. U. No. 15, item. 142 with amendments.

- educational activities from the field of general and vocational training, whose teaching program implies the necessity to hold seminars, in classes consisting of more than 30 pupils;
- cases of realization of vocational training modules, according to the requirements defined in the module teaching program for respective profession;
- the activities of practical training, according to separate rules;
- physical training for classes consisting of more than 26 pupils.

According to the analyses done so far, the self-governing rural communes are the running institution for 32 types and kinds of schools, including: primary schools (3 types and kinds), gymnasium (3), general lyceum (3), supplementary lyceum (3), technical school (3), supplementary technical school (3), 2-year vocational school (3), 3-year vocational school (3), vocational school for young employees (2), post-secondary schools (3). For every type of school the compulsory weekly number of hours has been determined for classes with not more than 34 pupils. Among the considered units this number fell between 47 hours in the 2-year vocational school, and 8 hours in the general lyceum for adults with extramural mode.

In case of schools run by a rural commune, the increases in the number of hours concern most of all the obligation to divide classes into groups with respect to teaching such subjects as for instance foreign languages. Other reasons for this entitlement include:

1. the correction of term and final papers in schools with extramural mode for adults;
2. the division into groups for the sake of realization of practical training in vocational and technical schools;
3. the realization of theoretical part of vocational training in the frames of 4-week frames at vocational schools for young employees;
4. the realization of exercises and laboratory activities in post-secondary schools.

In sum, the increases in the compulsory weekly number of hours among the considered set of schools fall between over 16 hours in the case of the 3-year vocational schools for young people, and 0.33 hour in case of the vocational school with extramural mode for adults.

The last phase of the calculation was the definition of the number of teaching posts for classes consisting of less than and more than 24 pupils (taking account of the increases in the compulsory number of hours).

The research implies that in all kinds of the units run by a rural commune, (the first phase of education: years 1-3 excluded) one can observe the increase of the number of teaching posts in the case of classes consisting of more than 24 pupils. This increases range from 0.94 of a teaching post to 0.02 of a teaching post. This quite a significant variation combined with the payroll cost of a teaching post will influence the variation in the demand for funding by rural communes coming from the part of the educational general subvention.

Method of calculation of a teaching post payroll cost

The cost of a teaching post in schools run by the self-government units indicates the level of education cost standard. Therefore, an attempt has been made to calculate that most important element of the cost standard. In order to obtain the monthly general amount of teaching costs one should⁶:

1. obtain a sum of:
 - 1.1. the basic payroll cost – a basic remuneration of a teacher depends on the level of education, and the teaching post level, which in turn is determined on the basis of the minimal wage tables⁷, proportionally to the number of hours taught.
 - 1.2. merit increases – the merit increase is an element of teacher's remuneration granted for special achievements in realizing the pedagogical work, and engagement in the realization of the school's tasks. General rules of granting the increase are given by paragraph 6 of the regulation concerning minimal amounts of basic remuneration, whereas the exact amount and detailed procedures are written in the bylaws on remuneration created and adopted in the form of a community council resolution, and implemented in the respective schools.
 - 1.3. functional bonuses – teachers, according to the provisions of the amended Teachers' Charter (KN), are entitled to gain a functional bonus if they hold the position of a school's head, other managing position written in the school's statute, the class' tutor, methodical adviser, consultant-teacher, stage tutor. While determining the amount

⁶ According to the data base on teachers' remunerations – MEN as of March 30th, 2006.

⁷ The ruling of the Minister of Education and Sport, January the 31st, concerning the level of minimal basic wage of teachers, general conditions of granting of the bonuses to the basic wage, and increases for work on Polish bank holidays, Dz. U. No. 22, item. 181.

of the bonus one takes into consideration the complexity of tasks implied by the position held. The amount and payment conditions should be written in the commune's remuneration regulations.

- 1.4. long-time service bonuses – this bonus should be treated as a reward for a long time work and is paid on monthly basis in the amount of 1% of the basic remuneration for every year worked, not more however than 20% of this remuneration.
- 1.5. specialization bonus - according to paragraph 9 of the transitional rules⁸ teachers, who at the time of the entering into force of the amended Teachers' Charter were getting the bonuses, maintain the right to them until they reach the successive teaching post level, and according to the rules in force on that date.
- 1.6. bonuses for the working conditions – a bonus paid for the work in difficult conditions connected to, for example: activities held underground (practical training for the education of miners), teaching at schools in prisons, teaching classes taking part in the International Maturity Exam (high school finals)⁹;
- 1.7. bonuses for the onerous work – a bonus paid for example for the work with the minors staying at borstals with increased oversight, with psychological disturbances, and HIV positives¹⁰.

And to this one should add the cost of ZUS (Social Insurance Institution), and the costs of the Employment Fund.

2. determine the costs of one-off payments (infrastructure development allowances, anniversary rewards, rewards from the special rewards fund, severance payments of various sorts), and add to that the costs of ZUS and Employment Fund. This can be calculated by adding the yearly costs for all communes and then divide the sum by 12. The result will be the value of monthly cost.

⁸ The bill of February 18th, 2000, amending the bill – Teachers' Charter, and amending some other bills. Dz. U. No. 19, item 239 with amendments.

⁹ The conditions recognized as difficult have been listed in the paragraph 8 of the Ruling of the Ministry of National Education and Sport of January 31st, 2005, concerning the level of minimal basic wage of teachers, general conditions of granting of the bonuses to the basic wage, and increases for work on Polish bank holidays, Dz. U. No. 22, item. 181.

¹⁰ The conditions recognized as onerous have been listed in the paragraph 9 of the Ruling of the Ministry of National Education and Sport of January 31st, 2005, concerning the level of minimal basic wage of teachers, general conditions of granting of the bonuses to the basic wage, and increases for work on Polish bank holidays, Dz. U. No. 22, item. 181.

3. calculate the value of institutional social service funds. This can be done by multiplying the general number of teaching posts by so called base amount that is determined by the Minister of Labor and Social Policy, and the product should be divided by 12 in order to determine the monthly cost.
4. sum up the costs of rent and rural allowances (teacher employed in a village or a town below five thousand inhabitants is entitled to receive the rural increase amounting to 10% of basic remuneration,¹¹ and the rent allowance, which amount depends on the teacher's family status, and the place of living), on a monthly scale.
5. calculate the monthly value of additional yearly remuneration from ZUS, and the Employment Fund.

The obtained amount of cumulated monthly teaching costs of schools should be divided by the total number of teaching posts. In this way we determine the cost of one teaching post per month.

Conclusions

The improvement of the funding system of the educational tasks assigned to the units of local self-government could be reached, if the resources the units are entitled to would be calculated according to the costs of teaching in line with the laws in force. Local governments are responsible for obeying the law but have no direct influence on law creation. According to the principle included in the European Charter of Local Self-Governance, concerning the adequacy of financial means received in relation to tasks assigned, the value of financial resources directed to local communities should be adjusted to the range of competencies assigned to them by the constitution or the law. In relation to this, the method of calculating the amount of necessary financial resources should start from determining the standard cost of education, and not as it is currently done – adjusting the method to the amount written in the state budget. If the proposed method of calculation was to be employed, the resolution content concerning the distribution of the part of general educational subvention would have to be significantly changed. The distribution could no longer be determined especially taking account of:

¹¹ According to article 54, paragraph 5 of the bill: Teachers' Charter, Dz. U. of 2006, No. 97, item 674 (basic text).

1. financing of the current expenditures (including employees' remuneration and secondary expenditures) of schools and institutions run by the units of local self-government;
2. supporting public and non-public schools and institutions run by legal persons other than local self-government units and by physical persons;
3. financing the tasks connected to further education and specialization of teachers, taking account of methodical counseling mentioned by the paragraph 70a of the bill of January 26, 1982 –Teachers' Charter¹²;
4. financing the expenditures connected to the individual teaching;
5. supporting the funding of expenditures connected to the payment of the severance pays for teachers, as well as granting the health recovery leaves;
6. supporting the funding of pupils of foreign citizenship;
7. financing the increase in the number of tasks in post-gymnasium schools, post-primary schools connected to the implementation of changes in the framework teaching plans;
8. financing, starting from September 1st, 2005, expenditures connected to the realization of the fourth hour of physical training for the gymnasium pupils;
9. financing the deduction for the institutional social services fund for the retired and the teachers in annuity;
10. financing the bonuses and rewards for the tutors of practical training;
11. financing the early child development.

The education costs standard obtained in relation to the level of the part of general educational subvention would reveal the real degree of realization of educational services (according to the laws in force) that the Polish government can afford given the current state of public finances. In the future the education cost standard will also be necessary to work on the task-oriented budgets of the self-government units [Kowalska, 2000].

REFERENCES

- Kowalska I., *School Resource Utilization Study*, World Bank Report, Warszawa, 2000.
 Kowalska I., *Finansowanie oświaty w gminach wiejskich. Wybrane aspekty*, Wyd. SGGW, Warszawa, 2003 (a).

¹² Dz. U. of 2003, No. 118, item 1112, with amendments.

- Kowalska I., *Economic determinants of human resource influence on the development of rural areas*, [in:] *Economic science for rural development*, Maquette Ltd. "Jelgavas Tipografija", Jelgava, 2003 (b).
- Kowalska I., *System finansowania edukacji w Polsce w świetle przemian cywilizacyjnych*, [in:] *Kształcenie zawodowe w teorii i praktyce edukacyjnej*, Kozubska A., Zduniak A. (ed.), Dom Wydawniczy Elipsa, Poznań 2006 (a).
- Kowalska I., *Finansowe instrumenty wspierania sektora edukacji w erze gospodarki opartej na wiedzy*, [in:] *Edukacja wobec wyzwań i zadań współczesności i przyszłości. Strategie rozwoju*, Szempruch J. (ed.), Wydawnictwo Uniwersytetu Rzeszowskiego, Rzeszów 2006 (b).
- Science and Government Series*, Kukliński A. (series ed.), Vol. 4: *The Knowledge-Based Economy. The Global Challenges of the 21 st Century*; Vol. 5: *The Knowledge-Based Economy. The European Challenges of the 21 st Century*, State Committee for Scientific Research Republic of Poland, Warszawa 2000.
- Teoria wyboru publicznego. Wstęp do ekonomicznej analizy polityki i funkcjonowania sfery publicznej*, Wilkin J. (ed.), Wydawnictwo Naukowe SCHOLAR, Warszawa 2005.
- Rachunkowość w oświacie praktyczny poradnik dla publicznych jednostek oświatowych*, Wydawnictwo Vulcan, Warszawa 2006.
- Ziółkowska W., *Finanse publiczne. Teoria i zastosowanie*, Wydawnictwo Wyższej Szkoły Bankowej, Poznań 2005.

Summary

The allocative function of the public finances system requires taking a new perspective on the method of calculating the value of the financial means, directed to the units of local self-government with the aim of realization of public tasks. The article makes an attempt at presenting a method of calculating the standard of education costs in Poland. The paper includes methodological indications concerning the calculation of:

1. the compulsory number of hours in respective types and kinds of schools per number of teaching posts,
2. the payroll cost of one teaching post in schools run by units of local self-government (JST).

The methodological remarks concern the institutions run by rural communes. The proposed calculation method can also be employed with regard to the institutions subordinated to other JST (urban, and rural-urban communes, districts, regional governments).

Standard kosztów kształcenia w alokacyjnej funkcji sektora finansów publicznych

Streszczenie

Funkcja alokacyjna systemu finansów publicznych wymaga nowego spojrzenia na sposób liczenia środków przekazywanych jednostkom samorządu terytorialnego na realizację zadań publicznych. Artykuł jest próbą zaprezentowania sposobu liczenia standardu kosztów kształcenia w Polsce. W artykule zostały zamieszczone uwagi metodologiczne w zakresie liczenia:

1. obowiązkowego wymiaru godzin w poszczególnych typach i rodzajach szkół w przeliczeniu na etaty nauczycielskie,
2. kosztów jednego etatu nauczycielskiego w szkołach prowadzonych przez jednostki samorządu terytorialnego (JST).

Uwagi metodologiczne dotyczą bazy placówek, dla których organem prowadzącym są gminy wiejskie. Zaproponowaną metodologię liczenia można także zastosować w placówkach podlegających innym JST (gminy miejskie i miejsko-wiejskie, powiaty, województwa samorządowe).

