

Theoretical and Methodological Background of Efficiency of Educational Services in the System of Higher Education

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Abstract: The wide spread occurrence got the consideration of different aspects of educational services efficiency, in particular, the more narrow aspect of higher education regional efficiency - the efficiency of interaction of higher vocational educational system and the regional labor market, and also different manifestations of efficiency from the perspective of direct consumers of educational services (a student, a state, a society, an employer and an educational institution). The question about economical essence of costs, connected with the higher education, is of the same importance. Are they productive or nonproductive? There is no still consensus in this and some other questions. Thus, it is possible to separate two exact antipodes of opinion on the character of educational costs. The followers of one of them consider, that in specialist training the costs on higher education are not directly transferred to the cost of goods, produced in material sphere that is why these costs cannot be considered as the productive ones. Another group of researchers refers the costs on staff training to the necessary costs of production restructuring, i.e. considers them as the fixed capital formation. At present, for the higher education economy the evaluation problem of cost efficiency on higher education and determination of their optimal value, from the national economy viewpoint, is the main methodological and applied problem.

[Ragulina J.V., and Zavalko N.A. **Theoretical and Methodological Background of Efficiency of Educational Services in the System of Higher Education.** *Life Sci J* 2013;10(11s):199-204] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 34

Keywords: silage, alfalfa, boar, sperm, probiotics, conservation, husks of grapes, ejaculates, fertility, diet, nutrition, lactic acid bacteria.

1. Introduction

The scientific problem of higher education economy represents an underexplored sphere of economics. That is why the development of methodological problems of educational economy refers to the number of relevant tasks. It is an important condition and prerequisite to the further increase of level of the whole creative work in the sphere of updating of economic base of higher educational institutes.

The Soviet economists, such as V.A. Zhamin, E.N. Zhyltsov, V.E. Komarov, V.M. Remennikov, I. Tulchinsky etc. contributed much to the formation of educational economy. The famous representatives of modern foreign economic mind, such as T. Shults, Ch. Bekson, F. Makhlup, G. Bekker and others took part in development of educational economic theory.

The foreign economic concepts are connected with the works of such American economists, as T. Shults and G. Bekker, whose main ideas are reflected in the theory of human capital asset and come down to the following:

- The knowledge, acquired by people in the process of education, is the form of capital;

- The "human capital asset", in its significant part, is a product of purposeful investment;

- The "human capital asset" increases with higher rates than the usual capital goods;

- The growth of "human capital asset" can be considered as the most typical characteristic of the modern economic system.

Recently, the wider distribution got the consideration of the more narrow aspect of the higher education regional efficiency - the efficiency of interaction of higher vocational educational system and regional labor market. The works of such authors as V.S. Grinko, A.I. Dobrynin, N.A. Lobanov, N.P. Litvinenko, R.I. Kapelushnikov, T.L. Klyachko, M.P. Merzlova, D.V. Minaev, S.Yu. Roshin and others belong to this direction. From their point of view, the regional educational system, which balances the indices of employment and unemployment in the region, functions effectively?

In their investigations V.L. Inozemtseva and N.D. Klikunov considered different manifestations of efficiency from the perspective of direct consumers of educational services [1]:

- From the student's point of view, the efficient level of the obtained education at the

individual level is achieved in two directions: the economic efficiency of investments into education on a cost-plus basis of missed opportunities (missed salary, benefits, connected with the further military service, wedding and birth of a child etc.) and social efficiency in the form of advanced educational, professional level, resulting in high-status position in the society;

- For the employer the higher education efficiency is, firstly, the difference between the marginal gain, obtained by the company due to employment of the competent specialist, and the costs on his training and payment of his labor;

- The state considers and evaluates the higher education efficiency from the viewpoint of higher benefit from the investment of budgetary funds into education, than from investment to other economic spheres, on condition that the losses from the state reallocation of budget in favor of education are reduced;

- For the society the higher education efficiency bears only social character, which is represented in increase of general educational and cultural level of population;

- From the viewpoint of higher educational institution, the efficiency of its activity in educational sphere is a balance between the costs and benefits, obtained from the training of different specialists in market conditions.

Under the economic efficiency of higher education it is necessary to understand the relation of increment of results for some period of time, resulting from the use of high university degree specialists in labor economy, as compared to the results, which hypothetically could be obtained in the same conditions, but without the use of labor of equivalent qualification, to the costs on training of specialists with higher education, involved into economy now. At that, the costs and the results can be numbered both in monetary terms and on the basis of quantities.

This approach sets a number of major problems, for instance, the economic efficiency, in this understanding, will be influenced by the efficient use of labor of the competent specialists, i.e.: their labor conditions in the wide sense; length and order of the period, for which the efficiency is determined; the whole previous economic history of the country, educational system and staff training etc. Figuratively saying, the simplest way to determine the abovementioned increment of economic results is to observe the development of the state during several decades, and even, maybe, hundreds of years, in conditions of existence of single staff training system, then to return the state into initial position, to change the staff training system and again to observe

the development of the state for the same historical period. Comparing the obtained results and assuming, that the results variation is conditioned by the changes in staff training, it is possible to determine the higher education efficiency as aforesaid. However, in this case the fairness of this statement is mainly determined by the answer to the question, what is primary - the growth of educational level or practical qualification of the joint worker, education or scientific, engineering, and technological progress?

The question about the economic essence of costs on higher education is of the same importance. Are they productive or nonproductive? If they are productive, what is their character? What is the economic mechanism of their formation and further use? There is no consensus in these and some other questions. Thus, it is possible to separate two exact antipodes of opinion on the character of educational costs [2]. The followers of one of them consider that in specialist training the costs on higher education are not directly transferred to the costs of goods, produced in material sphere that is why these costs cannot be considered as the productive ones. Another group of investigators refers the costs on staff training to necessary costs of production restructuring, i.e. considers them as fixed capital formation. V.A. Zhamin divides the labor in the educational system into directly-productive (connected with staff training for the production sphere) and indirectly-productive (staff training for the non-production sphere). Namely, he considers the educational costs to be the productive ones. Besides, there is an opinion that the labor on specialists training can be partially considered as a productive work, as it emerged as a result of labor differentiation, appeared in the process of social reproduction. Thus, the range of opinions on the character of costs on higher education is quite wide.

Let us fix on the fact that all the costs on higher education, apart from the specialties, on which the training is carried out, are the productive ones. The growth of educational level is inseparable from the scientific-engineering and social-economic progress, providing the extended reproduction; as if they are united into regenerative loop, when each element of the loop can be regarded as a prime cause of change of another element.

The main disagreement is dealt with the estimated result of the functioning of education sphere; if it influences on the national income or not; if it increases the national income indirectly through the results of the skilled labor or if it has its own form in the shape of "immaterial wealth". Efficiency measurement procedures are built in dependence on this. It is assumed that all education efficiency

calculations on the basis of national income are inappropriate, as they reflect only the economic aspect of efficiency.

As far as another approach, connected with the recognition of independent form of national wealth-immaterial accumulation, then these efficiency calculations on the valuation basis of costs and benefits are also unsuitable, because they require the additional analysis of natural indices.

Not deepening into the disputes around the educational efficiency, let us mark several important points:

- It is impossible to absolutize the inner (branch) educational efficiency, but it is always necessary to relate it with the satisfaction degree of one or another social need in conditions of education;

- natural indices of education development shall find the wider use, as the cost ones "conceal" the real reasons of dynamics of social-economic efficiency. In this regard, the calculations of V.N. Kirichenko are interesting; he puts forward the educational potential of workers as an index of performance result. This index, calculated by him in man-years, on the basis of population census, allows to analyze the dynamics and structure of educational level of people, employed in national economy in whole and in its different sectors;

- As it is very difficult to evaluate the quality of educational sphere, it is reasonable to take into consideration the main factors, its determinants. One of the variants of such approach is a method of sliding-scale prices, suggested by L.Ya. Yakobson [3]. Its essence comes down to calculation of the scope of educational services, distinguishing the expenses, the increase of which is connected with the qualitative development or service updating [4];

- To evaluate the intensification degree, it is necessary to use not the one integral index, but the whole set. Thus, even the contradictory index provides more sound estimates.

Economic indices play a subordinate role. The cost cutout per "unit" (per one pupil, student, and educatee) is not a goal in itself. The society should try to observe the rational, but not the minimum level of expenses. Specific for the branch, the limitations in economy of expenses do not mean that any costs are justified.

Whilst the social indicators have the determining value, it is incorrect to consider them as a goal in itself [5]. The reduction of economic efficiency is possible, if it is compensated by the increase of social efficiency, or if it creates the conditions for sharp increase of economic or social efficiency in future.

By the present time, there is a viewpoint, according to which two types of economic efficiency

of higher education (and the education in whole) are studied; they differ in the sphere of manifestation of the relevant effect - macroeconomical (off-system) and intrasystem. The first of them is determined as a relation of the final economic benefits, expressed in monetary or another composite index, to the costs, providing its receipt. Sometimes there are compared the generalized economic indicators with some postulate standard, deviation of which serves as a measure of educational efficiency.

The intrasystem efficiency characterizes the intensity and economic efficiency of use of funds and recourses of each higher educational institute taking into consideration the appropriate standards, including the specific character of high school. Both types of efficiency are connected with each other, but their functional dependency is complex, and the persistence of the training system of high university degree specialists has not the last role. Actually, if the increase of intrasystem efficiency due to decrease of unit costs for the specialist training of the definite qualification quite clearly leads to the growth of higher education efficiency, then the growth of the last one provides the increase of costs on education due to emerging opportunities. This, in its turn, due to the persistence of staff training will reduce both the intrasystem and economic efficiencies within some period of time, as the return of additional costs will not show itself immediately, but after a while.

Finally, to determine both efficiencies, it is necessary to know the costs on specialists training, what is connected with a number of problems: what costs shall be taken into consideration - only the current or the current and capital ones; for the whole training period, including the secondary education, or only for the time of study in the higher educational institution. Besides, to evaluate the intrasystem efficiency, it is necessary to have the objective standards, the determination of which also presents a quite difficult problem.

At present, for the higher education economy the problem of efficiency evaluation of costs on higher education and determination of their optimal size, from the national economy viewpoint, is the main methodological and applied problem [6]. Here is meant the relation of economic results of higher education activity to the costs value on its support. At different times the problems of cost efficiency on higher education were always in the focus of attention of national authors A.B. Dainovsky, V.A. Zhamin, E.N. Zhiltsov, N.P. Ivanov, M.Yu. Kadykov, S.G. Strumilin and also foreign economists E. Denison, T. Shults etc.

Some authors consider that the cost efficiency on higher education cannot be evaluated based on national income change, as it is impossible to

separate the share in it, conditioned by the change of educational level of labor force. It is suggested to evaluate the higher education efficiency based on structure correspondence and level of specialists competence of social need in them (evidently, the socially required one is meant) and, besides, based on the quantity of graduated specialists. Actually, the problem of evaluation of the social need in specialists is not solved, and the ways to its solution are not clear [7].

The evaluation problems of cost efficiency on education were also studied by foreign authors. Therefore, the American economist E. Denison, determining by the data of the year the relation of the average income level in dependence on the employee level of education, determined by the number of training years, distributes the obtained dependency for the whole period under investigation [4]. Based on the dynamic series of incomes of economically active population, obtained in such a way, essentially reflecting the growth of employees educational level and change of educational structure of the labor force, he determines the average annual rate of growth of average incomes due to increase of educational level. Based on the theory of production factors, according to which the labor force provides the receipt of 75% of national income, he considers, that 75% of average annual increase of personal income, conditioned by the educational level growth, is indicative of the increment of national income due to this factor. Let "a" be the average annual rate of growth of the employee average income due to educational level growth for some period of time, (%); "b" is the average annual rate of growth of national income for the same period of time. Then $(0.75a)$ is the absolute value of national income growth rate due to educational level for the specified period of time, and $[0.75 \cdot (a/b)]$ is the share of national income increment, provided by the increase of educational level of labor force. These indices can be recalculated per one employee, and if obtained specific indicators change as compared to the initial ones, it will mean, that the national income increment is significantly influenced by another factors, besides the labor force. Three disadvantages can be pointed out in this approach:

- Firstly, change of the employee income level can be conditioned only by growth of its educational level, and these incomes cannot objectively reflect the full cost of the good, produced by the employee;

- Secondly, it is not clear, why 75% from the increment of labor force due to education make up the increment of national level due to educational level growth;

- Thirdly, quite conventional is the measuring of education by the number of training years, not

reflecting the educational content, excluding which it is impossible to speak about its efficiency.

Some foreign economists, in order to eliminate the third disadvantage, suggest to consider the quality of education indirectly through the costs on education. At that, the basis is the approach, suggested by the American economist T. Shults. It is based on the theory of human capital asset, according to which the knowledge is its special form, and the investments into education are the investments into "human capital asset", the extension of supplies of the last one provides a part of national income growth. T. Shults considers that the human capital asset (or the educational capital) consists of two parts: the costs on education (there are considered both the capital investments to creation and development of main funds and the current costs) and lost earnings (in the sense that instead of entering to the university, the school graduate could go to work and, consequently, get the income, which he loses while studying in the higher educational institute). If we know the cost of education of each level, the educational structure and number of economically active population, it is possible to determine the whole accumulated cost of education in a concrete year and its variation in time [8]. Then, comparing the lifelong earnings of people with different educational level and determined on their basis (in educational structure and labor force number) total income, conditioned by the presence of education, with costs on it (including the lost earnings), T. Shults evaluates the annual rate of return on capital, invested to education, as 9%-11%. Multiplying the annual capital increment, accumulated in education, by the obtained profit rate, he determines the profit margin in dependence on increase of investments to education, or, in other words, the monetary value of the part of national income increment, conditioned by the costs on education. Correlating it with the national income increment, it is possible to determine, what part of this increment results from the increase of educational level in quantitative and qualitative relations [9].

Three main disadvantages of T. Shults procedure are obvious. First of all, it is not quite right to include the "lost earnings" to the costs on education, as this approach orientates at the accounting of only necessary product excluding the surplus product (especially as the efficiency of education for a concrete person is measured by the increment of his salary, resulting from the obtained education, but not by the increment of the whole manufactured product). This disadvantage is connected with the second one - in this case the efficiency of education is determined not on the basis of the final economic effect. Actually, we speak

about the individual efficiency of education, determined based on the variation of the necessary product, caused by the getting of education. Finally, due to incomplete accounting of the manufactured product, it is unjustified the whole transition from the "profit standard" of investments to education to direct determination on their basis of the share of national income, conditioned by the costs on education.

Thus, the state of developments of efficiency evaluation of costs on higher education either does not provide the direct qualitative evaluation, or, due to oversimplification, significantly reduces their truthfulness. Any models, providing qualitative connection of costs on education and final macroeconomic results, taking into consideration the interdependencies of all workflow elements of expanded reproduction, are almost not used. Some researchers consider the connection between the costs on education and the national income to be very weak [10]. This evaluation is wrong for a number of reasons. Firstly, the costs on education are the costs, advanced for the future. Secondly, the majority of calculations were carried out based on the experience of 1950s, when in absolute majority of countries the economy was developed extensively, and in short time segment, actually, the educational potential of the labor force had a slight impact on the growth of national income, provided mainly by the mechanic growth in production. Evidently, in longer time intervals this connection should be more obvious, except that, according to scientific and technological progress there shall be observed the strengthening of connection and the reduction of period, in which it shows itself. However, it is important not to run into the other extreme, categorically connecting the economic results with the costs on education, because they also depend on the other internal reasons and on the availability of world market.

The main difficulty in determination of cost efficiency on higher education is in separation of that share of economic results, which is conditioned by the costs on higher education. Here are also a number of problems, the solution of which constitutes the procedure of approach. Abstractedly saying, the most correct and vivid way to determine the influence of costs on higher education on the economic indices is to compare the results for the long time period, obtained at different amount of costs on education. However, this calculation is impossible in reality; it can be carried out only through mathematical model. At that, the model should be imitational, i.e. reflect the process of extended reproduction taking into consideration the impact of subsystem of higher education for the long period. At that, the principle questions are the following: for what period to compare and how to become free from the influence

of costs on higher education, initiated previously, up to the analyzed period. These questions are conditioned by the fact, that to evaluate the cost efficiency on higher education and to find their optimal value (based on the criterion of maximum efficiency), it is necessary to determine the relation of change of national income ΔY to the change of educational costs ΔX or to determine dY/dX . For this it is enough by means of experiments with model to reveal the dependency $\Delta Y=f(\Delta X)$, which is equivalent to the dependency $Y=f(X)$ with the origin of coordinates, shifted by $(X_0;Y_0)$. At the same time, obtaining the dependency $\Delta Y=f(\Delta X)$, subtracting a timing series, corresponding to the changed costs on higher education, from the timing series, characterizing the achieved level of national economy development (caused by all reasons, including the previous costs on higher education), it is possible to eliminate all impacts, despite the impact of these costs properly. Thus, it is possible to determine the change of national income, conditioned only by the change of costs on higher education.

As far as the period is concerned, for which it is reasonable to compare the alternative variants of national economy development, it is necessary to take into consideration the following:

- Firstly, the change of educational costs does not occur at once, but after some period of time, determined by the length of study in the higher educational institution (in general case this interval equals to or less than the length of study);

- Secondly, it is logical to suppose that the change in content and level of training (it is necessary to assume, that the change of costs on higher education is implemented through this) of the specialist will influence on the length of his whole working period in national economy. Thus, when the cost efficiency on higher education is evaluated, it is reasonable to consider the results, conditioned by these costs, in the time interval of 35-40 years. However, at this it is impossible to forget, that the "productivity" of the average specialist will change in time (in particular, for the productivity of scientists). It is also shall be taken into consideration for evaluation of cost efficiency on higher education.

The obtained results of the abovementioned calculation methods for the efficiency of education cannot be called as the precise ones, as for these methods there are used such quantitative and qualitative factors and characteristics, which cannot be precisely evaluated or calculated, that is why the evaluation methods of cost efficiency on higher education require further analysis and specification; the works on detailed elaboration and deep grounding of these methods still continue [11]. It is possible to say, that the obtained data shows that the

opportunities of new approaches to solution of cardinal problems of higher education economy are not depleted, and the results, obtained on their basis increase significantly the efficiency of both the production and the economy in whole.

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11/10/2013