Problems Evaluating English Teachers as Human Capital

Elena Karpenko¹,
Olga Zinisha²,
Anastasia Malkhasyan³,
Irina Frolova⁴,
Galina Karpova⁵,
Mira Alborova⁶

¹Plekhanov Russian University of Economics
²Kuban State Agrarian University
³Don State Technical University
⁴Kazan Innovative University named after V.G. Timiryasov
⁵Southwest State University
⁶K.G. Razumovsky Moscow State University of technologies and management

ABSTRACT

This article analyzes modern approaches to evaluating English language teachers as an important human resource in many countries. The need to consider the characteristics of human capital when evaluating it has been proven. Deficiencies in the databases needed to assess human capital, especially for English language teachers, have been revealed. Keywords: human capital, English teachers, approaches to assessing human capital, information databases.

1. Introduction

Modern social development is characterized by the transition from industrial to post-industrial type of management, the basis of which is knowledge (Loh & Ang, 2020; Gapsalamov et al., 2020). Transformations are taking place in the assessment of resources that ensure the sustainable functioning of socio-economic systems. In the conditions of the emerging knowledge economy, capital embodied in the human personality acquires special significance. It becomes the most significant resource, the qualitative and quantitative state of which determines the direction of changes in the system of which it is an element: “Human capital is the most valuable resource, much more important than natural resources or accumulated wealth. It is human capital, not factories, equipment and manufacturing stocks, that is the cornerstone of competitiveness, economic growth and efficiency” (Grayson, 1991).

2. Methods

The definition of human capital as a key resource of social development, an increase in the demand for information about its state brings to the fore the task of assessing this resource: “it is high time to learn how to measure the value of this wealth, the very fact of its assessment will contribute to a change in the views of managers, their approach to human capital is not easy as a cost, but as a company asset that needs to be used wisely” (Grayson, 1991). Solving the problem of assessing human capital, in turn, gives rise to three main problems.

The first problem is the need to account for the differences between human and physical capital: “The analogies between human capital and physical capital are interesting and exciting. However, the similarities should not obscure the characteristics of human capital for us. Human capital cannot be analyzed in the same way as physical capital. The differences must be clearly understood” (Thurow, 1970). The most significant, in our opinion, the difference between these types of capital is based on the right of ownership. One of the characteristics of physical capital is the ability to transfer ownership of it to another person or group of persons.
Human capital is inseparable from a living human personality, due to which it cannot be an object of collateral or alienation. The inseparability of human capital from its carrier distinguishes it from physical capital in terms of the degree of liquidity: it is impossible to turn human capital into money by transferring it to another. The formation of human capital requires the active labor efforts of its owner, which also significantly distinguishes human and physical capital. In addition, the use of human capital is controlled by its bearer. The functioning of human capital is also nothing more than the labor of its owner. The owner of human capital must spend a certain amount of his labor to generate income. Receiving income from physical capital does not imply labor costs of its owner. There is another feature associated with income generation: human capital can generate income for an organization without being its property. Due to the inseparability of human capital from its carrier, investments in human capital carried out by individuals, organizations and the state have a greater degree of risk in comparison with investments in physical capital (Nikolaeva et al., 2019; Malteva et al., 2020). So, for example, in accordance with Russian law, any employee (carrier of human capital) can terminate an employment contract with an organization of his own free will, notifying the employer about this two weeks in advance. In such a situation, the employer loses the opportunity to receive a return on investment in this employee. A certain compensation for the costs incurred may be the fulfillment of the condition on the need to reimburse the cost of training an employee at the expense of the organization in the event of early termination of the employment contract if such a condition is provided for by the employment contract with the employee. The investment period in physical capital is much shorter than the investment period in human capital. There are significant differences in the processes of wear and tear of physical and human capital: “human and tangible capital differ by the distribution of depreciation charges over time, but not by their presence or absence” (Becker, 1993). If physical capital begins to wear out from the moment it starts functioning, then with human capital the situation is somewhat different. The initial period of the functioning of human capital (which takes place during the period of maturation of the individual) is characterized by the development of abilities, the accumulation of knowledge, skills, experience, which contributes to an increase in its economic value (Korableva et al., 2019; Kashirskaya et al., 2020). Further functioning of human capital leads, on the one hand, to its physical and moral deterioration (which reduces the value of capital), on the other, to the accumulation of life and work experience (which increases the value of capital).

T. Schultz, considering the problem of the difference between human and physical capital, identifies the following differences that are significant for the procedure for assessing human capital:

- human capital differs from physical capital in terms of the degree of liquidity. The transformation of human capital into other forms is due to the expression of the will of its bearer - the individual, as well as the conditions and diverse factors of production;
- human capital is difficult to diversify. This is due to the fact that its allocation in the structure of individual elements is rather arbitrary, and the problem of measuring them with subsequent aggregation in most cases goes beyond the scope of economic analysis;
- the investment period for human capital is significantly longer than for physical capital. For the latter, it is from 1 to 5 years, and for such a form of investment in a person as education, the investment period, that is, the period of study, can reach 12-20 years or more, especially if we take into account the need for continuous education and advanced training during all working life (Kozlov, 2009; Mazzanti et al., 2020; Fominskaya et al., 2018).

The second problem is the imperfection of the methodological base. The existing approaches to assessing human capital can be grouped as follows (Fig. 1).

![Figure 1. approaches to assessing human capital (Source: Author)](image)

The first approach focuses on the processes of human capital formation and the associated costs. The author of the most popular valuation model from the standpoint of accounting for investments in human capital, J. Ben-Pore, argues that “the inherited or acquired own talents of an individual, the quality of interacting investments, limitations and opportunities emanating from the institutional system—all this determines the technology or function
of production. Together with the prices of pertinent factors, production functions establish the optimal path by which a certain amount of human capital must be produced and which forms the costs of this production" (Ben-Porath, 1967).

L. Turow admits that investments in the production of human capital are to a certain extent similar to investments in any production process: “the processes of production of human capital are similar to the processes of production of goods and services. They show the quantitative relationship between factorial inputs and the volume of productive human capital” (Thurow, 1970).

It should be noted that the main issue that needs to be addressed when implementing the approach based on the assessment of past efforts (investments) is the question of which costs should be attributed to investments in human capital.

M. Bowman, for example, writes: “Aside from the training of the human mind, the costs of the formation of human capital are mainly related to its physical formation. However, many of the expenditures pursuing this goal are at the same time the most important items of consumption, so if people are not slaves, then equating such expenditures with investments and trying to estimate the income they bring is meaningless, with few exceptions” (Bowman, 1962).

G. Becker refers to investment in human capital as the costs of education, training in production, health care costs, migration, and the search for information on prices and incomes (Becker, 1964).

R. McConnell and S.L. Brue distinguish three types of investment in human capital: education spending (general and special, formal and non-formal, on-the-job training); health care costs (disease prevention, medical care, dietary food, housing improvement); costs of mobility (migration from places of low productivity to places of higher productivity) (McConnell, 1992).

J. Kendrick divides all investments in a person ("investments embodied in people") into material and immaterial: “Material investments, in contrast to immaterial ones, are material and bodily. They have the ability to embody intangible investments, which is expressed in changes in their quality or productivity as material factors of production” (Kendrick, 1978). He refers to the material investments embodied in people the costs of "physical formation of" human capital "and increasing its productivity” (Kendrick, 1978). These are mainly the costs associated with the birth and education of children. J. Kendrick classifies as immaterial the costs of education and training, medical care, labor mobility (costs associated with the existence of unemployment, job search, recruitment, migration and immigration).

• According to B. Kiker: “the inseparability of consumption and investment and the difficulty of assessing destruction and support make the approach based on production costs questionable” (Kiker, 1971).

• Solving the problem of assessing social human capital in the modern period S.A. Dyatlov sees in the application of an approach based on the recognition of the informational value of education. “What advocates of the concept of human capital call lost earnings and refer to the costs of education," explains S.A. Dyatlov, -we call specific "information educational income", which, although they have informational content, can be taken into account in form and in monetary terms "(Kendrick, 1978). A person, making a decision in favor of "work today", receives income in cash for work that corresponds to the current level of his qualifications. A person who chooses education today invests in the production of an educational product and receives in the present not monetary, but information educational income. The amount of this income can be estimated indirectly through the amount of earnings of a person who refused to receive an education and started working in production (Kendrick, 1978). A person who starts work with a new level of qualifications acquired as a result of training demonstrates higher labor productivity and receives a higher salary than before (before acquiring new knowledge, skills and abilities through training). The increase in wages, which is a consequence of the application of labor of higher qualifications, is, according to S.A. Dyatlova, a monetary form of an information educational product.

• Criticizing the method of calculating the rate of return (rate of return) on education, based on discounting the difference between results and costs, used by supporters of the theory of human capital, due to the peculiarities of accounting for the costs themselves, S.A. Dyatlov calls the indicator obtained in this way "characterizing a certain amount of profitability". In his opinion, a real estimate of the value of the return on higher education can be obtained by including two groups of elements in the cost of higher education:

• direct investments for higher education, made at a given time, and expressed in monetary form;
• costs of human labor in the learning process. The monetary value of these investments is quite specific. Due to the absence at present of any natural measures of such costs in the learning process, they can be conditionally expressed in monetary terms. It should be noted here that S.A. Dyatlov does not fully reject the possibility of using "lost earnings" in determining the economic efficiency of education. He considers it quite "legitimate" to use the indicator "lost earnings" in the "conventional sense" to take into account the labor costs of students to form their education. And it recognizes the accounting of "lost earnings" as an indirect measure in conventional monetary units
of the labor costs of students (Kozlov, 2009). Such investments acquire a real monetary form when a person who graduated from training starts work.

As a result, the proposed S.A. Dyatlov, the method of calculating the rate of return from higher education includes the following indicators:

- Income from higher education received by a person because of investment of fixed capital at a certain point in time;
- Income from higher education received by a person because of investments of living labor at a certain point in time;
- The main investments (investments) for obtaining higher education at a certain point in time;
- Labor costs of a student to obtain higher education at a certain point in time;
- Specific year of the person's age (moment in time);
- Years of admission to the university and its graduation;
- Year of employment;
- Year of completion of work (dismissal or retirement);
- Interest rate;
- The coefficient of integral return on educational investments (Kendrick, 1978).

The complexity of the practical application of the proposed methodology, in our opinion, is to the greatest extent associated with the indicator "coefficient of integral return on educational investments". The author's indication of the methodology under consideration that “the content of this concept can be disclosed only within the framework of an informational approach to the analysis of economic processes and phenomena” is not enough to clearly represent the nature and content of this indicator.

Recognizing the great importance of the concept of the informational value of education, developed by S.A. Dyatlov, as well as his proposed methodology for calculating the effectiveness of higher education, it should be noted that they are insufficient for a comprehensive assessment of human capital. In the opinion of S.A. Dyatlov's human capital is “a certain stock of health, knowledge, skills, abilities, motivations formed as a result of investments and accumulated by a person, which are expediently used in a particular sphere of social reproduction, contribute to the growth of labor productivity and production efficiency and thereby affect the growth of earnings (income) of the person” (Kendrick, 1978). The considered approach makes it possible to assess only one component of human capital formed as a result of education.

The second approach involves assessing the results of the functioning of human capital, expressed in the form of income. Measuring benefits most often comes down to forecasting future income using a discounted method. An example is M. Friedman's monetary model. It should be noted that M. Friedman understands human capital as a certain fund that provides permanent income to labor.

The methodology based on this approach is associated with a number of distortions:

- Impossibility of full accounting and reduction to a common denominator of the various non-monetary benefits provided by human capital;
- The probabilistic nature of future changes in all spheres of life. While it is possible to predict with high certainty the future duration of working life for various categories of the population, the assessment of future risks associated, for example, with unemployment, is extremely unreliable;
- the multiplicity of factors affecting wages and other labor income, the difficulty of differentiating income for human capital and other factors of production (Soboleva, 2009).

Within the framework of the considered approach, a comprehensive methodology for assessing the development of an organization's human capital is proposed by N.N. Shash. Defining human capital as a stock of “knowledge, skills and experience of personnel (in the form of intellectual abilities and practical skills obtained in the process of training and practical activity), which becomes a source of creation and distribution of various types of innovations (products, technologies, intellectual models), brings organizations income in the form of profit; is measurable and basic for the formation of market, structural and consumer capital, together with which it forms the intellectual capital of the organization” (Becker, 1964), the author considers it expedient to use the expert method to assess this capital. The named method allows one to assess the quality indicators that characterize both the individual characteristics of a particular employee and the properties of the organization's employees in the aggregate. The implementation of the method usually involves the following stages: determination of key assessment indicators; establishment of weight shares (coefficient of significance) for each indicator; determination of a point scale for assessing each indicator; assessment of specific workers; analysis of results.

According to N.N. Shash, the methodology for measuring individual human capital should be based on the following principles:

- Assessment of all expenses for personnel training and development. Moreover, these costs should be excluded from the cost structure and considered as long-term investments;
• Determination of the return (in this case, it is necessary to take into account any contribution of the evaluated employees to the improvement of all business processes of the organization) from funds invested in personnel training and development programs;
• The use of indicators that allow you to make a real monetary value;
• taking into account the relationship between the performance of the organization and the prevailing moral climate (Becker, 1964).

The author has developed an integral system of indicators for assessing the development of an organization’s human capital, which includes the following indicators:
• Share of new products in total sales;
• Volume of orders stimulating the search for new solutions;
• Implementation of innovations;
• The estimated cost of replacing the knowledge bank;
• The number of clients forming the company’s image; customer satisfaction;
• Repeatability of orders;
• Sales per customer;
• Profit per client;
• Loyalty to the trademark; growth of the serviced segment;
• The volume of sales per employee;
• The ratio of sales to non-production costs;
• Growth in the number of employees engaged in intellectual work; the attitude of employees towards the company (Becker, 1964).

Determination of the level of indicators of human capital development was carried out on the basis of industry-wide comparisons using the benchmarking method. As a result, for each indicator, the values of three levels are determined: high, medium, low.

Expanding the possibilities of the expert method in order to convert the obtained indicators into monetary form, the author proposes to use a methodology created on the basis of the D. Phillips model and including four stages (Fig. 2).

![Diagram](image-url)

**Figure 2.** Expanding the possibilities of the expert method in order to convert the obtained indicators into monetary form (Source: Becker, 1964).

A similar procedure for assessing N.N. Shash proposes to hold at least twice a year in order to track changes in the organization’s human capital.

3. Results

Of course, the presented methodology can serve as a tool for assessing the human capital of organizations specializing in the production of science-intensive and innovative products (which is confirmed by its application in the Diplor Corporation, the Volga Region Center for Management and Innovation, Alfa Group LLC, Nita LLC, LLC “A-1”, “Galen-Consulting Group”). At the same time, analyzing the nature of most of the proposed indicators for assessing the development of human capital, it is difficult to agree with the opinion of N.N. Shash about the universality of this method and the possibility of its use in different industries.
The third approach, which focuses on the very fact of possessing special intangible wealth and assumes the assessment of human capital through the parameters of its carrier, is applicable within the framework of a socio-economic system of any level. Naturally, the data collection methods will differ.

The most widespread is the assessment of human capital based on the average number of years of study. Despite the great popularity of this indicator, it is actively criticized. So, I. Soboleva emphasizes that the indicator is completely unsuitable for measuring the total stock of human capital. Direct summation of the number of years of study will inevitably give a distorted characteristic of the aggregate stock of human capital of the socio-economic system: the stock of two workers, each of whom studied for six years, will be equal to the stock of one worker with a full twelve-year education (Soboleva, 2009). In our opinion, the indicator does not take into account such an important circumstance as the correspondence of the knowledge and skills acquired as a result of training to the nature of the use of labor. According to the results of the Russian monitoring of the economic state and health of the population in 2008, less than half of people with higher professional education worked exactly in their specialty, and the share of people with secondary vocational education and working strictly in their specialty was just over a third.

According to K. Mulligan, the adequacy of estimates as a result of using the indicator of accumulated years of education can be achieved if four conditions are met:

• All categories of workers are completely replaceable among themselves;
• There is a constant elasticity of substitution between different groups of workers;
• A year of education always brings the same increase in knowledge and skills, regardless of the field of study (specialty) and the quality of teaching and technological base (infrastructure);
• Employee productivity is directly proportional to the number of years of education (Mulligan, 1995).

Functional literacy is a fairly new indicator used to assess human capital. To determine it, standard international tests are used within the framework of modern monitoring studies:

• PRILS (Progress in International Reading Literacy Study) - carried out by the International Association for the Evaluation of Educational Achievement (IEA) in order to assess the reading literacy of primary school students; started in 2001, the frequency is once every five years;
• TIMSS (Trends in International Mathematics and Science Study) - carried out by the IEA to assess the mathematical and natural science literacy of students in grades 4 and 8; held since 1995. At intervals of four years;
• PISA (Program for International Student Assessment) - carried out by the Organization for Economic Cooperation and Development of the OECD (OECD - Organization for Economic Cooperation and Development) and assesses the humanitarian, mathematical and natural science knowledge of students at the age of 15; held since 1997. Three-year cycles;
• IALS (International Adult Literacy) assesses functional literacy of adults (Russia does not participate in IALS).

With a certain degree of conventionality, the human development index can be attributed to the number of natural indicators for assessing human capital.

Van Leeuwen notes: “The set of indicators used today to measure human capital are so large and diverse (both in theoretical and methodological sense) that the estimates obtained on their basis are weakly correlated with each other. This diversity significantly complicates cross-country comparisons, which, however, are necessary to assess the differences in the saturation of national economies with human capital” (Van Leeuwen & Foldwari, 2008; Rahman & Bobkova, 2017). It should be added that the diversity and heterogeneity of the assessment parameters used today complicates the processes of measuring human capital not only at the macro level, but at the level of the individual.

4. Discussion

It should be noted that most of the existing methods for assessing human capital contain a combination of the approaches we have identified.

The third problem is associated with the imperfection of information databases required for assessing human capital.

The primary data required to assess the quality and quantity of human capital is available only for some countries. Russia is among the countries with the greatest deficit of data reflecting the characteristics of human capital. The information available today at the disposal of the Federal State Statistics Service, characterizing the parameters of the country’s population, is insufficient to assess the state of human capital. A definite addition to the state statistics existing in our country are the results of the Russian Longitudinal Monitoring Survey, which is a nationwide household survey (the number of surveyed households is almost five thousand) on a large list of issues. The scale of this project is also evidenced by the composition of its participants: Institute of Sociology RAS, Research Center ZAO Demoscope, Institute of Nutrition of the Russian Academy of Medical Sciences, National Research University - Higher School of Economics, Center for Economic and Financial Research and Development at the Russian School of Economics, University of North Carolina at Chapel Hill (USA). The project started in 1992 and at the initial stage, the collection of information was carried out by the State Statistics Committee, since 1994. The survey was carried out by the research center "Demoscope", and since 2010. It is held under the auspices of the National Research
University - Higher School of Economics (in connection with which the official name of the project has changed: Russian Monitoring of the Economic Condition and Health of the Population of the National Research University Higher School of Economics), which logically fits into the global trend. The database formed over the years of research contains information on the structure of employment, educational history and educational plans of the surveyed population, material well-being, the structure of income and expenses. It should be noted that since 2008 the survey has included a set of questions related to the characteristics of the use of human capital.

In world practice, such longitudinal studies of households, in which the same group of objects is studied over a relatively long period of time, originate with the "Panel Study of Income Dynamics" conducted in the USA in 1968. In the 80-90s of the XX century, similar studies began in Great Britain, Germany, Canada, and Switzerland. Today they are held by Australia, New Zealand, India, South Korea and some African countries.

5. Conclusion

Thus, the assessment of human capital due to the identified problems remains an extremely difficult and ambiguous task in its solution. The development of a convincing, reliable mechanism that makes it possible to assess the most important resource of modern social development, accumulated by a living human personality, continues to be a very relevant direction of the theory and practice of management.

References