

# *Research on Cost Accounting of Higher Education Based on Accounting Informatization*

Yang Panhua<sup>1,2</sup>

<sup>1</sup>*Dongchang College of Liaocheng University, Shandong Liaocheng 252000*

<sup>2</sup>*School of Education and Science, Liaocheng University, Shandong Liaocheng 252000*

**Keywords:** cost of education; Cost accounting; Accounting informatization

**Abstract:** With the full implementation of the "government accounting system", the accounting of educational costs in colleges and universities will enter a new stage of full implementation from theoretical discussion, realistic needs, and confirmation of the system. However, within ordinary institutions of higher learning, accounting for the cost of education has not yet been implemented in practice, with reasons for theoretical research, for institutional development and for institutions of higher learning themselves. Aiming at the problems in the course of the implementation of education cost accounting, this paper puts forward the educational cost accounting framework and designs the educational cost accounting based on accounting informatization.

## **1. Introduction**

In July 1934, Mr. Panxulun first proposed the idea and specific accounting method of education cost accounting in the speech of the Accounting Institute of Zhejiang Department of Education. British economist John. In 1958, John Vaizey published the book "Education Cost". The cost of education referred to in the book is actually the government's education expenditure. In 1963, the American and Nobel Prize winner Schultz published the book "The Economic Value of Education" and proposed the concept of the cost of all-factor education. 1979 Economist Aiercha. Elchanan Cohn published the book "Economics of Education" and proposed that the cost of education be divided into direct education costs and indirect education costs. Levin proposed in 1983 that the actual cost of education should include not only public education funds, but also private costs.

The education system of our country is very different from that of foreign countries. The study of the cost of education abroad can only provide some reference and reference for domestic scholars in basic theory and research methods. The research of domestic scholars focuses more on the combination of theory and practice in the light of the actual situation of our country, so as to find a cost accounting system for higher education in China.

After the founding of the People's Republic of China, the study of the cost accounting of education by Chinese scholars was divided into several stages:

Before 1988, since higher education was a complete welfare model "unified" by the government, there was no need to calculate the cost of education.

The first stage of research after the founding of the People's Republic of China was the introduction of the "Accounting System for Higher Schools(Trial)" in 1988 until 1997. The

representative scholars included Yanda, Wanggeng Wangshanmai, and Li Guozheng. The research at this stage mainly focuses on the theoretical framework of education cost accounting. It discusses the education cost, the connotation of education cost in institutions of higher learning, the characteristics of education cost, the classification of education cost, and the significance of education cost accounting. The content of education cost accounting, the period of accounting, the principle of accounting, and the method of accounting are also involved.

The second stage began with the full implementation of the fee system in higher education in 1997. In 1998, the "Education Law of the People's Republic of China" and the 1998 edition of the "Accounting System for Higher Schools(Trial)" were promulgated. The scholars represented by Yuanliansheng, Wuhaiquan, Lingang, Wanshouyi, and Yangshizhong made further studies on the specific content and accounting methods based on the research of the predecessors' basic theories. At this stage, the research on education cost accounting is more detailed and in-depth. It mainly studies the subject of education cost accounting, accounting objects, accounting content, accounting methods, accounting period, and studies the mechanism of education cost compensation. It has contributed to the reform of the relevant system of cost accounting for education in this period and later period.

The Ministry of Finance promulgated the Financial System for Colleges and Universities in 2012, the Accounting System for Colleges and Universities in 2013, and the Government Accounting System in 2018, which will be implemented from January 1, 2019. It also makes the research of cost accounting of education enter a new stage of comprehensive implementation.

## **2. Problems in the Accounting of Educational Cost in Colleges and Universities**

After the introduction of the new system, although the system provides more basis for the accounting of education costs, domestic scholars have also done a lot of research work on the implementation of education cost accounting, but the accounting of education costs in institutions of higher learning has not yet been really implemented. There are mainly problems in the following areas.

### **2.1 The unclear object of accounting for education costs**

The cost of education can be divided into schools, colleges, departments, majors, and classes according to the scope of management; The cost of education can be divided into literature, science, engineering, and art according to professional categories; Educational cost objects can be divided into specialties, undergraduates, masters, and doctors according to academic level; The costs of education can also be classified geographically, or they can be cross-grouped with each other and more classifications can be generated.

### **2.2 Inaccurate accounting of educational costs**

It is difficult to determine the cost of education. The main contents of the accounting are whether or not the cost of retirees, the cost of using fixed assets, the cost of logistics services, and the cost of scientific research are included in the cost of education. These four costs account for a large proportion of the total cost of universities. The way in which its costs are accounted for will have a great impact on the results of the unit cost of education.

(1)The funds for retirees include the living expenses, welfare expenses, activities expenses, and medical expenses of retirees. These expenses are strong in policy and rigid, and they account for a large proportion of college personnel expenses. The inclusion of retiree funding, the criteria to be used and how to account for the costs of education in the current period are controversial.

(2)Fixed assets are the most basic material conditions for higher education, and their consumption should also be the main content of higher education costs. However, because many theoretical and practical problems of higher education costs have not been solved, the depreciation of fixed assets is a difficult point in the management and accounting of higher education costs.

(3)University logistics service is an important condition for the development of higher education. For a long time, the logistics of universities in China have been self-contained, and schools have run society. In recent years, through the reform of logistics socialization, the introduction of social funds to expand logistics facilities has complicated whether or not the cost of university logistics services includes the cost of higher education and how to include the cost of higher education.

(4)Scientific research is one of the important social functions of higher education. Together with teaching activities, it constitutes two of the most important activities in universities. Scientific research activities not only directly serve the society, but also can improve the education and teaching level of the school as a whole. Therefore, research universities and teaching and research universities spend a considerable proportion of their research expenses on school careers, and the higher the level of research, the greater the expenditure on research. Whether or not the cost of scientific research should be included in the cost of education and how to include the cost of education are also unavoidable issues.

### **2.3 The unclear period of accounting for education costs**

Some of the business product cost accounting cycle is consistent with the production cycle, and some of them are consistent with the accounting cycle. The product cost accounting cycle selects different accounting cycles according to the characteristics of different products. The accounting period for the cost of education is based on the monthly, annual, semester or academic year. Due to the uncertainty of the object of accounting for the cost of education, the content of the accounting must also be taken into account in the relationship between the school budget and the national budget, so it is difficult to determine.

### **2.4 The unformed method of costing education**

The methods for calculating the cost of an enterprise's products include the variety method, the batch method, and the step method. However, as far as colleges and universities are concerned, whether they use the method of calculating the cost of an enterprise's products or establish a unique cost accounting method for the cost of education in colleges and universities, there is no result. Some scholars have proposed that the calculation methods of college education costs are divided into three types: statistical analysis method, accounting audit algorithm, and accounting adjustment method, and have not been recognized by the academic community.

### **2.5 The construction of the supporting system of the new system has not kept pace**

From the perspective of institutional development, the construction of supporting systems for the new system has not kept pace, resulting in the failure of the new system to truly implement it. For example, the most important item that affects the accounting of education costs is the depreciation of fixed assets. This work involves clarifying the fixed assets related system, formulating the operating specifications for the depreciation of fixed assets, cleaning up and classifying of fixed assets before launch, determining the depreciation ratio of each type of fixed assets, daily handling of fixed assets after start-up, establishment of institutions, and improvement of systems. In addition, after the depreciation of fixed assets in colleges and universities, the net value of fixed assets in colleges and universities will be greatly reduced, which will directly affect the amount of equipment

per person. The progress of this work has seriously affected the implementation of education cost accounting.

## **2.6 Lack of Cost Accounting Consciousness**

From the point of view of the universities themselves, the universities themselves lack the consciousness of cost accounting. 1) There is no external pressure for colleges and universities to implement cost accounting. The competent departments of colleges and universities have not strongly demanded that colleges and universities must carry out the accounting of education costs. With the widespread implementation of tuition fee collection in colleges and universities in recent years, students' parents have also realized that paying tuition fees is a necessary obligation. For the children's future, as long as the children can enter the ideal University, the amount of tuition fees is not a problem. Few people consider the relationship between tuition fees and student education costs, and few people require universities to provide real education costs. 2) Colleges and universities lack the internal motivation for costing education. Influenced by traditional ideas, colleges and universities always believe that since school expenditure is controlled by the budget, there is no need for cost accounting. In addition, accounting for education costs will also increase accounting costs, and the importance of accounting for education costs will not be recognized.

## **3. Analysis of Educational Cost Accounting in Colleges and Universities**

### **3.1 Analysis of the cost accounting environment in institutions of higher learning**

(1) The starting point for cost accounting between institutions of higher learning and enterprises is different. The most essential difference between the cost of higher education and the cost of enterprise is that the cost of education does not seek to minimize the cost, but seeks to maximize the social benefits. Enterprises pursue unit product cost. The more small enterprises are competitive in the same market, and the pursuit of the average cost of life in universities is very different. For universities, The higher the average expenditure on education, the higher the investment in education and the higher the average amount of expenditure on scientific research, the more the school develops, the higher the school level, and the smaller the average amount of expenditure on management, the more efficient the school management is. The smaller the amount of per capita logistics expenditure, the better the school's economies of scale. Therefore, the size of the per capita cost of education does not explain any problem. The key depends on the size of the per capita cost project.

(2) The basis for cost accounting is different between ordinary institutions of higher learning and enterprises. The accounting system of enterprises is based on the accrual accounting system. Even if the new "government accounting system" adopts a dual basis, it will take time for institutions of higher learning to truly reach the accounting level of enterprises. In addition, the cost of education has more common costs, less direct costs, and the proportion of personnel costs in education costs is large. It is much more difficult to calculate the cost of education than enterprises.

(3) The accounting treatment of ordinary institutions of higher learning and enterprises for cost accounting is different. Enterprises involved in enterprise income tax and other taxes, must be accurate cost accounting, the incorrect cost accounting directly affects the amount of tax payable in the current period. Therefore, after the completion of enterprise cost accounting, there are many businesses, and it is also necessary to transfer production costs to inventory commodities. As the commodities are sold, they are transferred from inventory commodities to the main business costs. The main business costs and the main business income are transferred to the current year's profits. Calculate current business income tax payable. For institutions of higher learning, the first thing to

consider is the budgets and final accounts of colleges and universities, and the state budget funds account for an absolute proportion of colleges and universities. Therefore, colleges and universities must strictly formulate the budgets and final accounts of schools in accordance with the requirements. The basis of the national budget and final accounts is the cash basis, and it is impossible for colleges and universities to fully account on the accrual basis when they deal with accounting. In addition, colleges and universities do not involve income tax issues, and there is no need for real cost accounting.

(4) The level of accounting informatization in general higher education schools is generally high. Compared with enterprises, accounting personnel in colleges and universities have a relatively strong ability to accept new things. The overall quality of accounting personnel is also higher than that of accounting personnel in general enterprises. For example, the academic qualifications of new financial personnel in colleges and universities are generally above undergraduate level, and the threshold of some colleges and universities has even reached the level of at least master's degree. In addition, the level of educational accounting software in colleges and universities is also changing rapidly, and its functions are becoming more and more powerful.

(5) Data on cost accounting for education are fully available. On the basis of accounting informatization, the amount of information provided by colleges and universities can meet the needs of educational cost accounting. Each expenditure business that takes place in institutions of higher learning must involve primary accounting subjects (education expenses, research expenses, administrative expenses, logistical support expenses, retirement expenses, etc.), secondary accounting items (financial subsidies, non-financial subsidies, etc.. Expenditure, other Funds expenditure), third-level accounting subjects (basic expenditure, project expenditure), and accounting for auxiliary subjects (economic subjects, functional subjects, departments, projects, etc.). In this way, according to the number of sectoral subjects, the amount of education expenditure in a certain department can be obtained; According to economic subjects and sectoral projects, you can also get the amount of salary and welfare expenditure of a certain department or project, and the amount of commodity service expenditure; By subjects, economic subjects, departments, projects, you can get the expenditure of a project under a certain department for education, scientific research, the amount of money spent on wages and benefits, and the amount spent on goods and services. This amount of data is very large and can fully meet the needs of educational cost accounting, and the quality of data based on accounting is relatively high. If additional supplementary accounting subjects are added, the amount of data obtained will increase geometrically.

(6) The departments in charge of ordinary institutions of higher learning pay more and more attention to the educational cost accounting work, but it takes time for the work to advance. With the establishment of the main status of universities, the University's own understanding of the educational cost accounting work will also be more and more in place. This also requires a gradual process.

### **3.2 Structure of educational cost accounting in institutions of higher learning**

Based on the above analysis of the cost accounting environment, it is also stipulated that the cost management of colleges and universities is only internal cost management in the financial system of universities. Therefore, under the accounting system of new institutions of higher learning, the way in which cost accounting is conducted in institutions of higher learning can not be completely copied from the way of cost accounting of enterprises, and what cost accounting is defined as the object of cost accounting from the theoretical framework. The scope of cost accounting includes those, and what accounting methods can be adopted. According to the actual situation of colleges and universities, we should not only consider the characteristics of the budget management of

colleges and universities, but also consider the requirements of education cost accounting and cost analysis, and find out the educational cost accounting framework suitable for colleges and universities.

(1) Layering the objects of cost accounting for education. According to the departments and projects in the management of school funding indicators, the objects of education cost calculation can be determined by schools, colleges, departments, majors, classes, etc.. An expense expenditure can be directly included in the accounting object at the lower level, and if it can not be directly included in the accounting object at the lower level, it shall be included in the accounting object at the lower level. For example: can be directly included in the cost of a class, directly included in a class; Can not be directly included in a class, can be directly included in the professional, directly included in the professional; If it can not be directly included in the profession, it will be considered for inclusion at the department, hospital or school level. Its cost accounting principle is to account for the costs incurred to a relatively low level. In the cost accounting of education, we can get the cost information of the corresponding level accounting object according to the information of the accounting object we need, and the expenses in the other level accounting object are collected or assigned to that object. This method is flexible and accurate, and it is also easy to operate.

(2) Open costing of education. With the implementation of the old-age insurance and occupational annuity system in China in 2015, the issue of retiree costs has been basically solved, and no new retiree costs will appear in the future. The existing retiree costs can be accounted for in a separate cost item. After the implementation of the new system, the issue of fixed asset usage fees has also been clarified. The purchase cost of equipment should not be included in the cost. The cost included in the cost is the fixed asset usage fee expressed in the form of depreciation, and can be analyzed in a separate cost item. For other matters that are not clearly defined, such as the cost of logistics services and the cost of scientific research expenditures, or it is not possible to clearly distinguish whether or not education costs should be included, we can use a separate project to calculate the cost by shelving disputes.

(3) The period of accounting for the cost of resilient education. On the basis of accounting informatization, the problem of setting up during the accounting period of education costs is solved. Monthly data information can be extracted and invoked at any time across the month and year, and the costs of what period can be calculated according to needs. That is, there is no need to discuss whether it is a calendar year or a school year.

(4) A diversified approach to costing mixed education. In addition to the cost analysis method of enterprises, the method of cost accounting of higher education can be used in combination with various accounting methods according to the characteristics of cost of higher education. For example, on the basis of accounting informatization in colleges and universities, statistical analysis methods based on accounting can be established. Through the business processing of accounting, direct data of cost accounting can be obtained, and then the accounting of education costs can be realized on the basis of data analysis.

#### **4. Design of Educational Cost Accounting Based on Accounting Informatization**

Accounting informatization has been carried out in colleges and universities in our country, which provides a good platform for colleges and universities to carry out accounting analysis of education costs. With the implementation of fine management of budget law, the conditions for colleges and universities to carry out cost accounting analysis have basically matured.

In the accounting information system environment, accounting subject coding can be used for stereo subject design. The three-dimensional subject method refers to separating a large number of repeated subjects in the subject from the subject system, storing them according to the project, and

establishing dynamic links between the project and the subject to achieve the purpose of fine accounting while satisfying the optimization of the accounting subject system. The auxiliary accounting and management in the three-dimensional subject design is an important function of China's General accounting software. The auxiliary accounting and management is to strengthen the function of accounting management, and under the premise of improving the subject setting, It provides more valuable information from the management point of view by means of departments, units and individuals, and project files, and by means of detailed accounting by departments, units, individuals, and project files. On the basis of accounting informatization, with the help of the auxiliary accounting function, the cost of education can be calculated and analyzed well.

(1) Add a "cost-accounting object" to support the accounting project. The cost accounting of higher education institutions should be based on the establishment of institutions of higher education, and the corresponding schools, colleges, majors, and classes should be the objects of cost accounting for education. For example, the object of accounting for the cost of education in a university can be: school, A college, A college A major, A college A major, A college A major, A college B major, A college B major, A college B major, A college B major. Class 2, B college, B college C major, Capital expenditure.

(2)According to the actual situation of the school, all expenditure items can be set up as supplementary accounting settings for "cost accounting objects". Among them, capital expenditures such as the purchase of fixed assets in the expenditure category are grouped by the "capital expenditure" in the "cost accounting object" project. At the same time, the "accumulated depreciation" item must also be set up for the "cost accounting object" project auxiliary accounting, and the depreciation amount for the corresponding period shall be allocated to other "cost accounting objects" other than the "capital expenditure" item.

As the existing college accounting subjects and economic subjects have been relatively detailed, there is no need to set up "cost projects" auxiliary accounting projects.

## 5. Conclusions

The Government Accounting System provides a good institutional basis for the Advancement of accounting for education costs, in particular the implementation of depreciation of fixed assets and amortization of intangible assets, as well as the consolidation of the pension system in 2015 and the implementation of the occupational annuity system. The accuracy of education costs is greatly improved, but the new accounting system has not yet implemented a full accrual basis of accounting. There may be some deviation between the calculated average cost of production and the actual cost, but this deviation is insignificant compared to the total cost. The impact on the average cost of living is not significant. In addition, at this stage, it is always better to touch the stone and cross the river than to just discuss the theory. If this kind of accounting can not calculate the true mean cost of life, it will provide very useful data for financial analysis. Will greatly improve the quality of accounting information. Under the accounting information system, the setting up of three-dimensional subjects and the powerful report function are used. The conditions for the accounting of education costs through the auxiliary accounting function are basically mature, and the workload for financial personnel has increased little. However, the quality of accounting information provided to schools will be greatly improved to provide financial data for the correct decision-making of schools. The problem that needs to be solved is that the cost and cost of the higher level of accounting objects may be relatively large, and how to reasonably and accurately allocate it to the lower level of accounting objects is based on the number of students. It is worth further studying whether to use the budget allocation index as the standard or to use the activity-based cost method to establish the operation center.

## References

- [1] Wanggeng. *Discussion on the costing of higher full-time school education*[J]. *Accounting Research*, 1998(6).
- [2] Wangshanmai. *Research on Educational Inputs and Outputs*[M], Hebei: Hebei Education Press, 1996.
- [3] Yuanliansheng. *Discussion on the Measurement of Education Costs*[M], Beijing: Beijing Normal University Press, 2000.
- [4] Lingang, Wu Lei. *Research on the Cost of Higher Education*[M], Beijing: People's Publishing House of China, 2008.
- [5] Wanshouyi, Qu Jingshan. *Research on the Accounting of Educational Costs in Colleges and Universities* [J]. *Journal of Northeastern University of Finance and Economics*, 2010(3).
- [6] Wuhaiquan. *Discussion of Several Special Issues in Cost Measurement of Higher Education*[J]. *Education and Economy*, 2004(1).
- [7] Yangshizhong, Mayuanju. *A pioneer in the promotion of cost accounting for school education -- A review of Mr. Panxulun's thought on cost accounting for education*[J]. *Accounting and Economic Research*, 2013(5).
- [8] Fengbaojun, Liyanxi, Zhangyuanjing. *Empirical study of the cost composition of education in Chinese research universities* [J]. *Accounting Research*, 2013(3).
- [9] Liu Jianmin, Maojun, Wujinguang. *Education Cost Measurement Model and Its Application*[J]. *Higher Education Exploration*, 2013(2).
- [10] Zhangqinyu. *Analysis of the Construction of a Unified Cost Accounting System*[J]. *Shandong Social Science*, 2015(12).
- [11] Houyufeng. *Design of computer accounting stereoscopic subjects and their coding systems*[J]. *Accounting Monthly*, 2012(5).