



## Study on the Application of RCA in College Education Cost Accounting

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### Abstract

The resource consumption accounting (RCA) integrating activity-based costing (ABC) with Germanic flexible marginal costing (GPK) is not only a new cost accounting method, but the innovation of the cost management system. Its application has been gradually emphasized by more and more people, and the application range is extending continually. Combining with the characteristics of college, we discussed the applicability of RCA in the college education cost accounting in this article, and simply narrated the application approaches of RCA and the problems in the application that should be concerned by us.

**Keywords:** Resource consumption accounting (RCA), Education cost, Applicability

### 1. Introduction

After RCA was proposed in 2002, it has been concerned broadly in theory and practical application. Except for the application in enterprises, its application in public institutions has been more and more emphasized. Combining with the characteristics of college, we will discuss the applicability of RCA in the college education cost accounting in this article.

### 2. Brief introduction of RCA

RCA is a sort of new cost accounting method which was pushed in America since 2002, which combined some advantages of GPK and improved ABC. RCA not only inherited the cost accounting idea of ABC, i.e. "activity consumes resources, and product consumes activity", but also absorbed the skill and practical application experience of GPK, i.e. pursuing the consumption of cost to the center of the cost, so it is very meaningful whether for the theory or the practical application.

The theoretical base of RCA is composed by three important factors including resource analysis, quantitative method and cost attribute.

First, the concerned base of RCA is the resource. Though RCA still adopts the accounting idea of "resource-activity-product", but its emphasis is transferred to the "resource", not the "activity" in ABC.

The resource defined by RCA is generalized, and it includes various objectives such as worker salary, raw material and fixed assets depreciation consumed by activity. The resource includes not only the resource consumed by the activity, but also the resource consumed by the resource itself. According to causality of "activity consumes resource, and product consumes activity", RCA takes the consumption of resource as the focus to calculate the costs, i.e. RCA distributes the costs to the cost objectives according to the resources, and solves the problems of cost distribution and cost management happened in the transfer of product values from one department to another department.

Second, RCA used the output quantitative method to distribute the cost. RCA is the cost distribution method based on measurement, and all resource consumption and activity consumption in RCA have quantitative standards which can be measured only. That can qualitatively describe the causality between resource consumption and cost distribution, but quantitatively confirm the reference of cost distribution.

Third, RCA cognizes the two dimensions of cost attribution. RCA observes and obtains the fixed cost habit from the supply of resource, and divides the cost region into fixed cost and variable cost. The resource supply cost changing with the positive proportion of output is defined by the variable cost, or else, the cost is fixed costs, which could cognize and distribute the cost in nature.

Comparing with traditional cost accounting method, the advantages of RCA are mainly embodied in three aspects. First, RCA could exactly confirm the cost distribution rate and more exactly distribute the cost through the resource analysis

and the selection of quantitative method. Next, RCA could open up the resource use rates of various departments and perform difference analysis and performance checking, and implement the responsibility system into fundamental departments by computing the surplus unused abilities of various departments. Again, RCA could provide information on different layers such cost information, marginal cost information, surplus unused ability and department resource use rate for the decision-makings such as cost management or higher layer policies.

### 3. Analysis of the applicability of RCA in college education cost accounting

In B.D. Clinton and D. E. Keys' articles, they pointed out that when following problems existed in the enterprise, the enterprise should consider implementing RCA.

- (1) The resources of enterprise are wasted, but that has not been predicted (for example, the actual productivity is excessive leaves unused) or the resource demand and use can not be predicted (for example, the planned productivity is excessive or leaves unused);
- (2) The product manager and service manager often complain that they assume unused productivity cost which they should not assume;
- (3) When those managers who often are responsible for the nature of changing cost make the decision of profit optimization (such as product reorganization), they encounter the output-side fixed-cost-death-spiral;
- (4) Lacking in sufficient resources or indecisive resources to be used (for example, the employee shift and the sharing of equipment among departments);
- (5) Because the economic confirmations of the fixed, half-fixed and variable costs are not be considered sufficiently, the prediction of future resource consumption (and sequent production and output costs) is lower than the practice;
- (6) Outsourcing service can not achieve anticipated effect (for example, facing the input-side fixed-cost-death-spiral of the fixed cost);
- (7) Because lacking in the comparison analysis of the budget and practical consumption, the correct improved measures can not be adopted.

Comparing with above problems, we can find out some problems in college talent cultivation as follows.

- (1) The education cost of college is hard to be accounted exactly. Traditional accounting method can only provide some basic cost information, and the precision can not achieve the requirement, which will induce the cost diversion and distortion.
- (2) The resource use efficiencies of various departments lack in exact evaluation, and part of education resources are wasted seriously, for example, some books and materials are purchased too much, but utilized less, and these wastes are often hard to be measured.
- (3) The financial budget of college lacks in the comparison and analysis with effective financial information, so the existing problems can not be found and improved in time.

Except for above problems in colleges, following characteristics in the college talent cultivation objectively require using new cost accounting method.

First, the indirect charge is high. The proportion of the indirect charge in the college talent cultivation achieves 60%, except for the scholarship, poor student subsidy and exercitation charge which can be directly numbered into the education cost, other charges such as the organizational teaching charge in the teaching management department, the enrollment charge of the admission office, the personnel charge, water and electricity and heating charge in daily management education all belong to indirect charge, so we should select a sort of cost accounting method which can exactly account the indirect charge when we account the education cost.

Second, there are numerous kinds of "product" in college. If the college regards its students as the output objectives, they can be divided into students of the foreign language college, students of the science college and students of the arts college according to the division of department, and they can be divided into junior college student, undergraduate, graduate and doctor graduate according to the cultivation layer of students, and they can also be divided by different specialty. So we need a sort of cost accounting method which can exactly and reasonably distribute the cost in many products.

Third, the college needs multi-layered accounting information serving for various decisions, for example, whether the enrollment amount should be increase or decrease, whether the computers in the computer center are sufficient, how many certain equipments in the experiment should be added to fulfill students' uses, and so on. Though these decisions have different layers, but they all need certain accounting information to be the references for the decision. And the accounting information should be multi-layered, and they are not only single cost information. So the education cost accounting method selected by the college should offer multi-layered and visual accounting information including cost

information.

Fourth, the “production and management” of the college should possess the characteristic of complexity. The college is the synthesis integrating teaching, scientific research, industry and logistics. Starting from enrollment, various teaching activities, students’ daily management activities, idea education, social practice, various assistant teaching activities, graduate instruction, and relative activities about students’ education cultivation all develop and intercross at the same time. Therefore, we should concretely analyze the characteristics and reasons of various activities, strengthen the management and optimization of different activities, find out the holes in the management, eliminate non-increment activities, and reduce the education cost.

Fifth, the cost responsibility of the college is indefinite. As the public institution, college is different to the enterprise. Because of strict checking standards, the responsibility of the enterprise products can be implemented easily. But for the products of college, students, they can be checked only after they go to the society. Even if the problem of “quality” occurs, it is hard to investigate the responsibilities of relative departments. So we need a sort of cost accounting method which can open out the responsibility in the students’ cultivation process.

Combining with above contents, we can easily find following reasons for the application of RCA in college.

First, RCA could exactly distribute the indirect cost.

Because the accounting method could exactly distribute the indirect cost before RCA is ABC, so many domestic scholars are actively advocating the application of ABC in college cost accounting. However, because of some instinct deficiencies of ABC such as the insufficient existing college cost accounting system and inexact cost drive distribution rate, ABC can not be implemented in college accounting up to now.

As the extension and supplement of ABC, RCA still adopt the cost accounting idea of ABC, “resource-activity-product”, but it perfect ABC in many details, for example, every activity only has one motive which can be quantified. So in RCA, the cost drive distribution rate confirmed by single drive is more exact. In addition, the use of resetting depreciation cost in RCA could solve the problem of the unequal cost distribution induced by different cost accounting periods. These improvements all make the indirect charge distribution more exact.

Second, RCA could exactly distribute the cost among various products.

Unlike ABC emphasizes the activity, RCA more emphasizes the accounting of resource. It divides different activities from the headstream, and directly account the resources consumed by different activities. Going with the division of cost attribution (RCA divides the cost into fixed cost and variable cost), RCA always blocks off the resources and the activity consumed by different products when it accounts the products of different kinds. Because it could respectively account the product kinds and activities, so it can more exactly distribute the cost among numerous products with different kinds.

Third, RCA could offer multi-layered accounting information for the management layer of college.

RCA could exactly account the complete education cost of college students and offer the most basic complete cost information. Because RCA combines the advantages of GPK, it can offer the information of marginal cost, and provide references for some decisions of college such as the pricing of tuition and the confirmation of enrollment amount of various specialties. And the RCA also can offer non-financial information such as the resource use rate information of various departments obtained by computing the surplus unused ability to enhance the management decision ability of college.

In addition, RCA could find non value-added activities like ABC to eliminate the non value-added activities and reduce the expenditure of cost. Of course, as the public institution, college should not cut expenses to the best, but should enhance the use efficiencies of various resources based on existing expenditures.

Fourth, RCA could adapt to the complexity of the “production and management” of college.

The activities of college are numerous and complex, if RCA puts the emphasis in the activity like ABC, the cost distribution will not be exact. RCA put the emphasis in the resource and divide the whole accounting process from the headstream, so the accounting result is more exact. In addition, because the cultivation process of college students is generally fixed, so the management layer of college will always ignore the importance of the control of the activity process. And traditional cost accounting methods only account the whole cultivation cycle, the accounting result can be obtained only if the cultivation period ends and they can offer few cost information in the process. But RCA could dynamically offer the cost accounting information in time, so the management layer could control and manage various activities in the students’ cultivation process.

Fifth, the application of RCA could strength the responsibility control of college.

The result of RCA offers references for the comparison analysis of the budget plan and actual running of college such as the computation of surplus unused ability, which could help the college carry out the responsibility to concrete

department and individuals. And these financial information and non-financial information could help the college to institute the performance checking standards for various departments.

#### **4. Application approaches of RCA in college education cost accounting**

Combining with the accounting characteristics of RCA and the particularities of college education cost accounting, the application of RCA in college education cost accounting includes following approaches.

##### **(1) Dividing activity center**

The activity center is the activity set composed by a series of activity which associate each other and could implement certain special function. Here, we set up the activity center according to the department, which can make for the department management, and these activity centers concretely include teaching management department, student management department, teaching assistant department and relative administration department.

##### **(2) Dividing resource rally point**

The resource rally point is similar with one unit in the cost center in the management accounting, and all costs (resource consumptions) happened in this unit are rallied here. According to the structure division of various departments under the activity center, the resource rally point can be divided into the resource rally point of educational administration office, the resource rally point of student office and so on.

##### **(3) Rallying the resources in various resource rally points and differentiating their cost attributes**

According to existing college accounting system, the charge expenses of education resource can be divided into personnel expense, daily public expense, fixed asset depreciation, and subsidy to family and individual. We can use these four kinds of expense for references to classify and rally the resources, and divide the cost region into fixed cost and variable cost according to the cost attribute to account respectively.

##### **(4) Subdividing the activity**

According to the property of activity, we subdivide the activity, for example, the teaching management department could be divided into teaching organization, teaching reading and editing, exercitation management, experiment management, teaching travel, teaching instrument repair, subject construction, teaching reform, cultural quality education, and other activities.

##### **(5) Distributing the resource to the activity**

Distribute the resources to various activities according to the analyzed resource drives. The activity consumes many resources such as human power, material, equipment and cash, so the resource cost should be distributed to the activities according to the resource quantity consumed by the activities.

##### **(6) Distributing the activity to the product**

To select proper activity driver to distribute the activity cost is the last part of the accounting part in RCA. The key to distribute the activity cost is to exactly compute the activity drive rate which means the cost of the unit activity driver of each cost base. The student's education cost of certain activity could be obtained by the activity driver amount consumed by the student multiplies the cost driver rate. The student's education cost of certain specialty and certain layer equals to the cost sum of various activity centers which should be paid for cultivating the student.

##### **(7) Cost control and management**

The main method which uses the accounting result of RCA to control the cost is the budget management which analyzes and evaluates the difference between the actual exertion and the standard amount, and takes the result as the reference for the department and individual performance checking.

#### **5. Problems of the application of RCA in college education cost accounting**

Though RCA is perfect in theory, but following problems should be concerned when we want to apply it into the college education cost accounting successfully.

##### **(1) Exactly identifying the resource**

The resource consumption in RCA happens with the transfer of cost among various departments, and to exactly identify the resource, we should exactly divide the departments and rally the resource according to the department. When dividing the department, we should not only exactly divide the resource, but consider the cost management and responsibility control after accounting. One feasible method is to divide the department according to the institution setting of college, and subdivide individual complex institution according to concrete situation.

##### **(2) Reasonably dividing activity**

The division of activity by RCA is more precise than ABC, but we should consider the concrete degree of subdivision, because if the activity division is not precise enough, it will influence the precision of the accounting result. But if the

activity division is too precise, it will increase the difficulty of the implementation. We can take the department function as the division reference and combine coessential activities or activities with close cost drivers to reduce the workload and enhance the actual running ability of activity division.

(3) Exactly collecting basic information of departments

The basic information of the department such as fixed cost and variable cost is not only the basic material of accounting but the premise ensuring exact accounting. Whether RCA achieves the anticipated result is decided by the collection of the basic information. To acquire the information, except for the financial account books of various departments, we should survey various departments and acquire full and accurate data from various channels, and establish the base of the exact accounting of RCA.

## 6. Conclusions

As new accounting method, RCA combines the theoretical advantages of ABC and the practical advantages of GPK, and offers better solution of the cost accounting and management. It is not only a sort of theoretical innovation, and its practical meaning should be more emphasized.

The application of RCA in college education cost accounting can more exactly account the indirect cost of college, and RCA could adapt to the characteristics of college such as numerous “product” sorts and complex “production and management” activity, and fulfill the multi-layered demands of financial information for college, and offer a wider road for the college accounting. Though the application is still in the experiment stage, but because of the advantages of RCA, it will certain acquire abundant results for the college education cost accounting.

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