

Campus Activity Management Mode and Its Performance Evaluation Based on Activity-Based Costing

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Abstract: According to the traditional management of campus activities for undergraduate students, lacking of the in-process and post-process evaluation feedback standard, which causes many problems, especial for the campus activities' application, organization and implementation. With the help of these unique advantages of Activity-Based Costing (ABC) in the field of direct and indirect cost accounting, taking the campus activities of students in Chinese colleges and universities as the research object, ABC is applied to the specific way of allocating overhead costs based on "campus activities" that actually contribute to overhead costs, such as the campus activities' organization and application, bidding and its evaluation, risk identification and control, mid-term inspection, and post-process evaluation. All these scientific, simple procedures and concrete measures, establishing a new mode of campus activities management and a new method of the performance evaluation to the completed campus activity. Taking an official campus activity held by a certain university as an example, its summer social practice program, the process management and third-party assessment results show the activity-based costing method can provide theoretical support and technical guidance for policy making and scientific management of related campus activities. Furthermore, it is expected to be used in project management of some other related industries.

Keywords: Campus Activity Management, Performance Evaluation, Activity Based Costing, Higher Education Institute

1. Introduction

With the development of society and the fierce competition of economic market, higher education colleges and universities have been transformed from a simple non-profit organization into an independent legal entity [1]. In addition to classroom teaching, colleges and universities also need to further cultivate students' comprehensive quality and personal ability by holding various student activities. At present, a large number of student activities cause the high cost of running a school in colleges and universities [2, 3]. Therefore, how to more accurately evaluate the social benefits of each activity and simultaneously consider its economic benefits has become a difficult problem in front of colleges and universities.

Activity-based Costing (ABC) applies the basic principles of mathematical statistics to quantitatively analyze the

economic value, core technologies and other key characteristics of a business activity, and can accurately calculate the direct and brief costing of such business activity [4-6]. Using this method, the original traditional cost accounting method is improved better, so that people can see the direct connection between the cost consumption and the work they are engaged in, and it lays a good foundation for people to intuitively analyze which is the effective input cost and which is the ineffective input cost [7].

In this paper, based on the analysis and definition of the core activity indicators of students in colleges and universities, we will use ABC cost method to analyze the economic and technical indicators of related activities, grasp the main factors and clarify non-key elements, so as to provide quantitative management technical support for the development of student activity funding policies.

This paper in the first section mainly introduced the basic principle and working parameters of homework cost method,

the second section analyzes the China's institutions of higher learning student organization model and main characteristics of campus activities, in the third quarter in a program under which officials activity, for example analyzes the homework cost method, the application of the last section of the possible problems are discussed and gives the corresponding conclusion.

2. Methods

2.1. Activity-Based Costing Working Principle

Activity-Based Costing (ABC) is a scientific and advanced approach to cost and monitor practical activities. ABC involves tracing resource consumption and costing final outputs, and origins back to the late 1980s by Kaplan and Bruns of Harvard University. With this method, resources are usually assigned to activities and these different activities would be evaluated to their cost objects [7]. Generally, the

latter usage drivers to attach activity costs to outputs and will benefit more effective decisions.

The composition of ABC mainly has two aspects [8]. On the one hand, the core idea of ABC cost method is that accounting subjects allocate resources consumed by accounting subjects to corresponding operations in the accounting process, and then allocate these operations to corresponding cost objects. On the other hand, for ABC costing method, activity is the most basic concept and the core and basis of the method, see Figure 1.

The resources are allocated according to the corresponding resource drivers, and after they are allocated to the corresponding activities, the activities are assigned according to the activity drivers, and finally belong to the corresponding cost object [9-11]. It can be seen that resources and activity motivation play a crucial role in the calculation process of ABC costing [12]. The number of motivations directly determines the accuracy of the calculation results.

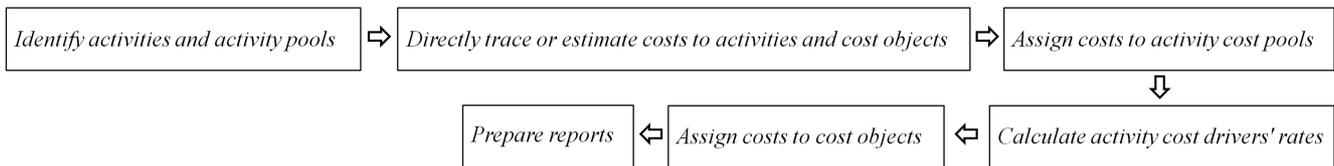


Figure 1. The activity-based costing process.

2.2. Basic Contents of Activity-Based Costing

2.2.1. Accounting Procedures

The final result to be calculated by ABC cost method is product cost. According to the principle introduced above, if the calculation program is backward from the calculation result, the product cost should be calculated through the

operation center, as shown in Table 1.

Therefore, the establishment of operation center and the determination of operation motivation are particularly important. According to the principle of ABC cost method, activities consume their relative resources. In order to calculate the cost of products, the collection and distribution of resources is the first step.

Table 1. The cost composition of a product.

Activity Center	Cost (A)	Motivation (B)	Motivation ration (C)	Production A	Production B
Activity 1	A_1	B_1	C_1	$D_1 = C_1 * A_{B1}$	$E_1 = C_1 * B_{B1}$
Activity 2	A_2	B_2	C_2	D_2	E_2
Activity 3	A_3	B_3	C_3	D_3	E_3
Activity 4	A_4	B_4	C_4	D_4	E_4
Total				$D_1 + D_2 + D_3 + D_4$	$E_1 + E_2 + E_3 + E_4$

Therefore, the establishment of operation center and the determination of operation motivation are particularly important.

2.2.2. Collection and Distribution of Resources Algorithm

According to the principle of ABC cost method, activities consume their relative resources. In order to calculate the cost of products, the collection and distribution of resources is the first step.

According to the above analysis, the accounting procedures of activity-based costing are divided into the following steps:

S_1 Extracting the direct cost of products, in this process, the calculation steps are consistent with the calculation process of traditional cost method;

S_2 Establish the operation center and identify the

consumed resources, in this process, the consumed resources can be obtained in the financial statements;

S_3 Identify the related resources, trace them back to the corresponding operations, and then calculate the related costs;

S_4 determine the cost drivers, in this process, whether to analyze factors related, whether can be measured, is representative and has the characteristics of comprehensive, in front of the introduction, we know that the work motivation plays an important role in accounting, cost drivers, the number of directly determines the accuracy of the calculation results;

S_5 Classify and merge all kinds of operations to determine the cost base;

S_6 Allocate related indirect costs, which shall be determined and distributed by the apportion rate \times product

consumption, i.e.

$$P_i = r_a * p_c \quad (1)$$

where, P_i – indirect cost; r_a – apportion rate; p_c – product consumption.

2.3. Characteristics of Campus Students' Activities

Since the end of last year, the Chinese government strongly pushed for the implementation of the double reduction policy, i.e., easing the burden of excessive homework and off-campus tutoring for students undergoing compulsory education, so called "Double Reduction Policy (DRP)". This has led to a huge increase in the number of student activities for on-campus students [13].

2.3.1. Requirements for Campus Activities Management

The proposed higher education reform policy represented by DRP, in the view of from top to bottom, the deployment of student activities by educational organizations at all levels is increasing day by day.

However, when these colorful student activities are organized on campus, they all have relatively similar forms and contents [14]. For example, they all need to do extensive publicity on campus, accept the initiative of students of each class to sign up, organize assessment, evaluate results, announce results and so on.

Whether the management is fast, convenient and effective reflects the management level of the school organization department. Whether the activities can be effectively publicized and implemented also affects whether the relevant activities can achieve the expected results.

2.3.2. Campus Activity Types

There are many kinds of student activities [15]. Usually, we just hope to classify these student activities types from the perspective of talent cultivation, including students' skills, interests and talents, moral education and cultural construction, and so on.

- 1) Student activity management is one of the important contents of teaching in colleges and universities. Its advantages are as following,
- 2) Enhancing students' practical ability, apply their knowledge to practice, pay attention to practical ability and cultivate practical talents.
- 3) Enriching students' off-school life, cultivate their interests and expertise, let students relax in the heavy study, relieve the learning pressure.
- 4) Enhancing students' social skills, exercise their leadership and overall planning ability.

All types of students' social communication skills and leadership will be exercised during the process of communication and cooperation with their classmates and supervisor teachers.

3. Student Activity Management Design

In order to determine clear management objectives is the

basis for the final evaluation of the effect of the whole management behavior. To solve this problem, it is necessary to formulate scientific and feasible management objectives through a relatively comprehensive project initiation investigation in the early stage, and answer basic questions such as the significance, content, feasibility and objectives of project development, including project sponsors, content, participants, emergency plans, time planning, undertaking units and other elements.

3.1. Project Activity Sponsor Coefficient

Project sponsors are not only the organizers of the project activities, but also the implementation personnel of the project activities, so the effectiveness of their activities should be converted. Among them, one point is counted for each hour of synchronous participation, and one standard point is determined according to the goal of activities in each stage. Therefore, the aggregation model formula of each participant's workload is as follows:

$$W_1 = \sum_{i=1}^n T_i (R_1 + R_2)_1 \quad (2)$$

where, W_1 – participator's basically activity factor; n – participator number; R_1 – sponsor coefficient; R_2 – efficiency factor.

3.2. Amount of Creative Activities

In the actual implementation process of activities, there are often some unexpected events, so it is necessary to invest extra amount of work, and different points can be calculated according to the difficulty of the problem, the time spent, the amount of money spent, etc. The overall calculation formula is as follows:

$$W_2 = \sum_{i=1}^n V_i * C_i \quad (3)$$

where, W_2 – confliction activity factor; n – activity number; V_i – i^{th} activity point number; C_2 – activity number.

3.3. Potential Development of the Activity

Since the amount of money spent often determines to a large extent the availability of funding from institutions of higher learning, it is necessary to make a separate calculation of the amount of money mobilized for project implementation. Here, every 1000 yuan is 1 point, less than 0.1 point is calculated as 0.1 point.

Thanks to the efficient collaboration of team members and the improvement of the overall ability of the team, it can be gradually transformed into a relatively linear product. The calculation formula of the amount of potential development activities is as follows.

$$W_3 = \sum_{i=1}^n \frac{S_i}{N} \quad (4)$$

where, W_3 – potential development factor; n – activity number; S_i – capital consumed for an activity; N – convert coefficient, usually 1 point per RMB 1,000 Yuan.

3.4. Carry out the Investigation

The investigation object is mainly related to the information, personnel and specific activities, focusing on the feasibility and management difficulty of the activity, activity site, management process.

The second step is to refine a creativity theme for the campus activity. Before organizing and carrying out student activities, create a simple and personalized theme for the activity, including:

- 1) Project objective: why to carry out this activity and what is the expected effect;
- 2) Planning and arrangement: what efforts and operation process are needed to carry out the project;
- 3) Subject operation: who will execute the project;
- 4) Time arrangement: specific operation time nodes of the project;
- 5) Location: the specific implementation site of the project;
- 6) Expenditure budget: Summarize the expenditure and expenses consumed in activities and keep records.

3.5. Project Demonstration

After the above steps, the management of an activity has been preliminarily completed. When project management is applied to student activities, it needs not only a sound management plan, but also a complete plan demonstration. An important way to check whether a management program meets the requirements of activity management is through program demonstration. Once there are risks or loopholes in the original management plan, it is necessary to further revise the plan.

4. Activity Manage and Practical Experience from School of Finance

4.1. About ZIFE University

Zhengzhou Institute of Finance and Economics (ZIFE) is a full-time private general undergraduate college approved by

the Ministry of Education [16]. ZIFE is located in Zhengzhou City, the capital of Henan Province.

ZIFE nowadays has been adhered to the direction of running socialist schools, fully implemented the party's education policy, and standardized school running in accordance with law. ZIFE has 13 secondary colleges and 2 teaching departments, covering management, economics, engineering and other disciplines.

The School of Finance has four undergraduate majors: Finance, Investment, Internet Finance and Fintech. The school has the right to grant bachelor's degrees. Every summer vacation, all colleges and universities throughout the country will organize the "Bringing Culture/Science and Technology/Hygienic Health to the Countryside" centralized service activity.

When all students are involved into these programs, not only can they intend to care for children's development of foreign languages, scientific interesting stories, as well as their mental health. With these extracurricular activities, the quality-oriented education based on ability training can easily be accepted by contemporary higher education students, such as integrating integrity education.

When we adopting project-based management mode, each campus activity will need to go through a standardize processes, which are bidding, bid evaluation, risk control, mid-term inspection, post-evaluation and other steps before it can be approved.

4.2. Bidding Activities

At the beginning of the practice activity of the "Bringing Culture/Science and Technology/Hygienic Health to the Countryside" centralized service activity carried out by the university, according to the project-based management mode, the university will give the bidding announcement of the activity to the public in the form of the following bidding document, see Table 2.

Generally speaking, the basic information of activity purpose, activity theme, bidding method, bidder qualification and so on are essential options.

Table 2. Contents of the Bid Invitation Announcement.

Purpose	Theme	Bidding type	Bidder qualification	...	Bidding date
Publicize the government's policies to benefit the people and promote rural development	Growing young students' knowledge and strengthen their practices	Competitive bidding	Student group, less than 15 members; individual not allowed	...	2 Nov., 2021
...

4.3. Bidding Assessment

After the bidding, the Youth League Committee of the College will organize an evaluation committee to be responsible for the evaluation and selection of the proposal within the specified evaluation time. The bid evaluation committee designs the bid evaluation system, deliberates on the feasibility, innovation, influence, budget and effectiveness of the activity plan, and selects the appropriate bidding scheme. The evaluation panel will score the indicators of the activity program.

Considering that the importance weights of the evaluation indexes listed in the school's practice activity were not different, arithmetic average method was adopted to comprehensively score each index. To the feasibility of activities, creativity, influence, funding, personnel five aspects of the score. Five rating scales were set, which were 2, 4, 6, 8 and 10, representing very poor, poor, medium, good and excellent.

4.4. Risk Identification and Its Control

The essence of risk identification is a prediction, so it must

run through the whole process to effectively identify all potential risks.

To refine and quantify the plan as much as possible, effectively improve the response speed and processing capacity of all departments in the face of emergencies, so as to reduce the damage as much as possible. The final text form of project risk treatment is emergency plan.

4.5. Mid-term Checking and Conclusion

From the project beginning date until to its mid-term date, the organization period of this practice activity will be checked. The mid-term defense activity was held on someday in the future. According to the schedule of the activity, the mid-term defense mainly reported the objectives, arrangements, members' health, fundings, etc.

Through the mid-term inspection of the project and supervision of the implementation process of the students, the potential problems can be found in a relatively effective way and lay a good foundation for the smooth implementation of the project. On the other hand, the mid-term inspection is also an important step for students to check themselves and improve the project, so it is welcomed by teachers and students.

4.6. Post-activity Evaluation and Feedback

In order to make a comprehensive evaluation of the "Bringing Culture/Science and Technology/Hygienic Health to the Countryside" centralized service activity and provide experience reference for the school to carry out similar activities in the future.

After the activity, the project impact, project management technology, timeliness and so on were evaluated under the project management mode. For the evaluation of activity results, this study mainly uses five grades of "poor, low, medium, good and excellent", which respectively represent different ideal degrees of activity.

On the other hand, for the hierarchical index weight analysis of activity project management, this study mainly adopts the hierarchical weight analysis method to conduct matrix analysis for the second-level index of the project.

Firstly, a scale table is established based on analytic hierarchy process (AHP).

Secondly, the matrix table is formed through the performance evaluation of the secondary indicators of the activity project.

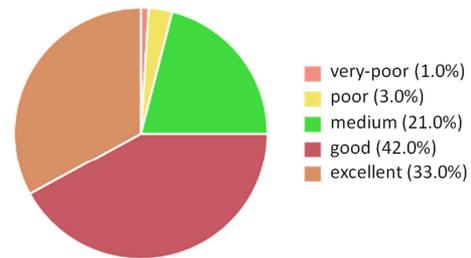
The components of the judgment matrix are calculated respectively.

For the three-level index of the activity project, AHP can also be used to obtain the weight value of the three-level index.

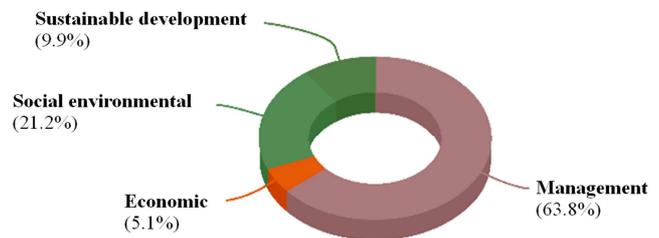
After the weight analysis is completed, the project management review team will score the management of the three-level indicators of the activity and set five scoring levels, namely 2, 4, 6, 8 and 10, representing very poor, poor, medium, good and excellent.

The overall score for the active project management program is derived from the product of each master table

score and its corresponding weight. The total score of the project management plan of this activity is 8.47 (two decimal digits are reserved), which belongs to "good" according to the index score, see Figure 2.



(a) Overall satisfaction for the activity



(b) Weight factor of the evaluation system

Figure 2. Total score of the activity management.

5. Conclusion

(1) Innovate the management mode of student activities and improve the performance of project management.

The implementation of project management solves the bureaucratic behavior in academic activities of college students, improves the collaborative leadership among the team members of college students, enhances the innovation consciousness of the organization of college students' activities, and arouses the enthusiasm of college students to carry out various activities. On the other hand, students can participate more fully in the process of independent planning and active implementation of activities, so that the management department of the school and the responsible person of student activities have a more equal position, and students' fair and benign competition consciousness can be significantly enhanced.

(2) Enhance the subject consciousness of college students and create a new brand of student activities.

To use project management methods for student activities, students must be regarded as an important subject of project management. When the project is established, students should be the main body of the project to start and develop the plan; In the implementation of the project, students form a team to cooperate and help each other in a short period of time, break down tasks and solve problems, and each member undertakes corresponding tasks and responsibilities. The project-based management mechanism adopts the competitive elimination mechanism of survival of the fittest, and the selection activities are novel and thoughtful, which are beneficial to the physical and mental development of students. The

strengthening of competition mechanism enables students to develop individual thinking, promote student activity innovation to a new level, and promote excellent achievements to be transformed and applied in social practice, thus achieving the role of creating a new brand.

(3) Effectively integrate all kinds of resources inside and outside the university to improve work effectiveness and resource utilization efficiency.

Student activity resources will involve human resources, material resources, financial resources and other resources, both the internal resources of the school, and external social resources, not only to learn from the traditional resource utilization methods, but also to fully explore the use of modern resources in new ways. Project management operation of student activities can effectively integrate resources of different sources, different levels, different structures and different contents in student activities, thus enhancing advantages and improving competitiveness. Project management aims at project tasks and maximizes the use value of resources by integrating various resources inside and outside the project. At the same time, full cooperation between student project teams, project management must bring vitality and vitality to the work of the league.

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