THE ANALYSIS OF UNIT COSTING BASED ON ACTIVITY-BASED COSTING (ABC) MODEL IN CLASS X IPA SMA NEGERI 1 CIPARI KABUPATEN CILACAP ACADEMIC YEAR 2015/2016

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Abstract

The purpose of this study is to determine the unit cost of educational services per student in class X IPA SMA Negeri 1 Cipari based on Activity Based Costing (ABC) model.

The object of this study was the unit cost of students in class X IPA SMA Negeri 1 Cipari in academic year 2015/2016. Data collection were conducted by interview and documentation. Subjects of this study consist of the finance staffs and head of school administration. The analytical method used in this research was descriptive with quantitative approach. The descriptive analysis with quantitative approach was carried out to expose the results of the calculation of unit cost nominal rate of students in class X IPA SMA Negeri 1 Cipari.

The result of this research showed that educational unit cost based on Activity Based Costing (ABC) model in SMA Negeri 1 Cipari for class X IPA 1 Rp 1,588,887.23 per month per student, for class X IPA 2 Rp 1,571,658.295 per month per student, and for class X IPA 3 Rp 1,588,887.23 per month per student.

Keywords: Unit Cost, Activity Based Costing (ABC), SMA Negeri 1 Cipari, Education.

Abstrak

Penelitian ini bertujuan untuk mengetahui besarnya biaya satuan (unit cost) pelayanan pendidikan per siswa di kelas X IPA SMA Negeri 1 Cipari berdasarkan model Activity Based Costing (ABC).

Objek penelitian ini adalah unit cost siswa di kelas X IPA SMA Negeri 1 Cipari tahun ajaran 2015/2016. Pengumpulan data dilakukan dengan teknik wawancara dan dokumentasi. Subjek penelitian ini adalah bendahara dan kepala TU. Metode analisis yang digunakan dalam penelitian ini adalah deskriptif dengan pendekatan kuantitatif. Analisis deskriptif dengan pendekatan kuantitatif dilakukan untuk memaparkan hasil perhitungan nominal angka unit cost siswa di kelas X IPA SMA Negeri 1 Cipari.

Hasil penelitian menunjukkan bahwa biaya satuan penyelenggaraan pendidikan berdasarkan model Activity Based Costing (ABC) di SMA Negeri 1 Cipari untuk kelas X IPA 1 sebesar Rp 1,588,887.23 per bulan per siswa, untuk kelas X IPA 2 sebesar Rp 1,571,658.295 per bulan per siswa, dan untuk kelas X IPA 3 sebesar Rp 1,588,887.23 per bulan per siswa.

Kata kunci: unit cost, Activity Based Costing (ABC), SMA Negeri 1 Cipari, Layanan Pendidikan

INTRODUCTION

An educational institution is a nonprofit institution that should be wellorganized and accurate in arranging information about cost. Determining educational cost should be suitable with feedbacks of education users whether the cost is too cheap or even too expensive. Therefore, it is very important for an educational institution, in this case, a school, to do a cost analysis.

In implementing education, educational cost is the most important part. Cost makes all activities run, including educational activities. Schools' budgets come from many resources, such as the government, donation. business and students' parents. In the budget management, the school simply records the budget they obtain and the cost without any clear details. The Government's Regulation Number 32 Year 2013 about National Education Standard explains that basically, educational cost includes investment, operation, and personal cost. Investment cost includes facilitation, people development, and working capital cost.

According to Indra Bastian (2007), the development of cost calculation in primary and middle schools is unable to answer the challenge of autonomy and globalization era. The cost calculation is very simple and cannot reveal principal information as a material or reference of decision making. Also, it is merely information of cost per unit for staff's and non-staffs' expenditure budgets. The calculation cannot reveal and show informative data.

In the progress of the times should be the calculation the cost of school education shifted to a more precise method, no longer using the traditional which only method records the expenditure and income of the cost of course. Activity Based Costing (ABC) is a development in the world of accounting costs. This model was developed in early 1990s in U.S.A and have successfully help the professional to manage the causes of cost, i.e. activity. Some companies in Indonesia already implemented Activity Based Costing System, but is still focused on the determination of cost product.

In managing the financial aspect of education, it is important to analyze and calculate the total educational cost and student unit cost. By analyzing those cost, the school is expected to be able to know the efficiency on the use of schools' funds and government spending on education investment. Cost Analysis Unit gave the basic formula to be used by schools in charging educational cost.

In a survey of budget management in SMA Negeri 1 Cipari academic year of 2015/2016, the school received funds from the government and parents. Total funds from the government were Rp 707,427,550 and the total funds from parents were Rp 1,428,860,000. The total funds from the government only covers 33.13% and it was not enough to covers all cost of education in school, so the school take the money from parents to covers it. The current cost of education is determined by the income of parents. Therefore, each student pay different amount of fees each month. Of 539 students. 10 students receive scholarships (free of tuition fee each month), 85 students charged Rp 85,000 each month, 197 students charged Rp 135,000 each month, and 247 charged Rp each month. The 175,000 existing calculation might give inaccurate information about the real unit cost of education. The researcher thought that an analysis of cost calculation need to be conducted. It could provide more detailed and accurate information based on the school's activities. The Activity Based Costing model (ABC) has never been used to calculate the education cost in SMA Negeri 1 Cipari. Therefore, the researcher was interested to do The Analysis of Unit Costing Based on Activity Based Costing (ABC) Model to determine unit cost of educational activities of each student in SMA Negeri 1 Cipari. It is hoped that by using ABC calculation, educational cost can be measured accurately by tracking not

only all students at the school, but also each student. ABC will give useful information for the school administrator to determine the standard of educational fee and reducing or even eliminating nonvalue added in the school's operation.

Based on the explanation above, the researcher was intended to analyze unit cost of each student in class X IPA SMA Negeri 1 Cipari. There are two majors in SMA Negeri 1 Cipari namely Natural Science (IPA) and Social Science (IPS). The students are placed in their major since their first grade. The researcher choose to conduct unit cost analysis in class X IPA, because IPA class has more activities such laboratory practices and the procurement of laboratory equipment and materials that require a lot of costs in their implementation. The laboratory of IPA are includes physic laboratory, chemistry laboratory and biology laboratory. The calculation of unit cost in class X will provide insight for cost management in higher grades.

If a school can calculate unit cost of each student accurately and provides clear, accountable and valid information of educational cost, it is hoped that all parties at the school, especially at the high school, the central government, regional government, citizens, and administrators of the school themselves can use the information as the reference in decision making and management policy, development and education participation effectively and efficiently. Thus, the researcher tried to do research entitled "The Analysis of Unit Costing Based on Activity-Based Costing (ABC) Model in Class X IPA SMA Negeri 1 Cipari Kabupaten Cilacap Academic Year of 2015/ 2016.

LITERATURE REVIEW

Nanang Fattah (2012: 112) defines "education cost as the amount of money earned and spent for various purposes education". Cost is one aspect of supporting and determinants in an educational process. Where almost all processes in education cost, ranging from core activities are teaching and learning activities to support activities such as study tours student activities, both need whose same cost.

Matin (2013: 160-161) says that a concept of unit cost points at a total of routine cost each student spend in one academic year. Unit cost is called educational cost for one student in one year at a certain level of education. Unit cost of each student is calculation that describes how much money effectively allocated to schools for students' needs during their education.

Jusuf Enocvh (1995: 239), unit cost is calculated by dividing total expense of a

school with a total number of active students in a certain year, whether in the whole educational system or only at a certain level and type of education or probably, only at a certain school.

Charles T. Hongren (2008: 170) mentions one of the best ways to improve cost calculation system is to implement a system of Activity Based Costing. Activity Based Costing repair cost calculation system with emphasis on activity as an object of base cost (fundamental).

Nanang Fattah (2004: 23) divides educational cost into two types: direct and indirect cost. Direct cost consists of those spent for teaching and learning activities including stationery purchase, learning instruments, transportation fare, teachers' salary, given by the government, parents, or the students themselves. Meanwhile, indirect cost is earning foregone in the form of opportunity cost sacrificed by students during learning processes.

Harsono (2007: 9-10) classifies sources of educational cost into four types:

- a. Educational cost from the government
- b. Educational cost from the government
- c. Educational cost from financial institutions and corporations
- d. Educational cost from educational institutions themselves

Indra Bastian (2007: 137) states that Activity Costing System (ACS) can be functioned to calculate educational cost. ACS is a calculating machine in economics approach where cost is the reflection of activity done by the parties, so the cost detail is the detail of needed activities and supporting equipment. The calculation used is division of direct cost and direct routine cost, then is divided by the total number of students to find out their direct/ real needs in general.

According to Nanang Fattah (2004: 26-28), there are two approaches to determine educational cost:

a. Macro Approach

Macro approach is calculation to all educational expense received from various resources, then is divided by the total number of students. The main determining factor in educational unit cost calculation is the policy in educational cost allocation of every country. Every country has different educational unit cost influenced by teachers' salary and teaching hours, seminar and training, students' grouping at school and in classes, methods and teaching materials, evaluation system and also supervision of education.

b. Micro Approach

Micro approach is cost calculation based on cost allocation per educational component used by students. It analyzes educational cost according to total cost and unit cost based on educational types and levels. Total cost is the collection of cost per educational input components of each school. Educational unit cost per student is the average cost spent to implement education at school per student per year. Unit cost per student is the function of the sum of cost and the number of students at school. Therefore, educational cost per student can be understood by dividing the total educational cost ever year with the total number of students in the certain year.

Before the writer discusses more about ABC system, there are some terms that need to be considered:

- a. An activity is something done in an organization. It is an action, movement or series of job. It is also defined as a collection of action carried out in an organization that aims to determine activity cost.
- A resource is an economical element given or used in an activity, for example, in education, teacher, salary, educational tools, etc.
- c. Cost object is the final form in which cost calculation is needed. In education, cost object is services.
- d. Cost element is the total of cost paid for resources consumed by activities in

cost pool, for example, exam, enrollment, practical cost, etc.

e. Cost driver is a factor that causes changes of activity cost. It is a tangible factor used to give cost to activities and from activities to others, products/ services, for example, the number of students, teachers, and activity frequency.

RESEARCH METHOD

This research used quantitative approach and descriptive-qualitative analysis method. Descriptive-qualitative analysis method was done to expose calculation of unit cost of each student. The calculation was finished based on Activity Based Costing (ABC) method. This research was carried out in SMA Negeri 1 Cipari located on MT. Haryono Street, Cigatel, Cipari, Cilacap.

The subjects of the research were the head of school administration and finance staff. The objects were unit cost of the students class X IPA of SMA N 1 Cipari.

This research using Activity Based Costing (ABC) model to determine unit cost students class X IPA 1 with 30 students, X IPA 2 with 31 students and class X IPA 3 with 30 students in SMA Negeri 1 Cipari Kabupaten Cilacap.

DISCUSSION AND CONCLUSION 4.2 Discussion

Table 1. Expense Activity Matrices

No	Activities	Total (Rp)
1	Teachers salary and incentives	611,031,672.02
2	Education staff salary and incentives	283,201,793
3	Leaning activities	73,632,730
4	Students activities	222,031,286
5	Stationary of study program	111,580,000
6	Supplies	184,313,623
7	Equipment	19,031,625
8	Transport	57,988,006
9	Exam papers	43,255,000
10	Maintenance	322,619,372
11	Investment and development of program	57,100,000
12	Other expenses	232,184,400
13	Development of curriculum	2,500,000
14	Assessors/competence exam	117,870,000
	Total	2,338,339,507.02

Overhead cost allocation used ABC model, after we knew about activity occurred in academic year 2015/216, then the next step would be identified as cost drivers related to activity. The principle of the selection of cost drivers with a basic convenience and availability of data based on exciting data that allocating overhead absorption appropriate activity. Allocation budget of exiting activity is done by calculating the proportion of cost driver against the exciting budget then look for the nominal value of the activity of each class.

1. Calculation of Direct Labor Cost

Calculation of direct labor cost comprises the whole of the known expenditures relating to direct cost in SMA Negeri 1 Cipari composed of teacher salaries and allowances, educational staff salaries and allowances.

Table 2. Direct Labor Cost Education inSMA Negeri 1 Cipari 2015/2016

No	Classes	Total Teacher's Salaries	Total Effective Hour in a year	Direct Labor
1	X IPA 1		1,360	449,287.994
2	X IPA 2	611,031,672.02	1,360	449,287.994
3	X IPA 3		1,360	449,287.994
Number of		14		
	Teacher			

2. Calculation of Direct Material Cost

Calculation of direct material cost also related to activity in SMA Negeri 1 Cipari, the entire expenditure related to direct material cost in each class which consists of stationary educational program, consumables of material, consumable of tools, procurement papers exam would be presented in the following table:

Table 3. Direct Material Cost Calculation in SMA Negeri 1 Cipari 2015/2016

No	Classes	Total (Rp)
1	X IPA 1	118,199,481.84
2	X IPA 2	121,781,284.32
3	X IPA 3	118,199,481.84
	Total	358,180,248

3. Overhead Cost Calculation

Calculation overhead cost in SMA Negeri 1 Cipari was calculated used the proportion of the cost drivers that would be described there:

Table 4. Overhead Cost Calculation

No	Activities	Overhead Cost			Total
		X IPA 1	X IPA 2	X IPA 3	Total
1	Educational Staff Salary and allowances	93,456,591.69	96,288,609.62	93,456,591.69	283,201,793
2	Teachers and education staff Development Expense	40,123,333.33	40,123,333.33	40,123,333.33	120,370,000
3	Learning Activities	24,298,800.9	25,035,128.2	24,298,800.9	73,632,730
4	Student Activities	73,270,324.38	75,490,637.24	73,270,324.38	222,031,286
5	Transport	19,329,335.33	19,329,335.33	19,329,335.33	57,988,006
6	Maintenance	106,464,392.76	109,690,586.48	106,464,392.76	322,619,372
7	Investment and development program	18,843,000	19,414,000	18,843,000	57,100,000
8	Others expense	76,620,852	78,942,696	76,620,852	232,184,400
	Total	452,406,630.39	464,314,326.2	452,406,630.39	1,369,127,587

Table 5. Cost per student class X IPA 1 SMA Negeri 1 Cipari

	Activities				
No		Direct Labor	Direct Material	Overhead Cost	Total (<u>Rp</u>)
1	Teachers salary and allowances	449,287.994			449,287.994
2	Educational Staff salary and allowances			94,400,597	94,400,597
3	Learning Activities			24,298,800.9	24,298,800.9
4	Student Activities			73,270,324.38	73,270,324.38
5	Stationary of study program		36,821,400		36,821,400
б	Supplies		60,823,495.59		60,823,495.59
7	Equipment		6,280,436.25		6,280,436.25
8	Exam papers		14,274,150		14,274,150
9	Transport			19,329,335.33	19,329,335.33
10	Maintenance			106,464,392.76	106,464,392.76
11	Other Expense			76,620,852	76,620,852
12	Teachers and Educational Staff Development Expenses			40,123,333.33	40,123,333.33
13	Investment and development			18,843,000	18,843,000
Total 4		449,287.994	118,199,481.84 453,350,635.7		571,999,405.534
Number of student		30	Unit Cost per student/year		19,066,646.85
			Unit Cost per stu	dent/month	1,588,887.23

From the table above, it can be explained that the cost of the class X IPA 1 for Direct labor (DL) was Rp 449,287.994 for Direct Material (DM) was Rp 118,199,481.84 and Overhead (OH) was Rp 453,350,635.7. The number of students of class X IPA 1 was 30 students with total expenditure was Rp 571,999,405.534, so the unit cost of class X IPA 1 per year was Rp 19,066,646.85and unit cost per month was Rp 1,588,887.23 per student.

Table 6. Cost per student class X IPA 2 SMA Negeri 1 Cipari

From the table above, it can be explained that the cost of the class X IPA 2 for Direct labor (DL) was Rp 449,287.994 for Direct Material (DM) was Rp 121,781,284.32 and Overhead (OH) was Rp 462,426,313.58. The number of students of class X IPA 2 was 31 students with total expenditure was Rp 584,656,885.894, so the unit cost of class X IPA 2 per year was Rp 18,859,899.54 and unit cost per month was Rp

1,571,658.295 per student.

Table 7. Cost per student class X IPA 3 SMA Negeri 1 Cipari

		Cost of indicators			
No	Activities	Direct Labor	Direct Material	Overhead Cost	Total (<u>Rp</u>)
1	Teachers salary and allowances	449,287.994			449,287.994
2	Educational Staff salary and allowances			94,400,597	94,400,597
3	Learning Activities			24,298,800.9	24,298,800.9
4	Student Activities			73,270,324.38	73,270,324.38
5	Stationary of study program		36,821,400		36,821,400
б	Supplies		60,823,495.59		60,823,495.59
7	Equipment		6,280,436.25		6,280,436.25
8	Exam papers		14,274,150		14,274,150
9	Transport			19,329,335.33	19,329,335.33
10	Maintenance			106,464,392.76	106,464,392.76
11	Other Expense			76,620,852	76,620,852
12	Teachers and Educational Staff Development Expense			40,123,333.33	40,123,333.33
13	Investment and development			18,843,000	18,843,000
Total 4		449,287.994	118,199,481.84	453,350,635.7	571,999,405.534
Number of student 30		Unit Cost per student/year		19,066,646.85	
			Unit Cost per stu	dent/month	1,588,887.23

From the table above, it can be explained that the cost of the class X IPA 3 for Direct labor (DL) was Rp 449,287.994 for Direct Material (DM) was Rp 118,199,481.84 and Overhead (OH) was Rp 453,350,635.7. The number of students of class X IPA 3 was 30 students with total expenditure was Rp 571,999,405.534, so the unit cost of class X IPA 3 per year was Rp 19,066,646.85 and unit cost per month was Rp 1,588,887.23 per student.

Conclusion

According to the result of the calculating unit cost based on Activity Based Costing model, there are two stages

to calculate the education unit cost based on Activity Based Costing, the first stage, there are fourth steps (1) identifying and classifying of activities (2) determining cost driver of activities (3) classifying of cost are homogenous (4) calculating of rate group overhead, the second stage, multiplying the overhead rates per group costs by the amount of the cost drivers that are consumed each product.

After identifying and classifying all activities, we can calculate cost driver for each activity cost. Teachers salary and allowances used total effective hour in a year as driver, the total effective hour in a year was 1,360 hour/class. Educational Staff salary and allowance used the number of student as driver. Learning Activities, student activities, stationary of study program, material of consumables, tools of consumables, other expense, power and services, investment and development, used the number of student as a driver. The teachers and educational staff development expense used the number of teacher and educational staff as driver.

Some activities such as educational staff salary and allowances, learning activities, student activities, stationary of study program, supplies, equipment, exam paper, maintenance, and investment and development are divided by number of student because every student were provided the same opportunity to enjoy the facilities or services.



Figure 1. Allocation of educational funds to all activities

Based on the allocation of school total operation cost, teachers salary and incentives were the largest component (28%) followed by maintenance (15%), education staff salary and incentives (13%), other expenses (11%), supplies (9%), teachers and staff education development expenses (6%), stationary and study program (5%), investment and development of program (3%), learning activities (3%), transport (3%), exam paper student activities (1%)(2%),and equipment (1%)were the lowest component in allocation of school total operation cost.

From the allocation of school operation cost, can explained that the learning activities included the lower component whereas learning activity was the main activity in education. For equalize cost to all component, can be done by save cost for things that are not too urgent such as repairing facilities. The saved costs can be used for balance cost of each activity.

From the calculation based on ABC model and the chosen stages, we can obtain the cost of class X IPA. The cost of the class X IPA 1 for Direct labor (DL) was Rp 449,287.994 for Direct Material (DM) was Rp 118,199,481.84 and Overhead (OH) was Rp 453,350,635.7. The number of students of class X IPA 1 was 30 students with total expenditure was Rp 571,999,405.534, so the unit cost of class X IPA 1 per year was Rp 19,066,646.85and unit cost per month was Rp 1,588,887.23 per student.

The cost of the class X IPA 2 for Direct labor (DL) was Rp 449,287.994 for Direct Material (DM)was Rp 121,781,284.32 and Overhead (OH) was Rp 462,426,313.58. The number of students of class X IPA 2 was 31 students with total expenditure was Rp 584,656,885.894, so the unit cost of class X IPA 2 per year was Rp 18,859,899.54 and unit cost per month was Rp 1,571,658.295 per student.

The cost of the class X IPA 3 for Direct labor (DL) was Rp 449,287.994 for Direct Material (DM) was Rp 118,199,481.84 and Overhead (OH) was Rp 453,350,635.7. The number of students of class X IPA 3 was 30 students with total expenditure was Rp 571,999,405.534, so the unit cost of class X IPA 3 per year was Rp 19,066,646.85 and unit cost per month was Rp 1,588,887.23 per student.

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