

THE ANALYSIS OF THE OPERATIONAL UNIT COST OF THE STUDY PROGRAMS IN YOGYAKARTA STATE UNIVERSITY

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Abstract: This research aims to ascertain the operational unit cost (OC) for running bachelor study programs in Yogyakarta State University (YSU). The research type was quantitative descriptive using the ABC (Activity Based Costing) approach. The population were 64 study programs in YSU and the samples were chosen purposively, two well-managed study programs in each faculty based on the assessment. The research instruments were in the form of the item line list. The data source were: (1) budget documents and (2) related personnels in the Rectorate, Institutions, Faculties, and Departments. The data were processed using the Microsoft Excel software. The limitation of the study was that the OC was not fully based on the standardized needs analysis but based on budget allocations and available funds. The research findings of the OC of each study program per student per year at the YSU are: Educational Technology Rp9,891,066.0; Educational Management Rp9,870,000.0; French Language Education Rp10,639,505.-; Art Education Rp11,896,636.0; Physics Education Rp13,012,912.0; Biology Education Rp13,754,933.0; Geography Education Rp10,445,972.0; Accounting Education Rp10,280,690.0; Mechanical Technology Education Rp14,681,329.0; and Education of Civil Engineering and Planning Rp14,241,037.0.

Keywords: operational unit cost per student per year, study program, Yogyakarta State University.

INTRODUCTION

The Indonesian government has issued the Government Regulation No. 48 of 2008 on Education Fundings and the Education Minister Regulation No. 69 of 2009 on the Operational Cost Standards for Non-personnel for the Elementary and Middle School, but the operational cost for higher education has not been regulated. In the year of 2011, Yogyakarta State University (YSU) had not analyzed the operational cost for running bachelor (*Sarjana*) study program as the government's reference in providing subsidies for higher institutions and as accountable information for students' parents and the public. On the other hand, Utomo Dananjaya (*Media Indonesia*, Indonesian News Paper, 15 May 2008) said

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that qualified education takes such a huge budget that it is inaccessible for students from the low income family if the government subsidies were not adequate.

The costs of education can be classified into direct and indirect costs (Hallak, 1969, p.28; Mun C. Tsang, 1997, p. 64; Murnane, 2001, p. 19). Direct costs include items such as instructional and laboratory materials, printed materials and supplies, fuel, moil and repairs, salaries of direct personnel, books and equipment purchased directly for use in the education process, long distance telephone calls, and travel of employees. Indirect costs are those costs that cannot be directly charged to a particular programme, but are attributed to services, which are necessary to operate the program such as salaries of personnel of management and administrative staff. A common approach to costing, called the ingredients method, identify all the relevant resources used in the programme, for example, personnel salaries and expenditures on instructional materials (Mun C. Tsang, 1997, p. 64; Levin, 1995, p. 382). Data for personnel and non-personnel costs can be collected from the accounting records of the analysis of educational costs and expenditure.

Faculty of Technology of YSU run vocational programme for preparing vocational school teachers. The vocational programme is costly compared to general education (Mun C. Tsang, 1997, p. 74) since the program require costly equipment and materials (Hoeckel, 2008, p. 17). The costs include salaries for personnel, teaching materials, management, and maintenance of equipment and building.

According to Nurhadi (2011, p. 17), education planning needs an estimation of the unit cost and funding by whom, how much, and how it works. As viewed from the economic stand point, education costs are sacrifices in economic resources measured in monetary unit to acquire items, services, or activities which are expected in giving profits or benefits either in the present or the future (Daljono, 2011, p. 13). Cost per learner actually attending the school is total expenditure divided by number of student attending classes, but be aware that do not all costs vary with the number of students, for instance, the teachers and their salaries (Murnane, 2001, p. 22; Hallak, 1969, p. 43; Ghozali, 2012, p. 101). Main activities of university in Indonesia are: lecturing, doing research, and giving community services, it is called "*tri darma*". Operational cost (OC) for running Yogyakarta State University will be classified into: for "*tri darma*" (lecturing, research, and community services), for personnel, and for management.

METHOD

This is a descriptive quantitative research used Activity Based Costing (ABC) approach. It was chosen since it is applicable to higher institution and it will present sufficient and reliable information (Lima, 2011, p. 57). The quantitative type research

was chosen in accordance with the research purpose, that is to obtain the amount of operational unit cost (OC) for running study program in YSU.

The population were 64 study programs in YSU, namely

- (a) 8 study programs (SPs) in Faculty of Education Science (FES),
- (b) 11 SPs in Faculty of Languages and Arts (FLA),
- (c) 9 SPs in Faculty of Mathematics and Science (FMS),
- (d) 15 SPs in Faculty of Social Science and Economics (FSSE),
- (e) 17 SPs in Faculty of Technology (FT), and
- (f) 4 SPs di Faculty of Sport Science (FSS).

The purposive sample were 12 well managed study programs, two study programs in every faculties.

The research instruments were list of activities, resources needed and its cost. The data source were

1. budget documents and
2. budget management personnels at the level of rectorate, faculties, and departments.

The study was conducted in September until October 2011.

Data were collected through review of document of Planning and Bud geting and *via* in-depth interviews with personnel involved in the planning and management of activities. The data was processed by using the Microsoft Excel software. The research limitations was only OC of laboratory and workshop activities was analyzed based on the standard needs, whilethe other OC were analyzed based on budgets and available fund.

RESEARCH FINDINGSAND DISCUSSION

Activities in YSU areclassified into three:

1. three main tasks (*Tri Dharma*) of university(education and teachings, research, and community services),
2. management and
3. facilities procurement.

Teachings/lecturings are distinguished as theory, practicums, and field study. In the budget plan document, practicums are managed by departments, while theories, field studies, research, community services, and management are managed in the scope of faculty and university. For that reason, the operational cost (OC) was analyzed into three levels, namely departments, faculties, and university level.

The paper distinguished OC based on the use of fund:

1. for running of practicum courses,
2. for salary and insentif of personnel, and
3. for non- personnel.

Practicum courses were referred to the Curriculum of YSU the Year 2009, that was applied in the year the study was conducted.

A. Operational Cost (OC) of Practicums Courses

Data of the OC of practicum were obtained from the costs of consumables materials and tools (tools that have live span less than a year). The use of those materials were differentiated into two categories, namely for:

1. a specific course and
2. cross-courses.

The YSU Curriculum contained 529 practicum courses. Faculty of Technology (FT) offered the most of it (33%), namely 291 courses which were distributed among 17 study programs or 25 to 28 courses in each. Faculty of Mathematics and Science (FMS) has 9 study programs, each of which administers 15 to 18 practicum courses. In Faculty of Languages and Arts (FLA), there are 6 art and craft study programs, each of which administers 16 to 18 practicum courses. In Faculty of Sport Science (FSS), there are 4 study programs, each of which administers 16 to 18 practicum courses. Faculty of Education Science (FES) and Faculty of Social and Economy Science (FSES) administers 6 to 7 practicum courses.

This article presents the analysis of OC of one course, as a sample, in Mechanical Technology Education (MTE) was recorded as a study program needing the most costly practicum courses in FT that recorded of having the most practicum courses. MTE administers 26 practicum courses and three field studies (see Table 1) which were carried out throughout 8 semesters (4 years) for bachelor's degree program of MTE Study Program and 6 semesters (3 years) for its Diploma III of Mechanical Technology Study Program.

The OC for practicum courses are cost for procurement of:

1. consumables materials,
2. consumable tools,
3. maintenance and calibration facilities, and
4. safety equipment.

As an example, it was presented data of OC of practicum courses in the Fabrication workshop which were reported as needing the greatest OC for consumables materials and tool compare to other 8 laboratories/workshops in the

Table 1
List of Practicum Courses in MTE Department and Its Semester Credit Units (scu).

No. Practicum Courses	Scu
A. <i>Compulsory (C)</i>	36
1. Physics	1
2. Mechanical Engineering Drawing I	2
3. Basic Technical Materials	1
4. Bench Work	3
5. Material Forming	3
6. Religion Education	1
7. Mechanical Engineering Drawing II	2
8. Mechanical Technology I	1
9. Information Technology and Communications	2
10. Advanced Technical Materials	1
11. Machining I	3
12. Oxy Acetilin Welding	3
13. CAD	2
14. Industrial Metrology	1
15. Advanced Machinery Processes	3
16. Shielded Metal Arc Welding (SMAW)	3
17. Pneumatic Hydraulics	1
18. Basic CNC	2
19. Energy Conversion	1
<i>Total</i>	36
B. <i>Electives Concentration</i>	13
1. <i>Concentration of Design</i>	
20. Machine Repair and Maintenance	1
21. Machine Control System	2
22. Mechanical Engineering *)	2
23. Machine Element Design *)	2
24. Moving Tools *)	2
25. Piping System Design *)	2
26. Machine Construction Design *)	22
2. <i>Concentration of Machining</i>	
Machine Repair and Maintenance	1
Machine Control System	2
Jigs and Fixtures Design **)	1
Machining II **)	3
Advanced CNC **)	3
CAD/CAM **)	3
3. <i>Concentration of Fabrication</i>	
Machine Repair and Maintenance	1
Machine Control System	2
Fabrication Construction Design ***)	1
Welding Testing ***)	1

Cont. table 1

No. Practicum Courses	Scu
MIG and TIG Welding ***)	3
Coating Techniques ***)	2
Fabrication Construction Practices ***)	3
<hr/>	
C. <i>Field Study (F).</i>	
<i>Status: Compulsory.</i>	9
Community Services	3
Teaching Practice	3
Industrial Internship	3
<hr/>	
Total scu of Practicums (Compulsory + Elective)	49
Total study load	148

MTE Department. The Fabrication workshop runs some practicum courses of Welding and Fabrication, namely:

- (A) compulsory courses (Table 1 item No. 5; 12; and 16) and
- (B) elective courses of Fabrication concentration (Table 1 item No. 20 to 26).

Consumable materials and tools for practicum courses were grouped in two:

- (1) for specific courses, and
- (2) for cross-courses.

The consumables for specific courses were prepared for the needs of 1 group (20 students) since the practicum class size is 20 students per group. On the other hand, consumables for the cross-courses were arranged based on the annual needs of 120 students, consist of 80 students of Bachelor's Degree of MTE study program and 40 students of Diploma III of the Mechanical Technology study program.

As an illustration of the OC analysis for practical courses, the paper presented consumable materials and tools for one course, namely practicum of Shielded Metal Arc Welding (SMAW) in Flat, Horizontal (HZ), Vertical Up (VU), and Over Head (OH) welding position (see Table 2). The cost of consumable materials and tools for other specific courses in the MTE study program (see Table 3), whereas, the price data were the market price back in 2011, when the research conducted.

The OC for consumable materials and tools for the concentration of Fabrication and Welding Practicum was Rp57,957,377.0 for the need of 20 students (see Table 3) or Rp2,897,868.0 per student per year. The OC for consumable materials and tools for cross courses in Fabrication Workshop for 120 students (see Table 4) was Rp88,979,500.0 or Rp741,496.0 per student. Therefore, the total of OC for all practicum courses in the Fabrication Workshop is equal to OC consumable materials and tools for some specific courses plus for cross-courses per student per year = Rp2,897,868.0 + Rp741,496.0 = Rp3,639,364.0 per student per year.

Table 2
The Cost of Consumable Materials and Tools for SMAWin Flat, HZ, VU, and OH Welding Position, for 20 of students.

No.	Title of Activities/ Exercises.	Materials	Material Size per Piece	Total: piece (s)	Size Available	Unit	Total needs (sheet/ box x liter / can)	Price per Unit (Rp)	Total rice (Rp)
1	2	3	4	5	6	7	8	9	
1.	Weld Bead, Flat	S	7 x 50 x 100 mm	80	6	m	1. 33	125,000	166,667
2.	Wide WB, Flat	t	7 x 50 x 100 mm	80	6	m	1. 33	125,000	166,667
3.	V. Joint, Flat	r	8 x 100 x 25 mm	160	6	m	0. 67	485,000	323,333
4.	Fillet Joint, Flat Position	i p	6 x 25 x 100 mm 7 x 50 x 100 mm	80 80	6 6	m m	1. 33 1. 33	65,000 125,000	86,667 166,667
5.	Beading, Flat	e	7 x 50 x 100 mm	80	6	m	1. 33	125,000	166,667
6.	V Joint, HZ	s	8 x 100 x 25 mm	160	6	m	0. 67	485,000	323,333
7.	Fillet Joint, HZ	o	6 x 25 x 100 mm	80	6	m	1. 33	65,000	86,667
8.	Weld Bead, VU	f	7 x 50 x 100 mm	80	6	m	1. 33	125,000	166,667
9.	Joining WB, VU	s	7 x 50 x 100 mm	80	6	m	1. 33	125,000	166,667
10.	V Joint, VU	t	8 x 100 x 25 mm	160	6	m	0. 67	485,000	323,333
11.	Fillet, VU	e	6 x 25 x 100 mm	80	6	m	1. 33	65,000	86,667
12.	Weld Bead, OH	e	7 x 50 x 100 mm	80	6	m	1. 33	125,000	166,667
13.	Joining WB, OH	I	7 x 50 x 100 mm	80	6	m	1. 33	125,000	166,667
14.	V Joint, OH		8 x 100 x 25 mm	160	6	m	0. 67	480,000	320,000
15.	Fillet Joints, OH		6 x 25 x 100 mm	80	6	m	1. 33	65,000	86,667
	electrode			3000 box	6	m	1. 33	125,000	166,667
							20	228,000	4,560,000
	Grinding stone	Wide			piece		1	300,000	300,000
	Grinding stone	Small			piece		50	13,000	650,000
	Chainsaw bar	Standard			piece		2	90,000	180,000
							T total		9,160,000

Table 3
The Cost of Consumable Materials and Tools for Some Specific Practicum Courses in MTE Study Program.

<i>No.</i>	<i>Course Title</i>	<i>Cost(Rp)</i>
1.	Shielded Metal Arc Welding (SMAW)	9,160,000
2.	Material Forming.	3,964,022
3.	OA Welding on DH and HZ Welding Positions.	7,086,895
4.	Metal Inert Gas Weld, Tungstan Inert Gas Weldin Flat, HZ, dan VU Welding Positions.	9,076,467
5.	Weld Testing.	1,683,333
6.	Construction Works,	14,650,060
7.	Coating	3,474,000
8.	Final Projects	11,056,000
Total OC for 20 students		57,957,377
OC per student per year		2,897,868

Table 4
The cost of Consumable Materials and Toolsfor Cross-Courses for 120 Students' Needs of MTE Study Program.

<i>No.</i>	<i>Course Title</i>	<i>Cost(Rp)</i>
1.	Supporting Consumable Tools and Materials for the Cross-Courses	64,704,500
2.	Work Safety Tools and Materials, Maintenance, Cleaning, and Stationery	21,981,000
Total OC for 120 students		88,979,500
OC per student per year		741,496

As presented in Table 2 to Table 4, as it is analogous to the OC analysis of consumable materials and tools in the Fabrication Workshop, it was obtained from the OC for all practicum courses in semester I-VIII (for 4 years) in 9 laboratories and workshops in the MTE Department (see Table 5), was Rp15,515,775.0 for four years or Rp3,878,943.0 per studentper year, by assuming that there is no student repeating practicum courses.

As it is analogous with the OC for practicum courses in the MTE study program (Table 1 toTable 5), the OC for practicum courses for 10 study programs per student per year were: Educational Technology Rp344,309.0; Educational Management Rp323,243.0; French Language Education Rp943,327.0; Art Education Rp2,200,458.0; Physics Education Rp1,102,502.0; Biology Education Rp1,844,523.0; Geography Education Rp1,016,231.0; Accounting Education Rp850,949.0; Mechanical Technoly Education Rp3,639,364.0; and Civil Engineering and Planning Education Rp3,199,072.0,(see Table 6).

Table 5
List of Lab/Workshop in the MTE Study Program and the OC for Consumable Materials and Tools per Student per Year.

<i>No. Names of Lab and Workshop in the MTE Study Program</i>	<i>OC (Rp)/ Stu/ Year</i>
1. Fabrication Workshop	3,639,364
2. Machining Workshop	2,992,815
3. Drafting and Design Lab	1,782,940
4. Lab of CNC and Cad/Cam	2,862,750
5. Pneumatic Hydraulic Lab	1,094,625
6. Maintenance Workshop	1,128,875
7. Material Testing Lab	1,563,648
8. Industrial Metrology Lab	554,600
9. Physics and Mechanical Lab	258,401
Total OC of Praktikum for Sem I-VIII (for 4 yrs) per student	15,515,775
OC for Praktikum in MTE Study Program per student per year	3,878,943. 5

Tabel 6
The Cost of Consumable Materials and Tools for Practicum Courses per Student per year for 12 Study Programs.

<i>No.</i>	<i>Faculty and Study Program Names</i>	<i>Practicum OC (Rp)</i>
1	2	4
A.	FES	
1.	Education Technology	344,309
2.	Education Management	323,243
B.	FLA	
1.	French Education	943,327
2.	Art Education	2,200,458
C.	FMS	
1.	Physics Education	1,102,502
2.	Biology Education	1,844,523
D.	FSSE	
1.	Geography Education	1,016,231
2.	Accounting Education	850,949
E.	FT	
1.	Mechanical Engineering Education.	3,639,364
2.	Civil Engineering and Planning Education	3,199,072
F.	FSS	
1.	Sport Educ. , Health, and Recreation	NA
2.	Sport Training Education	NA

Note: Data from FSS were not available (NA).

B. OPERATIONAL COST (OC) FOR PERSONNEL

Operational costs for personnel were costs for salary and incentive of personnel who do activities which can be grouped into two: (1) teaching and (2) non-teaching activities. Teaching activities were done by lecturers and supported by laboratorans / technicians. Non-teaching activities were done by lecturers who had additional duties as a manager and by supporting staffs. Salary and allowance were for lecturers who have 12 scu teaching loads and for laboratorans/technicians for their services during the working hours. Incentives were for lecturers who have teaching loads of more than 12 scu and for laboratorans/technicians for their services out of the working hours.

Lecturers were entitled to receive allowances and incentive, for those who had managerial duty, ranging from the head of the laboratory/workshop up to the rector. The staff were entitled to receive salary for their main duties and managerial position allowances for those who had and also entitled to receive incentive for duties out of working hours. There were quite many lecturers who also managers, therefore the OC were quite large, but the data of it were difficult to be separated from the OC as a lecturer. For that reason, the OC personnel for teaching and non-teaching activities were combined.

The for teaching was not analyzed per faculty since there were quite many lecturers teaching across faculties, instead average OC for inter faculties, combined with OC personnel of university level was analyzed based on the number of students. The OC for personnel in the university level in a year was Rp9,224,985,204.0 for serving 32,296 YSU students or as much as Rp595,274.0 per student per year. The amount of OC for personnel for the whole faculties (without FSS for their data were not available/NA) was Rp102,095,304,278.0 for serving 26,595 students or Rp3,838,891.0 per student per year. So, the total OC for personnel was Rp4,434,165.0 per student per year, see Table 7.

Table 7
Personnel OC for Teaching and Management Activities per Student per year

No.	Name of Unit	Number of Student	Personnel OC per year
1	2	3	4
A.	University	32,296	19,224,985,204
A.1.	Rectorate per Student		595,274
B.	Total for All Faculty	26,595	102,095,304,278
B.1.	Faculty Average per Student		3,838,891
C	Total (A.1. + B.1.) per Student		4,434,165

C. Non-personnel Operational Cost (OC)

Non-personnel OC covered procurement of consumable materials and tools for non-practicum, facility maintenance, and for management activities in faculty and university level. The management activities are coordination, supervision, evaluation, and development of project guide, students assistance activities, research, and community service.

The non-personnel OC of university level was Rp74,649,085,400.0. It was become OC debit of 7 unit (6 faculties and 1 graduate school) or Rp10,664,155,057.0 per faculty. The non-personnel OC of faculty level were Rp13,886,514,000.0 for FES; Rp21,639,339,920.0 for FLA; Rp19,741,734,000.0 for FMS; Rp19,274,329,000.0 for FSSE; and Rp26,299,879,920.0 for FT. The non-personnel OC per student per year were the sum of faculty and university level debit faculty divided by the number of students in each faculty (see Table 8 column 9), namely: Rp5,112,592.0 for FES; Rp5,262,013.0 for FLA; Rp7,476,245.0 for FMS; Rp4,995,576.0 for FSSE; and Rp6,607,800.0 for FT.

Table 8
The Non-personnel OC per Faculty and per Student per Year

Name/ Unit		Total			Non-personnel OC per year			
No. Name/ Unit Code	Dept.	Study Prog.	Student	Faculty OC toward University Debit	OC per Faculty	Total OC of Faculty	per Student	
1	2	3	4	5	6	7	8 = (6 + 7)	9 = (8 : 5)
A.	Univ.				10,664,155,057			
B.	Faculty							
1.	FES	8	8	4,802		13,886,514,000	24,550,669,057	5,112,592
2.	FLA	7	11	6,139		21,639,339,920	32,303,494,977	5,262,013
3.	FMS	4	9	4,067		19,741,734,000	30,405,889,057	7,476,245
4.	FSSE	6	15	5,993		19,274,329,000	29,938,484,057	4,995,576
5.	FT	6	17	5,594		26,299,879,920	36,964,034,977	6,607,800

The total OC for study program implementation and management per student per year was the total of three activity groups, namely:

1. Practicum OC,
2. Personnel OC, and
3. Non-personnel OC (taken from Table 6; 7, and 8), summarized in Table 9.

The operational cost for each study program in YSU, see Table 9 column 6, namely: Education Technology Rp9,891,066.0; Education Management Rp9,870,000.0; French Language Education Rp10,639,505.0; Art Education

Rp11,896,636.0; Physics Education Rp13,012,912.0; Biology Education Rp13,754,933.0; Geography Education Rp10,445,972.0; Accounting Education Rp10,280,690.0; Mechanical Technology Education Rp14,681,329.0; and Civil Engineering and Planning Education Rp14,241,037.0.

Table 9
Total Amount of Operational Unit Cost per Student per Year

Name of Faculty		Operational Unit Cost per Student per Year			
		Practicum	Personnel	Non-personnel	Total OC
No.	Study Program	3	4	5	6 = 3 + 4 + 5
A FES					
1	Education Technology	344,309	4,434,165	5,112,592	9,891,066
2	Education Management	323,243	4,434,165	5,112,592	9,870,000
B FLA					
1	French Education	943,327	4,434,165	5,262,013	10,639,505
2	Art and Craft Education	2,200,458	4,434,165	5,262,013	11,896,636
C FMS					
1	Physics Education	1,102,502	4,434,165	7,476,245	13,012,912
2	Bilology Education	1,844,523	4,434,165	7,476,245	13,754,933
D FSSE					
1	Geography Education	1,016,231	4,434,165	4,995,576	10,445,972
2	Accountig Education	850,949	4,434,165	4,995,576	10,280,690
E FES					
1	Mechanical Engineering Education	3,639,364	4,434,165	6,607,800	14,681,329
2	Civil Engineering and Planning Education	3,199,072	4,434,165	6,607,800	14,241,037

DISCUSSION

Table 9 shown that the lowest of Operational Cost (OC) per student per year was Rp9,870,000.0 for Education Management Study Program and the highest one was Rp14,681,329.0 for Mechanical Technology Education Study Program. The cost included the research and community service cost. When it was analyzed separately, the OC for research and community service activities based on the allocated per year were Rp4,732,500,000.0 and Rp3,897,611,000.0. If the amount was viewed as debit for 32.296 students, then debit per student per year were Rp146,535.0 for research and Rp120,684.0 for community service, or about 2.2 % from the total average of OC per student per year. If viewed from the number of the existing lecturers, *i.e.* 1223 lecturers, then, a lecturer will receive an average of Rp3,869,583.0 for research and Rp3,186,926.0 for community service by assuming that all lecturers conduct research and community service. It was a small number.

The research shown that the activity based costing (ABC) can only be applied well for analysing cost of consumable materials and tools for running practicum courses. The OC for practicum courses is valid since based on the detailed need of practicum per activity and can be trace back. It can be used as a reference in budget planning, though there was a big difference (more than 10 times) between the highest and lowest of OC of study program, namely: Rp3,639,364.0 for the Mechanical Technology Education Study Program in FT and Rp323,243.0 for Management of Education Study Program in FES. But, the cost of electric power for running practicum courses is hard to be traced since the usage is merged with other purposes, such as for AC, computer usage, LCDs in theory lectures, lighting, and other appliances since the power meter was only one for various power use purposes.

The personnel OC for practicums courses should be analyzed separately from the theoretical courses since the students-lecturers ratio were different, namely 1:40 for the theory and 1:20 for the lab class or 1:10 for the practicum in the workshop, so the personnel cost per student for practicums must be higher than the theory ones. But, the data of personnel cost for the theory and practicum was merged and difficult to be separated, even these merged with the personnel cost of management and other incidental activities.

On the other hand, different patterns of analysis could result in the different amount of personnel OC. The personnel OC that was reported Rp4,995,576.0 per student per year is the same for all study programs (see Table 9 column 4) since the analysis was ignored the difference of number of students and study programs inter departments and faculties. If the difference were put into account, see Table 10, the personnel OC of Study Programs of Educational Technology and Educational Management in FES were: Rp7,270,472.0 and Rp6,479,829.0, on the other hand, the personnel OC of Study Programs of Geography Education and Accounting Education in FSSE were: Rp2,308,229.0 and Rp2,214,597.0. It meant, the amount of personnel OC of the Education Technology in FES is three times than the Geography Education in FSSE although the two study programs have relatively similar type of curriculum.

The non-personnel OC will come up with different number if the analysis put into account the number of study program in each department. For instance, the non-personnel OC of two study programs that have relatively similar number of students and are in the same faculty, *i.e.* the FSSE, see Table 11. The amount of non-personnel OC for Geography Education Study Program in Geography Department which only has one study program was Rp9.327.881.0 per student per year, while in the Accounting Education Study Program in the Accounting Education Department which has three study programs the non-personnel OC was Rp2.968.017.0. The difference on the non-personnel OC between the two study programs were big, three times. Based on the OC analysis by considering the

Table 10
Personnel OC per Student per Year by Considering the Number of Student and Study Programs (SP) in the Faculty.

No.	Name of Faculty or Department	Number of Unit	Number of Student of SP	Personnel OC (POC) per Year		
				University and per Faculty	per Study Program	Per Student
1	2	3	4	5	6= (7 : 2)	10= (9 : 5)
A	POC University	7		19,224,985,204		
B	POC Univ. for Faculty (5.a. : 3.a.)			2,746,426,458		
C	POC of FES	8		19,181,315,791		
D	Total of POC FES(5.b. + 5.c.)			21,927,742,249	2,740,967,781	
E	Education Technology	1	377			7,270,472
F	Education Management	1	423			6,479,829
H	POC of FSSE			16,088,720,946		
I	Total of POC FSSE(5.b. + 5.h.)	1	5	18,835,147,404	1,255,676,494	
J	Geography Education	1	544			2,308,229
K	Accounting Education	3	567			2,214,597

number of study programs, it was found out that if, in indirect operational cost in the form of personnel and management OC, the lower the number of study programs in a department and faculty or it will more costly.

It can be concluded that management personnel of study program or department or faculty that has small student body need more subsidies if they receive equal amount of salary compare to a bigger one or the study program should be merged. Minimal numbers of students body and study program or the maximal numbers of personnel should be considered for efficiency of indirect operational cost. The highest percentage of Personnel OC was for the Study Program of Educational Management, namely: 44.9%, see Table 12.

The highest percentage of Operational Unit Cost (OC) for running practicum courses was 24% for Mechanical Technology Education Study Program and the highest for Non-personnel was 57.5% for Physics Education Study Program. Based on the percentage, the amount of operational cost among the activities was also an input in allocating funds and priority scale in budget setting. For example, the practicum courses OC as the direct cost for achieving competences is the first priority.

Table 11
Non-Personnel OC per Study Program (SP) per Year

Name of Faculty and Department	Number of SPs	Number of Student	Non-personnel OC per year per			
			Dept toward Faculty OC	Department	Total Dept OC	Study Program
1	2	3	4	5	6 = (4 + 5)	7 = (6 : 2)
FSSE						
Geography Education	1	544	4,989,747,343	84,620,000	5,074,367,343	5,074,367,343
Accounting Education	3	567	4,989,747,343	58,850,000	5,048,597,343	1,682,865,781

Table 12
Percentage of OC per Student per Year in Every Study Program

No.	Name of Faculty and Study Program	Percentage of Operational Cost			
		Practicum	Personnel	Non-personnel	Total
A.	Faculty of Education Science				
1.	Educational Technology	8.9%	41.7%	49.5%	100.0%
2.	Education Management	3.3%	44.9%	51.8%	100.0%
B.	Faculty of Languages and Arts				
1.	French Education	8.9%	41.7%	49.5%	100.0%
2.	Art Education	18.5%	37.3%	44.2%	100.0%
C.	Faculty of Mathematics and Science				
1.	Physics Education	8.5%	34.1%	57.5%	100.0%
2.	Biology Education	13.4%	32.2%	54.4%	100.0%
D.	Faculty of Social Science and Economics				
1.	Geography Education	9.7%	42.4%	47.8%	100.0%
2.	Accounting Education	8.3%	43.1%	48.6%	100.0%
E.	Faculty of Technology				
1.	Mechanical Engineering Education	24.8%	30.2%	45.0%	100.0%
2.	Civil Engineering and Planning Education	22.5%	31.1%	46.4%	100.0%
	Average	12.7%	37.9%	49.5%	100.0%

CONCLUSION

1. The operational cost (OC) for running study program in YSU were as follow:
 - (a) Educational Technology Rp9,891,066.0;
 - (b) Educational Management Rp9,870,000.0;
 - (c) French Education Rp10,639,505.0;

- (d) Art Education Rp11,896,636.0;
 - (e) Physics Education Rp13,012,912.0;
 - (f) Biology Education Rp13,754,933.0;
 - (g) Geography Education Rp10,445,972.0;
 - (h) Accounting Education Rp10,280,690.0;
 - (i) Mechanical Technology Education Rp14,681,329.0; and
 - (j) Civil Engineering and Planning Education Rp14,241,037.0.
2. The difference of personnel OC among study programs became too big if the number of student and study program in the departments and faculties were put into account.

SUGGESTIONS

1. The operational cost for running practicum courses can be used as a reference in deciding the proportions of budget allocation for running study program.
2. An accurate research in costing of activities other than running practicum courses is required.

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