

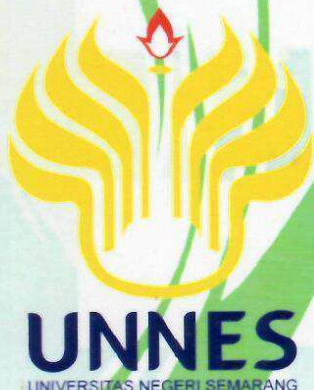
ISSN : 2355-3456

PROCEEDING

The 4th International Conference on
Education, Concept, and Application
of Green Technology 2015



Grand Candi Hotel
Semarang, Central Java, Indonesia
September 10th, 2015



ENGINEERING FACULTY
SEMARANG STATE UNIVERSITY

EIC

Engineering International Committee

ARCHIEVE DETAIL

The 4th Conference

Green technology has been an inspiration for Research and Development in the World. It's the application of one or more of environmental science, green chemistry, environmental monitoring and electronic devices to monitor, model and conserve the natural environment and resources, and to curb the negative impacts of human involvement. The term is also used to describe sustainable energy generation technologies such as photovoltaics, wind turbines, bioreactors, renewable energy, thermo-fluids etc. Sustainable development is the core of environmental technologies. Based on the recent issue, Engineering International Committee which includes eight countries (Indonesia, Malaysia, Singapore, Taiwan, Australia, German, USA and Japan) conducts the international conference on education, concept, and application of green technology 2015. Delegates from university, industry, governmental or non-governmental organizations and capital providers may present their views on green technology.

Conference Day and Venue

Day : September 10th, 2015

Venue : Grand Candi Hotel Semarang

Invited Keynote Speakers

Professor Dr. Zainal Alimudin bin Zainal Alauddin

School of Mechanical Engineering, Universiti Sains Malaysia

Prof. Tatsuo Sawada

Department of Mechanical Engineering, Keio University

Prof. Kenji Takahashi, Ph.D

Graduate School of Natural Science and Technology, Kanazawa University



Download Proceedings

Other Archieve

No	Archieve	Detail
1	The 1 st Conference	Detail
2	The 2 nd Conference	Detail
3	The 3 rd Conference	Detail

COMMITTEE

Technical Committee

Dr. Samsudin Anis, S.T., M.T.
Dr. Megawati, S.T., M.T.
Dr. Subiyanto, S.T., M.T.
Gianawan Adi Kristianto, S.Pd., M.Ed.
Sita Nurmasitah, S.S., M.Hum.
I. Dewi Artanti Putri, S.T., M.T.
Nur Rini Widyastuti, S.T., M.Sc.
Dhoni Kusumawardhani, S.T., M.T., M.Sc.
Arief Arfriandi, S.T., M.Eng.
Alfa Faridh Suni, S.T., M.T.
Rizqi Fitri Naryanto, S.T., M.Eng.
Lulut Indrianingrum, S.T., M.T.
Aryo Baskoro Utomo, S.T., M.T.
R. Rahmat Doni Widodo, S.T., M.T.
Bayu Triwibowo, S.T., M.T.
Dhoni Hartanti, S.T., M.T., M.Sc.
Pudji Astuti, S.Pd., M.Pd.

Scientific Committee

Dr. Guido Link
Prof. Azah Mohamed
Prof. Jyh-Cheng Yu
Prof. Ming-Jer Lee
Prof. Awang Bono
Prof. Murk Bottema
G. James Pinchak, Ph.D
Prof. Arief Budiman
Dr. Johannes Widodo
Ir. Istommy Y. Setiadi, M.Si.
Dr. Muhammad Harlanu, M.Pd.
Drs. Djoko Adi Widodo, M.T.
Ir. Siti Fathonah, M.Kes.
Drs. Suprpto, M.Pd.
Dr. Ratna Dewi Kusumaningtyas, S.T., M.T.
Sonika Maulana, S.Pd., M.Eng.
Dra. Sicilia Sawitri, M.Pd.
Wahyudi, S.Pd, M.Eng.

The Manajement of Academic Quality Performance of Technical Faculty Semarang State University Indonesia

Hadromi

Lecturer of Technical Faculty, Technical Faculty, Semarang State University, Indonesia

Abstract—This research has a purpose to evaluate and describe the management of academic quality performance of Technical Faculty (FT), Semarang State University (UNNES). The Performance is calculated by comparing the results of academic quality performance which is determined by standards of the National Accreditation Board of Higher Education (BAN PT).

The results showed the management of academic quality performance in the Technical Faculty, UNNES was started from how to determine a standard, evaluate of a standard implemention, evaluate the implementation of standards and attempt to improve a standart continually. the Performance of academic quality in college are required to qualify the standards both internally and externally. The Continuous performance evaluation is conducted for the implementation of the plan and determine the steps and strategies to achieve the vision, mission, and goals of the institution.

Keywords—*performance management, quality academic*

I. INTRODUCTION

The management of the Academic quality performance of Technical Faculty UNNES is measured as an attempt to determine the extent to which the quality academic of education. The Measurements is conducted on financial and non-financial aspect. The Financial aspect is obtained from the budget composition to control costs. While the non-financial aspect is key factor that can support the financial aspect. Both of aspects are analyzed using several models of performance measurement, one of them is balanced scorecard method. Aplication of this method is supported by Kaplan and David P. Norton (1996: 22), reveals that balanced scorecard can interpret the strategy and mission of the organization into a comprehensive performance measurement tool which is a framework in implementing the strategy.

The Balanced Scorecard application in this paper to measure the management of academic quality performance of Technical Faculty UNNES. As it is related to the management of quality performance then discussed for three perspectives namely : customer, internal business process, growth and learning , and research. The concept of Balanced Scorecard is a translation of strategies and objectives which wants to be achieved by Technical Faculty of UNNES in the long term, then measured and monitored countinously . This

concept will help in measuring the performance more comprehensive and accurate.

Sharma, Ashu (2009) in her research "Implementing the Balanced Scorecard for Performance Measurement", stated that the balanced scorecard is a planning strategic and management system that is used widely in the business organization and industry, government and nonprofit organizations in the world to align business activities with the vision and organization strategy, to improve internal and external communications, and to monitor the organization performance toward strategic goal.

The research that is conducted by Kristiana, Sri Rahayu (2009) has a tittle "Balanced Scorecard As One Method of a Performance Measurement on Banking Companies. This research explains that performance measurement is one of important factors for an organization, because without having a comprehensive performance measurement so an organization will not be able to control the organization well. The performance measurement only from a financial perspective is proved that the result is less optimal and only refers to the company's annual budgets. Therefore it is needed a performance measurement method that can give a succes picture of the company performance totality.

A. The Performance Management Concept

The Scope of the performance management program consists of several elements: (1) technology (equipment, methods of work), (b) quality of inputs (including material, (c) Quality of the physical scope (safety, occupational health), (d) Climate and organization culture (including supervision and leadership, (e) The compensation and rewards system. Further the performance management program has purposes/benefits such as : (a) increase the employee performance, (b) increasing the achievement of employees , (c) motivate in personal development, (d) help the company to be able to arrange the efficient of development and training employee program (e) provide the instrument or facility to compare the employees performance, (f) give an opportunity for employees to tell their feelings about the job (Eddy Soeryanto Soegoto (2011: 134).

The Common causes that often lead to failure and should be avoided in implementing the performance management were mentioned by Oliver (1985) that quoted by Dessler (2005) as follows: (a) there is no

standard (b) the relevant standards and subjective, (c) unrealistic standard, (d) the size of the achievement is not appropriate, (e) assessor error, (f) providing the bad feedback, (g) the negative communications, (h) failure to use the assessment data.

B. The Quality Assurance of College

The process of quality assurance in a college is an independent activity of that college, so that the process is designed, operated, and controlled by that college without interference from the Government (General Directorate of Higher Education, Ministry of Education, 2003). The quality assurance in the college can also be done by the National Accreditation Board of Higher Education (BAN-PT) or other institutions either within or outside the country. The college is in the shade of the Higher Education must conduct the studies Program Evaluation Based on Self Evaluation (EPSBED) in the General Directorate of the Higher Education. The three kinds of activities are guideline on the achievement of the continuous quality improvement which can support and complete each other.

II. THE METHODOLOGY OF RESEARCH

This research is descriptive, using ex post facto survey method with considerates of the problem that is revealed more descriptive. The way to obtain the data in this research namely documentation, interview, and observation. The techniques of Research data analysis through: (a) analysis of the strategy, (b) the performance measurement of Balanced Scorecard consist of the three researched aspects: aspects of the customer, internal business process, learning and growth, (c) analysis of the relationship of the two perspectives of Balanced scorecard. Data was collected through: (a) field research at Technical Faculty, UNNES Indonesian by methods of questionnaires, interviews and observations of the respondent. (b) the data obtained through library literatures, newsletters, magazines, journals and other sources.

III. THE RESULT OF RESEARCH

The Results of research the management of academic quality performance at Technical Faculty UNNES in perspective is shown for (1) the customer's perspective, namely: data of graduates (Table 1), (2) internal business process, this perspective includes (a) the condition of the device and the attendance of lecturers in the implementation of learning (Table 2), (b) academic atmosphere (Table 3), (3) learning and growth perspective include: (a) Thesis/Final Project guidance (table 4), (b) scientific publications and the acquisition of intellectual property rights (Table 5), (d) research data and service (Table 6).

Table 1 shows the waiting period of graduates to get a job has already completed the standards of BAN-PT and there is compatibility between the field of study with the workplace. but it necessary to be improved is the timeliness. Study and procentage of GPA ≥ 3 that still under the standard and satisfication of graduates user still under BAN-PT namely it is each as much as 30 % and 92% and 3.5.

TABLE I. THE DATA OF GRADUATES

Components	FT	Standar of BAN-PT	Remarks
Average of the waiting period graduations to get the first job	2	≤ 3 months	Complete the standard
% Suitability between work field of graduates with study field	83.5%	$\geq 80\%$	complete the standard
% Timely of graduates (max 4,5 years)	30 %	50%	Does not complete the standard
% GPA Graduates ≥ 3.00	92 %	100%	Does not complete the standard
Satisfication of Graduates User	3.5	4	Does not complete the standard

TABLE II. DEVICE AND ATTENDANCE OF LECTURE ON LEARNING IMPLEMENTATION

Component	Performance of FT	Standar of BAN-PT	Performance Achievement
% availability description of subject, syllabus and SAP	87.33	100%	Does not complete the standard
% availability content of digital learning (e-learning)	33.4	NA	complete the standard
% Attendance of fixed lecturers in the lecture	96.6	100%	complete the standard

Table 2 shows about the performance of availability of digital content, and the percentage of attendance of lecturers to conduct the learning which has been categorized and completed the standards BAN-PT. An increasing is needed on the percentage of availability description of subject, syllabus, and SAP, which has reached about 87.33%, that should reach the BAN-PT about 100%.

TABLE III. ACADEMIC ATMOSPHERE

Components	Performance FT	Standar BAN-PT	Performance Achievement
Amount of programs and academic activities to create an academic atmosphere	34	12 times	Complete the standard
Satisfication of students academic service	3.7	5	Does not Complete the standard
Lecture's performance index	4.046	5	Does not Complete the standard

The data of Table 3 shows the academic atmosphere is bad categorized and proved by : (1) the satisfaction of the academic services, (2) the lecturer's performance index , and (3) the satisfaction of graduates is still under the standard of the BAN-PT But there is an effort of Technical Faculty UNNES to increase the academic atmosphere with programs and activities which are

functioned to create the academic atmosphere and have completed the standard of BAN-PT.

TABLE IV. THE THESIS/FINAL PROJECT GUIDING

Component	FT	Standar of BAN-PT	Remarks
Average the numbers of the thesis guidance meeting	14.99	8 times	Complete the standar
Average time of thesis finishing	9.65	≤ 12 months	Complete the standar

The data in Table 4, describes about the data of guidance of thesis/final project that has been good categorized. This condition shows that students have a good responsibility to complete the thesis and Final project, as well as the lecturer has given the comfort motivation toward students so that the students always attempt to implement the thesis / Final Project guidance, On time.

TABLE V. SCIENTIFIC PUBLICATIONS AND IPR ACQUISITION

Component	FT	Standar of BAN-PT	Remarks
Publication of research in the international journal	2	NA	Completes the standard
Publication of research in the accredited international journal	12	NA	Completes the standard
Publication of research in the international journal which is not accredited	19	NA	Completes the standard
Acquisition of IPR/patent	3	3	Completes the standard
Publication of research in the proceeding of international seminar	6	NA	Completes the standard
Publication of research in the proceeding of national seminar	26	NA	Completes the standard

The management of FT UNNES quality performance in the field of scientific publication and acquisition of intellectual property rights have already been good (Table 5). These scores are supported by research and service performance data (Table 6) which have been exceed the BAN-PT standard.

TABLE VI. THE RESEACH DATA AND SERVICE

Component	FT	Standar of Ban PT	Remark
Ratio of Research on number of lecturers	1.275	1:1	Complete the standard
the involvement of students in every research	2	2	Complete the standard
the community service Activity bases on the research	35	NA	Complete the standard
Ratio of the community service activity toward the number of lecturer	1.275	1:1	Complete the standard

The management of quality Performance of Technical Faculty. UNNES on the research field and service has been good categorized and already completed the standard of BAN-PT. From the four components of the research and sevice which measured including (1) The ratio of research on the number of lecturers, (2) Involvement of students in every research, (3) the of The community service activity based on the research, (4) Ratio of community service activities toward the number of lecturers.

IV. DISCUSSION

The management of Academic Quality Performance is discussed about research data concerning (a) the customer's perspective, (b) internal business processes, (c) the perspective of growth and learning and research, and (d) comparising the three perspectives of Balanced Scorecard with standard of BAN PT, respectively described as follows, the customer perspective is observed from the quality of graduates. The quality of graduates who have completed the customer according to BAN-PT is: the waiting period graduates to get a job, and suitability the field work of graduates with the field of study. While the quality of graduates has not completed the customers' need includes the timely graduation, GPA graduates $\geq 3,00$, and satisfaction of graduates user, the three of these aspects still need to be improved because it is still under the standard of BAN-PT (Table 1).

The Achievement Index (IP) is the average credit score which is a unit of the final score that describes the score of the learning process of each semester. There are several factors that affect the performance index, according Karyanus Daely et al.-: 2013 h: 484 four factors that affect the student achievement index, namely, Factor of Environment and Parent Controlling, Factor of Financial Condition and learning Motivation, Factor of Learning Quality and Sharing of Learning time, and Factor of Teaching Quality of Lecturer and Student Health. High or low GPA describes the level of mastering of the learning competencies of graduates, these conditions is affected by the quality of human resources.

Furthermore, from the perspective of internal business process, this perspective include (a) the condition of the device and the attendance of lecturers in the implementation of learning (Table 2), (b) academic atmosphere (Table 3). Analyzing the data of device and attendance of lectures on the implementation of learning, is obtained a description that (1)% availability of descriptions a subject, syllabus, and SAP has only reached 87.33% , not reach 100% yet , it indicates that the performance is bad. Different from the point, (2)% availability of digital content learning (e-learning 33.4% have completed the standard, and (3)% Attendance of fixed lecturer in lectures 96.6% or 100%. If compared with standard of BAN- PT , then the performance management of availability of e-learning, and the attendance of lecturers in teaching has complete the standard.

Furthermore associated with learning and growth perspective, it includes: (a) Thesis/Final Project guidance (Table 4), (b) the data of graduates (Table 1), (c) scientific publications and acquisition IPR (Table 5), (d) the research data and service (table 6). Thesis/Final Project Guidance on the students consist of (1) Average number of meetings of thesis guiding, 14.99 times and (2) Average time of thesis Finishing obtained a score of 9.65. the performance of thesis guidance completes the standard. This condition indicates that both of students and lectures have already a good performance to finish the thesis. the improvement is conducted as an effort to improve the quality onf the writing, and to shorten the thesis. Thus it is expected to reduce the period of study and will reduce the waiting period graduates in getting a job at the same time. The good quality of thesis will also increase the competitiveness of graduates as an effort to increase the success of first graduate. In the same mind the research of Wiyatmo, Y., et al (2010: F-418), said the effort of thesis management consists of (1) Schedule/plan of work to be done during the process of the final project, (2) to Follow every schedule or work plan strictly which has been arranged. (3) To evaluate each plan of work which has been done regularly (e.g. every week), (4) to Avoid changing the topic in the middle way, this is related to the problems in determining the topic of the final project (5) to create a regular schedule of meetings with the mentor, and (6) Focus on the final project which is done. As much as possible students reduce activity /problem/other things that are not related to the final project because it can reduce the concentration of what is being done. Wiyatmo, Y, et al (2010: F-408)

Related to the data of scientific publications and the acquisition of intellectual property rights then data about scientific publications consist of: (1) Publication of research in the international journals, (2) Publication of the research in the accredited national journal, (3) Publication of research in national journal is not accredited, (4) acquisition IPR patent, (5) Publication of the research in the proceedings of the international seminar, (6) Publication of the research in the proceedings of the national seminar. The analysis shows that the performance management field of scientific publications and acquisition of intellectual property rights complete the standards. The efforts that can be done with improve the quality of lecturer's research, especially research that has opportunity to get the IPR / patent.

Analysis of research data and service on lecturers' society of the Tehnical Faculty of UNNES will be related to (1) The ratio research toward the number of lecturers, (2) Involvement of students in each research, (3) the community service activity bases on the research, (4) Ratio of community service activities toward the number of lecturers has completed the standard of performance of BAN-PT.

V. CONCLUSION

The management of academic quality performance of Tehnical Faculty UNNES which is grouped for (a) the customer's perspective, (b) internal business processes, (c) the perspective of growth and learning and research, and after analyzed generally by the Balanced Scorecard method has completed the standard of the National Accreditation Board of Higher Education (BAN PT.) Several aspects necessary to be improved include: the timeliness of the study, the percentage of the GPA's graduate of ≥ 3 , the satisfaction of graduates user, the percentage of availability of description the subject, syllabus, and SAP, the performance availability of digital content, and the percentage of lecturers' attendance to implement the learning process. The Effort to improve the management of academic performance has been attempted, namely by (1) provide remuneration for lecturer and educator, (2) more empowering the Quality Assurance Agency on the level of the Technical Faculty.

VI. SUGGESTION

From the data analysis and conclusions, then there are several suggestions that submitted by author, such as:

1. Required a socialization which is more comprehensive about the component of activity that included into remuneration, and the improvement of services to accommodate these activities in the form of a letter of assignment, so that obtain the recognition and paid in the form of remuneration, an increasing of remuneration which is received by lecturer and educator will increase services on their duties.
2. It should be improved an access for lectures and staff in the research implementation that has a chance to obtain the intellectual property rights, as well as participate in scientific activities of international level.

REFERENCES

- [1] Dessler, Gary. 2005. Human Resource Management. 10th Edition. Pearson Prentice-Hall, Inc., Florida.
- [2] Eddy Soeryanto Soegoto. (2011). Application of Performance Management With Balanced Scorecard approach to Improve the Accountability of College Management College. Magazine Scientific Digital Vol. 6, No. 2. Retrieved from: http://jurnal.unikom.ac.id/_s/data/jurnal/v06-n02/vol-6-artikel-1.pdf/pdf/vol-6-artikel-1.pdf
- [3] Karyanus Daely et al.- (2013) Statistical Analysis of the Influencing Student Achievement Index Factors. Saintia Mathematics Vol. 1, No. 5 (2013), pp. 483-494..
- [4] Kaplan R.S. dan Norton D.P., (1996). Balanced Scorecard: Determining the Strategy Into Action, Harvard Business Review.
- [5] Kristiana, Sri Rahayu (2009) "Balanced Scorecard As One method of A Performance Measurement on the Banking Companies". CCIT Journal. Higher Education Prog Indonesia
- [6] Sharma, Ashu. 2009. "Implementing Balance Scorecard for Performance Measurement". ICAFI Journal of Business Strategy. Vol. 6 Issue 1, p7-16, 10p, 2 Diagrams Faculty; The Icfai Business School, Jaipur, India.
- [7] Wiyatmo, Y, Mundilarto, Suharyanto, and Widodo, E. (2010: F-408) Effectiveness of Guidance Final Project Thesis (TAS) student of Physics Education Department Student UNY. Proceedings of the National Seminar on Research, Education and Application of MIPA, Science Faculty Yogyakarta., University, May 15, 2010.