

The use of the Malcolm Baldrige Method to Formulate Strategic Planning in Technological and Vocational Education

Suharno

Dept. of Mechanical Engineering Education
Sebelas Maret University
Surakarta of Central Java, Indonesia
myharno@yahoo.com

Abstract— This article describes the results of a research study evaluating the performance of Technological and Vocational Education (TVE) by using the Malcolm Baldrige method. Data of the performance were used to know its excellence and weakness. Based on the excellence and weakness in performance, a competitive strategy could be formulated to improve TVE quality. First, performance measurements using the Malcolm Baldrige criteria were done on seven study programs from different universities. Second, results of the performance measurements were analyzed and described. With the data resulting from the performance measurements as basis, the excellence and weakness in TVE performance could be known. Third, a strategy was developed. Based on the performance excellence and weakness, a performance improvement strategy could be formulated to raise the quality level in education at TVE. The research results indicate that for level of performance the seven universities measured achieve scores ranging from 526 to 711 points. It shows that the performance of study programs in TVE in Indonesia puts them in the categories of education leader and emerging education leader. On the basis of those categories, each study program could formulate its own competitive strategy to improve TVE performance so that the education conducted also rises in level of quality.

Keywords— *Malcolm Baldrige, TVE, competitive strategy, quality improvement in education*

I. INTRODUCTION

Because of its importance, performance measurement is required and conducted not only in the world of business but also in the world of education [1]. So important is performance measurement in the management of universities particularly and the world of education generally that the directorate general of higher education has put it inside a new management format with the purpose of continuous quality improvement in education. In forming the National Accreditation Body, the government endeavors to monitor and develop the quality of higher education by making several higher educational institution performance indicators as the parameters [2].

The Institution for Prospective-Teacher Education, which has the department of Technological and Vocational Education (IPTE-TVE), as higher educational institution generating specifically prospective teachers to conduct technological and vocational education very much needs to form a system of performance measurement for the sake of having a vision and mission as part of the system of quality assurance [3]. A good performance measurement system should be comprehensive and integrated for all units and activities. The performance indicators formed are in the form of not only financial performance indicators but also non-financial performance indicators [4]. The Malcolm Baldrige method is one of the tools that could be used to measure the performance of an educational institution. This article presents results of research on the measurement of performance in conducting education at IPTE-TVE on the basis of the Malcolm Baldrige criteria to improve the quality of education at IPTE-TVE.

II. THEORETICAL REVIEW

A. Performance Measurement

An act of measurement occurs when a certain measuring tool is used to ascertain the weight, the height, or any other feature of an object being measured. In daily life we often conduct measurement; in research, however, to conduct measurement certain requirements should be fulfilled. Measurement in research consists of assigning numbers to empirical events in accordance with certain rules [5].

Performance is the result of work that one achieves in accomplishing tasks that one is burdened with on the basis of competence, experience, and sincerity as well as time [6]. There are several performance measurement devices that could be used; they are, among others, the balanced scorecard, the Quality Management System of ISO 9001, and the Malcolm Baldrige National Quality Award or the Malcolm Baldrige Award [7]. If IPTE-TVE is incapable of measuring its performance, then it would experience difficulty in managing its performance effectively [8].

B. Malcolm Baldrige

The Malcolm Baldrige National Quality Award (MBNQA), more commonly known as the Malcolm Baldrige Award, is a quality management system whose main purpose is to raise awareness of quality, identify requirements for prime quality, introduce various methods of quality measurement for education, and share information about successful quality strategy and its benefit [9].

The Malcolm Baldrige criteria constitute a quality management model establishing guidelines and criteria that could be used by organizations in evaluating efforts to improve the quality of their management. The aforementioned related award is applicable on organizations of any type, large or small and profit or non-profit ones [10]. According to [11], the Malcolm Baldrige criteria are designed to aid organizations in improving their performance through two focuses, namely, success in the market through increase in customer satisfaction values and improvement of competence and effectiveness throughout the organization concerned. Performance measurement with the Malcolm Baldrige method emphasizes seven criteria with the total score of 1000 points. The seven criteria are leadership (worth 120 points), strategic planning (worth 85 points), customer and stakeholder (worth 85 points), information and analysis (worth 90 points), human resource (worth 85 points), process management (worth 85 points), and results of activities (worth 450 points). The determination of the maximum score for each category is based on how much the influence of the criteria concerned is on the performance of an institution [9]. The categories of evaluation results refer to Table 1.

TABLE 1. DESCRIPTION OF RESULTS OF PERFORMANCE MEASUREMENT WITH THE MALCOLM BALDRIGE METHOD.

Score	Criteria	Category
876-1000	World Leader	
776-875	Benchmark Leader	Excellent
676-775	Industry Leader	
576-675	Emerging Industry Leader	
476-575	Good Performance	Average
376-475	Early Improvement	
276-375	Early Result	Poor

III. PROPOSED METHODOLOGY

The research objects were seven study programs from four different IPTEs. Table 2 presents the names of the study programs and the numbers of respondents. The steps taken in order in the research were making an initial qualitative survey on study program performance, planning a questionnaire based on the Malcolm Baldrige criteria.

TABLE 2. OBJECTS AND NUMBERS OF RESPONDENTS IN THE PERFORMANCE MEASUREMENT

NO	Study Program	IPTE-TVE	Number of Responden
1	Civil Engineering Education	Sebelas Maret University	22
2	Mechanical Engineering Education	Sebelas Maret University	23
3	Vocational Education	UST Yogyakarta	7
4	Mechanical Engineering Education	UST Yogyakarta	12
5	Electrical Engineering Education	Nusa Cendana University	8
6	Mechanical Engineering Education	Nusa Cendana University	10
7	Civil Engineering Education	Nusa Cendana University	7
Sum.			89

Next, distributing the questionnaire to respondents, processing the data obtained and fitting them into the Malcolm Baldrige categories, making an evaluation on each category and sub-category in percentage form based on the table of Scoring Guidelines by Malcolm Baldrige, making an overall evaluation to get the performance final score. Finally, making an analysis and discussion in order to give recommendations that are beneficial for the formulation of a competitive strategy.

IV. RESEARCH RESULT

The performance measurement for all research objects was based on the Malcolm Baldrige criteria covering seven categories. Results of the performance measurement at the Study Program of Building Engineering Education (BEE) of Sebelas Maret University for the leadership criterion are shown in Table 3. Based on Table 3, it could be seen that for the item of involvement of the head of the study program the average evaluation by respondents is 63%. Based on items evaluated, the average performance in study program leadership is 65% while that in quality management is 54%. With the average performance evaluation result multiplied by the magnitude of the points determined by the Scoring Guidelines of the Baldrige Award, the total of the points obtained for leadership performance is 72.83 (the maximum value is 120 points).

TABLE 3. LEADERSHIP PERFORMANCE IN THE CRITERION OF BEE STUDY PROGRAM.

Criteria of Leadership	% Rating	Avg. by Sub Catg.(%)	Total point by Sub Category	Total Point
1. Study Program Leadership (70 point)				
1.01 Involvement of study program	50%			
1.02 Commitment and consistency Effective	56%	58%	70	40.250
1.03 Communication to enhancing of quality	56%			
1.04 Developing of leadership capacity	68%			
2. Quality Management and Social Responsibility (50 Point)				
1.05 Accountability of program study leadership	60%			
1.06 Communicate to staff about customer expectation	50%			
1.07 Support to enhancing of staff competency	30%			
1.08 Empowerment to staff for continuously competency improve	54%	44%	50	22.125
1.09 Social Feed back for activity of program	58%			
1.10 Assessment of products and services on social issues	32%			
1.11 Company leadership on social issues	46%			
1.12 Evidence in support of social responsibility	24%			
	Total Point		120	62.375

Based on the calculation as indicated by Table 3, performance measurement for other criteria could be made. Table 4 shows the result of a recapitulation of performance evaluation for all the criteria for the study program of BEE and Table 5 shows that for the study program of Mechanical Engineering Education (MEE).

Based on the evaluation results (see Table 4), the score gained by the program study of BEE is 581. It means that the performance of the study program of BEE receives the attribute of being average and it belongs to the category of Emerging Industry Leader. It means that the BEE study program has begun to move toward being an industry in the world of education. In other words, it is already approaching organizational management based on industrial competition. By improving performance focused on fixing weaknesses and raising strengths to the maximum, it has a good chance to enter the area of Industry Leader. When it does, the operation of all its performance would be industry-based. Its management, for

example, which includes work plan, value, and culture, would be perceived or treated as that in industry. The work program formulated would be directed toward competitive quality achievement and no longer mere program accomplishment which is regular in nature. The BEE study program would then have to begin to abandon conventional performance patterns and to move toward modern performance patterns.

TABLE 4. RECAPITULATION OF POINTS AND POSITION EVALUATION OF THE BEE STUDY PROGRAM

No	Criteria	Point by MBCfE	Result Point	Point Target (%)
1	Leadership	120	73	60.69
2	Strategic Planning	85	51	59.51
3	Customer	85	51	59.51
4	Information & Analysis	90	48	53.61
5	Staff	85	54	63.00
6	Management Process	85	47	54.93
7	Results	450	258	57.44
		1000	581	100

In general, the BEE study program is already good in performance but it still must be accepted that there is still a gap between reality and expectation. Of the figure of 100% (total maximum performance), the study program obtains the evaluation of around 50% and it evenly applies on almost all criteria. Therefore, improvements need to be done in all categories. More specific recommendations could be made on the basis of the data obtained from the questionnaire filling-in. The questionnaire obtained gives considerable information of both quantitative and qualitative nature. In order that the quantitative data exert a significant impact, the planning team should interpret them qualitatively.

TABLE 5. RECAPITULATION OF RESULTS OF MEE UNS PERFORMANCE MEASUREMENT

No	Criteria	Point by MBCfE	Result Point	Point Target (%)
1	Leadership	120	93	77.5
2	Strategic Planning	85	63	74
3	Customer	85	62	73
4	Information & Analysis	90	64	71
5	Staff	85	61	72
6	Management Process	85	60	70.6
7	Results	450	309	67
		1000	712	

Based on Table 5, it is seen that the measurement score obtained by the MEE study program is 712 points. It means that its performance gets the attribute of being excellent and it is considered belonging to the category of Industry Leader. That consideration means that the study program has entered the area of industry in the world of education though still in an early stage. Its entrance into the area of industry means that the operation of all its performance would be based on quality. For example, its management, which includes work planning, value, and culture, is conducted with a competitive performance.

Generally, the MEE study program is already good in performance though there is still a gap between reality and expectation. Excellence in its performance lies on the criterion of leadership, which gains a score of 77.5%. Excellence in leadership performance is a great capital to start with for the progress of an organization. With the importance of the criterion of leadership in mind, Malcolm Baldrige mentions it first in the list of criteria. It is not without reason for indeed basically the goals of an organization would be achieved only when the leadership in it could operate effectively [12].

However, several other categories still show considerably wide gaps. Such is the case with the criterion of results of activities, for example. Therefore, main recommendations of improvements need to be for such categories. Based on the data obtained from the questionnaire filling-in, more specific recommendations could be made. The questionnaire obtained provides considerable information of both quantitative and qualitative nature. Thus, whatever the questionnaire is filled in with, it constitutes the data that could be used as source of information and means of communication with other divisions.

With the performance value obtained by each study program as basis, policy-makers could make an analysis on each criterion and make use of to improve the performance of their institution. Table 6 shows a recapitulation of the performance measurement results for other study programs.

TABLE 6. RECAPITULATION OF PERFORMANCE MEASUREMENT WITH THE MALCOLM BALDRIGE METHOD.

No	Category	IPTE-TVE				
		3	4	5	6	7
1	Leadership	82	72	85	73	91
2	Strategic Planning	56	41	55	34	70
3	Customer	55	45	58	39	62
4	Information & Analysis	55	42	64	33	74
5	Staff	56	45	63	49	70

6	Management Process	51	49	61	41	67
7	Results	264	241	294	304	358
		619	535	680	573	793

V. CONCLUSION

IPTE-TVE is one of the organization types possessing unlimited resources. Its role in Indonesia is extremely strategic in supporting economic growth and progress in national competitiveness. Therefore, it should work hard in being able to measure its performance in order that its effectiveness in conducting education is known. On the basis of performance measurement using the criteria related to the Malcolm Baldrige Award, each study program in it could formulate its own competitive plan for improvement in quality of education.

REFERENCES

- [1] Warzynski, C. (2001). How can the balanced scorecard improve performance at your institution?. Pennsylvania: Pennsylvania State University.
- [2] Depdiknas. (2010). Sistem Penjaminan Mutu Perguruan Tinggi. Jakarta: Dikti..
- [3] Wikipedia. (2008). Vocational education and training. Diambil pada tanggal 3 Agustus 2011, dari http://en.wikipedia.org/wiki/Vocational_Education_and_Training..
- [4] . Wheelen, T.L. & Hunger, J.D. (1996). Strategic management (5th ed.). Boston: Addison Wesley Publishing Company.
- [5] Cooper, D.R. & William, E.C. (1996). Metode penelitian bisnis. Erlangga: Jakarta..
- [6] Bambang Swasto. (1996). Pengembangan Sumber Daya Manusia Terhadap Kinerja dan Imbalan, Cetakan Pertama, Universitas Brawijaya Malang.
- [7] Gaspersz, & Vincent. (2011). Malcolm Baldrige Criteria for Performance Excellence: Contoh Aplikasi Pemenang Malcolm Baldrige Award. Bogor: Vinchristo Publication..
- [8] Eko Indrajit, R., & Djokopranoto, R. (2005). Manajemen Strategis Perguruan Tinggi. Jakarta: Universitas Atmajaya..
- [9] Harry, S., Hertz. 2011. Criteria for Performance Excellence.. <http://www.nist.gov>
- [10] Brown, Mark Graham. (2008). Baldrige Award Winning Quality, Seventeenth Edition United State of America..
- [11] Zohrabi, A. & Manteghi, N. (2011). A proposed model for strategic planning in educational organizations. Social Science-Elsevier,76, 205-210.
- [12] Kaplan, R.S., & Norton, D.P. (2004). Strategy Maps: Converting Intangible Assets into Tangible Outcomes. Harvard Business School Publishing Corporation, New York, NY.