

THE EFFICIENCY OF THE PERFORMANCE ASSESSMENT MODEL OF RAJAMANGALA UNIVERSITY OF TECHNOLOGY RATTANAKOSIN

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ABSTRACT

The constructed performance assessment model of personnel of Rajamangala University of Technology Rattanakosin (RMUTR) was evaluated for the validity of the model. The model was developed based on four main criteria of assessment processes, i.e., the objectives of assessment, the scope of assessment, the assessment methodology, and the criteria of assessment. The major concerns of the constructed model were dealing with the assessment of the performance of RMUTR personnel, especially the assessment of the instructors' roles and responsibilities. All four main functional activities of the instructors, i.e., teaching, doing research, providing professional service to the community, and supporting the artistic preservation and cultural preservation, were used in the assessment. The data were collected from the five sample groups consisting of dean, associate dean (academic), instructors, instructors' colleagues, and students. The comparisons between the collected data and the absolute criteria developed by the experts were used for the data analysis.

It was found that the instructors had higher scores in performance assessment on the second round than those on the first round with significantly different at the level of 0.05. The overall result of the assessment of the performance of instructors revealed positive perception to the model. It showed good correlation between the collected data of five sample groups and the performance indicators with significantly different at the level of 0.05. It implied that this assessment result was reliable.

Keywords: Performance assessment model, personnel, RMUTR.

INTRODUCTION

Instructors are regarded as the indispensable, core resources of higher education institution because its effectiveness depends on the considerable part of the quality of the instructors. According to Bowen and Schuster (1986), without dedicated and competent instructors, the achievement of its central mission of higher education institutions cannot

succeed. Instructors are the main factor contributing to achievement of the mission of the institution. Several major concerns of the instructor's mission are consisting of teaching, doing research, policy formation, planning, designing curriculum, administration, and providing professional service to the community. Based on the concept of Kolb (1986), the instructors are considered to be the creator for

people, society and the nation. Therefore, the instructors are expected to have crucial characteristics and specific professional background conducive to their performance in the circle of higher education teaching, such as being creative academic thinkers, having strong intention to give education to others, devoting to teaching, and exercising on life-long learning activities.

Upon the above-mentioned roles of the instructors in the higher education institution, it can be said that the instructors are required to have various crucial characteristics and attributes including academic excellence, professional teaching techniques, morality, teaching personality and professional ethics. Therefore, there is a need to encourage and support the self-development, motives and career path of the instructors appropriately and continuously in order that they can be effectively responded to their academic work. The performance assessment has been recognized as the management tool for the administrators to get insight to the instructors' academic strength, weakness, capacities, abilities, career paths and other characteristics related to the instructors' academic career, and their needs for performance improvement. On the other hand, the instructors can apply the results of the performance assessment for the instructors' self-development. In addition, the administrators can apply the results of performance assessment for formulating the human resources development policy and strategies to support their self-development as well as for making decision on salary and compensation for the instructors. Therefore, it can be considered that the instructors are the key factor for the success and failure of the educational management as well as the achievement of the targeted goal of the higher education institution. Based on the concept of Meesuttha and Sadchanukorn (2005), the performance assessment is a component of the integrated human resources management under the effective human resources development scheme, which is one of the affective factors of the successful organization.

Rajamangala University of Technology Rattanakosin (RMUTR) has been upgraded from the

Institute of Technology to become the university under the umbrella of the Council of Higher Education (CHE), resulting in limited manpower for the higher educational level. All existing instructors have to perform their duties both in academic and administrative works. The RMUTR has committed its mission with CHE, thus, the career functions of instructors are divided into several missions, i.e., teaching load for 40%, workload in doing research is about 20%, workload concerning providing professional services to the community is about 30%, and the rest 10% is for doing artistic preservation and cultural preservation 10%. To achieve these targeted goals, there is a need to set up the framework for formulating practical and applicable performance assessment model in line with the organization's mission.

It has been shown that the performance assessment of personnel has outstanding strength in line with the National Educational Act B.C. 2542 (1999), which self-assessment and team working are the major concerns. Six criteria of the strength of the performance assessment, i.e., the traceable feedback which helps narrow the gap and reduce the bias between the respondents and the assessed faculty, check and balance among all personnel in the organization based on the feedback, application of feedback for further actions on human resources development, assessment based on current typical performance, no pre-assessment training for respondents, and active support for organizational culture development, are used in the opened system of modern organizational administration which emphasizes the participation of all parties concerned and team working (Punnitamai, 1997).

There is a need for the effective and systematic performance assessment model for RMUTR, in order to motivate its personnel concerning acknowledge management for their performance improvement in accordance with its mission. The RMUTR administrators can apply this information for further follow-up, monitoring, and policy decision-making. Therefore, it is necessary to study the development of the performance assessment model of RMUTR's

personnel for their better performance and motives which are beneficial to the RMUTR as a whole.

The purposes of this study were to develop and to study the efficiency of the performance assessment model of personnel of RMUTR.

RESEARCH METHODOLOGY

The instrument was a set of questionnaires dealing with the performance assessment and their attitudes towards the performance assessment of RMUTR's personnel. The content validity of the questionnaire was reviewed by five experts. The constructed questionnaire was preliminary tried out with the personnel of the Faculties of Engineering and Architecture for reliability coefficients, which the values of reliability coefficients were 0.94 and 0.92, respectively.

The performance assessment model was subsequently constructed based on the concept of role and responsibilities of faculty in higher educational institutions. The four basic roles of faculty in higher educational institutions were taken into consideration. The constructed model was scrutinized by 10 experts using focus group discussion technique. The model was subsequently revised according to the comments and suggestions of the experts.

The data collection instrument was self-report questionnaires. The sample in this study consisted of 312 faculty members of the Faculty of Engineering and Faculty of Architecture of RMUTR,

where 30 of them were 30 faculty members consisting of dean, associate dean (academic), instructors, instructors' colleagues and 280 students of the mentioned faculties. The selection of participants was done based on the weighted criteria of 25% for each group.

The constructed performance assessment model was consisted of the performance assessment of RMUTR personnel, and the 5-rating scaled attitude test on the performance assessment of RMUTR personnel. It was used against 30 faculty members of RMUTR's personnel in round I of data collection during the middle of semester, while round II of data collection was done at the end of the semester. The data collections were done in order to study the results of self-development of personnel, to investigate the attitudes of the respondents toward the model, to examine the validity of the results, and to find out the efficiency of the model.

An analysis technique for the contents was carried out in order to apply the results for the development of the performance assessment model of RMUTR's personnel. The statistic analysis used consisted of mean, standard deviation (S.D.), correlation coefficient, and t-test. It was found that the percentage of the different scores in round II were higher than those of round I as the proposed growth or progress criteria of performance of RMUTR's personnel, as summarized below.

Not growth	=	percentage of different scores valuing $X \leq 0$
Fair	=	percentage of different scores valuing $0 < X < 40$
Fairly good	=	percentage of different scores valuing $40 \leq X < 60$
Good	=	percentage of different scores valuing $X \geq 60$

RESULTS

The proposed performance assessment model of RMUTR's personnel based on the concept of roles and responsibilities of faculty members of higher educational institutions were consisted of four components, i.e., objectives of assessment, scope of assessment that including of four basic roles and

responsibilities of RMUTR's instructors, assessment that consisting of samples, assessment methodology, and assessment tool, and absolute criteria for assessment.

The four major criteria of the performance assessment of RMUTR's personnel consisted of the assessment objectives which aimed at developing

the performance of RMUTR’s personnel; the scope of assessment consisting of role and responsibilities of RMUTR’s personnel that based on the 14 weighted indicators divided into teaching 40%, doing research 20%, providing professional services to the community 30%, and doing artistic preservation and cultural preservation 10%, respectively; the research

methodology which covered the data collection of five sample groups, namely, dean, associate dean (academic), instructors, instructors’ colleagues and students; and the criteria for assessment by using the comparisons between the collected data and the absolute criteria developed by the experts, as shown in Table 1.

Table 1. Criteria for the performance assessment of personnel of Rajamangala University of Technology Rattanakosin perceived by the experts.

Role and responsibilities	No. of items	Total score	Proportion of role and responsibilities	Weighted indicators	Total score \times weighted indicators	Total score 100%	Passing score 70%
Teaching	9	45	40	0.4	18	65	45.5
Doing research	4	50	20	0.2	4	15	10.5
Providing professional service to the community	3	15	30	0.3	4.5	16	11.2
Doing artistic preservation and cultural preservation	2	10	10	0.1	1	4	2.8
Total	18	90	100	1	27.5	100	70

It was found that the experts perceived that the passing scores of performance assessment of RMUTR’s personnel were 70%. Such passing scores had to be divided into teaching 45.5 %, doing

research 10.5 %, providing professional service to the community 11.2 %, and doing artistic preservation and cultural preservation 2.8 %, respectively.

The efficiency of the performance assessment model of RMUTR’s personnel.

Table 2. The comparison between the results of performance assessment of RMUTR’s personnel between rounds I and II.

Components of career functions	Perception				P
	Round I		Round II		
	\bar{X}	S.D.	\bar{X}	S.D.	
Teaching					
Teaching	3.93	.86	4.64	.40	.01*
Teaching planning	3.82	.93	4.07	.80	.02*
Textbook, hand-outs	3.53	.86	3.86	.53	.22
Teaching materials	3.81	.80	4.13	.67	.07
Measurement and evaluation	3.84	.84	4.33	.68	.02*
Teaching records and class activities	3.81	.76	4.53	.50	.01*
Preparation	3.65	.75	4.21	.68	.01*
Guidance	3.57	.89	3.91	1.00	.16
Students’ academic abilities	3.86	1.02	4.13	.40	.01*
Total	3.79	.72	4.21	.52	.01*

Components of career functions	Perception				P
	Round I		Round II		
	\bar{X}	S.D.	\bar{X}	S.D.	
Doing research					
Research / invention / creative work (annual)	1.74	.90	2.76	.80	.05*
Budget of research / invention / creative work (annual)	1.49	1.03	2.87	.78	.02*
Dissemination of research / invention / creative work (annual)	1.18	.96	1.91	.79	.04*
Acceptance of research / invention / creative work (annual)	1.17	.92	1.74	.86	.04*
Total	1.39	.82	2.32	.64	.03*
Providing professional service to the community					
Acting as committee (per semester)	1.21	1.16	1.73	.93	.07
Acting as resource persons	1.03	.92	1.72	.81	.03*
Networking and participation	1.74	.97	2.83	.95	.06
Total	1.36	.81	2.16	.68	.02*
Doing artistic preservation and cultural preservation					
Projects/activities for artistic preservation and cultural preservation	1.48	1.21	2.35	.91	.34
Participation in artistic preservation and cultural preservation	1.49	.89	2.24	.83	.08
Total	1.33	.87	2.30	.76	.03*
Overall	1.97	.73	2.77	.67	.04*

* $P \leq .05$

It was shown that overall scores of the instructors showed higher average scores of performance assessment on round II (\bar{x} = 2.77, SD = 0.67) than those of round I (\bar{x} = 1.97, SD = 0.73) at the significance level of 0.05. The average scores of round II were higher than those of round I at the significance level of 0.05, as seen from \bar{x} in Table 2.

Once each component was analyzed, it was noted that all four components of RMUTR's personnel including teaching, doing research, providing professional service to the community,

and doing artistic preservation and cultural preservation showed reflected the improved performance of RMUTR's personnel, as shown in Table 2 that the average scores of all components of round II (where \bar{x} = 4.21, 2.32, 2.16 and 2.30) were higher than those of round I (\bar{x} = 3.79, 1.39, 1.36 and 1.33).

Overall, it implied that the performance assessment model had positive effects to the performance improvement of RMUTR personnel.

Table 3. The growth score of the performance assessment of the sample.

Subject No.	Score of assessment (100%)		Growth score (%)	Growth level
	Round I	Round II		
1	65.89	74.77	26.03	Fair
2	73.80	73.90	4.04	Fair
3	64.25	75.21	30.66	Fair
4	72.55	81.83	33.81	Fair
5	66.15	75.51	27.65	Fair
6	72.16	78.62	23.20	Fair
7	74.55	80.55	23.58	Fair
8	75.05	77.47	9.70	Fair
9	78.71	80.30	7.47	Fair
10	75.14	76.44	5.23	Fair

It was found that the assessment scores of 10 subjects on round I were 64.25 – 78.71, whereas the ones on round II were 73.90 – 81.82. It implied that

the self-improvement of the RMUTR personnel members was positive.

Table 4. The growth score of the performance assessment of the sample.

Subject No.	Score of assessment (100%)		Growth score (%)	Growth level
	Round I	Round II		
11	73.28	78.28	18.71	Fair
12	73.47	78.39	18.55	Fair
13	78.21	90.95	58.47	Fairly good
14	77.87	88.92	49.93	Fairly good
15	68.72	77.17	27.01	Fair
16	76.16	88.77	52.89	Fairly good
17	68.47	82.47	44.40	Fairly good
18	71.67	82.09	36.78	Fair
19	78.53	87.18	40.29	Fairly good
20	90.10	92.42	23.43	Fair

Based on Table 3.2, it revealed that assessment scores of another 10 subjects on round I and II were

68.47 – 90.10 and 77.17 – 92.42, respectively. It could be said that they showed better performance.

Table 5. The growth score of the performance assessment of the sample.

Subject No.	Score of assessment (100%)		Growth score (%)	Growth level
	Round I	Round II		
21	74.48	84.27	38.36	Fair
22	78.22	87.13	40.91	Fairly good
23	75.18	77.21	8.18	Fair
24	82.39	80.57	-10.34	Not growth
25	73.70	74.54	3.19	Fair
26	74.50	85.47	43.02	Fairly good
27	77.96	79.25	5.85	Fair
28	87.66	96.06	68.07	Good
29	76.52	78.03	6.43	Fair
30	82.05	84.44	13.31	Fair

It was noted that the assessment scores of the rest 10 subjects on round I were 73.70 – 87.66, whereas the ones on round II were 77.21 – 96.06. When comparing these scores, it revealed that their performance had been improved.

Table 6. Numbers and percentage of faculty based on growth score.

Faculty	Growth score				Total
	Not growth ($X \leq 0$)	Fair ($0 < X < 40$)	Fairly good ($40 \leq X < 60$)	Good ($X \geq 60$)	
Number (person)	1	21	7	1	30
Percentage	3.33	70	23.34	3.33	100

It was found that most of the faculty members showed better performance valuing 96.67%. When considering each sub-group, it revealed that there were 21 persons who showed fair performance ($0 < X < 40$) or 70%. The total of

7 personnel members or 23.34% showed fairly good performance ($40 \leq X < 60$). There was 1 person (or 3.33%) who showed good performance ($X \geq 60$) and 1 person or 3.33% did not show any growth ($X \leq 0$).

Table 7. Mean and S.D. of attitude of RMUTR personnel on the performance assessment model.

Item	n = 30		
	\bar{X}	S.D.	Attitude
The performance assessment is the prioritized function.	3.71	0.76	High
The weakness of faculty could be tackled properly.	3.59	0.87	High
The strength and development needs of faculty could be noted.	4.28	0.74	High
The faculty could perform the performance assessment with active attention because it could support them to carry out their career work qualitatively and quantitatively.	3.80	0.78	High
The faculty could improve their performance properly.	3.55	0.89	High
The performance quality of faculty could be developed.	3.57	0.86	High
The faculty could have better insight on their own performance and others'.	3.78	0.83	High
The self-development of faculty could be performed.	3.66	1.04	High
The feedback could be used for further improvement of work quality.	3.55	0.81	High
The faculty could have trust on their peer group.	3.72	0.81	High
The faculty could perform their career work actively and enthusiastically.	3.61	0.86	High
It improved the faculty's motives.	3.78	0.97	High
The faculty could have positive attitudes on their career work.	4.18	0.67	High
The faculty could perform their duties systematically.	4.01	0.76	High
The administration could pay more attention to the performance assessment.	4.00	0.72	High
Overall	4.09	0.71	High

It was noted that the overall average of attitude scores of 30 RMUTR personnel members to the performance assessment model was high ($\bar{X} = 4.09$, $SD = 0.715$, as shown in the Table 7). It implied that RMUTR personnel showed overall perception to the performance assessment at the high level.

Table 8. Numbers and percentage of the subjects based on their attitude on the performance assessment model.

Attitude level	Number of subjects	Percentage
Very low	-	-
Low	-	-
Moderate	-	-
High	30	100
Very high	-	-
Total	30	100

It showed that the 30 subjects who were RMUTR personnel members showed positive attitudes towards the performance assessment model at the high level, which valued 100%. It implied the performance assessment model was applicable for human resource management of RMUTR.

Table 9. Concurrent validity (r_{xy}) of subjects based on their affiliation

Subjects	r_{xy} (Based on 5 affiliation)
1	0.36*
2	0.82*
3	0.47*
4	0.31*
5	0.66*
6	0.32*
7	0.35*
8	0.51*
9	0.53*
10	0.47*

* $P \leq 0.05$

It showed that the concurrent validity of the performance assessment model which was quantified by the correlation co-efficiency between the two sets of scores obtained from the self-assessment of the instructors and the performance assessment of the instructors done by the first 10 subjects consisting of dean, associate dean, instructors, instructors' colleagues, and the students were 0.31–0.82 at the significance level of .05. It implied that the performance assessment validated at the confidence level of .05.

Table 10. Concurrent validity (r_{xy}) of subjects based on their affiliation.

Subjects	r_{xy} (Based on 5 affiliation)
11	0.44*
12	0.60*
13	0.51*

Subjects	r_{xy} (Based on 5 affiliation)
14	0.52*
15	0.47*
16	0.47*
17	0.71*
18	0.63*
19	0.65*
20	0.47*

* $P \leq .05$

Based on Table 10, it revealed that the concurrent validity of the performance assessment model which was quantified by the correlation co-efficiency between the two sets of scores obtained from the self-assessment of instructors and the performance assessment of instructors done by another 10 subjects consisting of dean, associate dean, instructors, instructors' colleagues, and the students were 0.44 – 0.65 at the significance level of .05. It implied that the performance assessment validated at the confidence level of .05.

Table 11. Concurrent validity (r_{xy}) of subjects based on their affiliation

Subjects	r_{xy} (Based on 5 affiliation)
21	0.87*
22	0.32*
23	0.51*
24	0.39*
25	0.51*
26	0.56*
27	0.66*
28	0.91*
29	0.43*
30	0.21*

* $P \leq 0.05$

Table 11 showed the concurrent validity of performance assessment model which was quantified by the correlation co-efficiency between the two sets of scores obtained from self-assessment

of the instructors and the performance assessment of instructors done by the rest 10 subjects consisting of dean, associate dean, instructors, instructors' colleagues, and the students were 0.21 - 0.91 at the significance level of .05. It implied that the performance assessment validated at the confidence level of .05.

DISCUSSION

The study on the efficiency of the performance assessment model of RMUTR's personnel was aimed at developing the performance assessment model of RMUTR's personnel, and to evaluate its efficiency in line with the applicability with the mission of RMUTR and its implementation of personnel's performance for their improvement and motivation. The results could be summarized that the constructed performance assessment model could be applicable for use at the RMUTR.

The efficiency of the performance assessment model of RMUTR's personnel revealed that the instructors had positive self-improvement as shown in the statistical difference between the results of the performance assessment rounds I and II with the significance level at 0.05. Results of performance assessment on round I are presumably derived from the facts that all subjects have been acknowledged by the researcher. The objectives of human resource development of RMUTR have been placing on teaching, doing research, providing professional service to the community, and doing artistic preservation and cultural preservation, and were emphasized during the process of assessment. The methodology of RMUTR's performance assessment had been concentrated on the assessment objectives, scope of assessment, the assessment methodology, and the criteria for assessment, respectively. Therefore, the result-based performance assessment model of RMUTR's personnel could be used as the basic information for further and proper development of RMUTR's personnel. Kanchanawasee (2002) stated that the intention of the performance assessment was to support the people and encourage their continued improvement through the use of high

quality information. The researcher applied the concept of full-cycle appraisal including downward appraisal, upward appraisal, peers appraisal, and self-appraisal for formulating the performance assessment of RMUTR's personnel. The mostly concerned issue of the mentioned assessment model was that all parties concerned in an institution had influences on each other. It would be more reliable and acceptable to the assessment (Edward and Ewen, 1996; Vinson, 1996; Pannitamai, 1997; Kanchanawasee, 2002). Sanders et al. (1995) suggested that the acceptable performance assessment could be carried out through the participation of all parties concerned. The performance assessment is possible to carry out through various methodologies or sources in order to investigate the work quality of the personnel. It was found that there were five sources of sample including dean, associate dean (academic), instructors, instructors' colleagues, and the students. In addition, the performance assessment was regarded as one component of the integrated modern human resource management under the effective human resource development scheme. It could be seen that the performance assessment was the management tool for the administrators to get insight into their subordinators' strength, weakness, competencies, abilities and their career path. The information could also help the administrators for making decisions on compensation (Meesuttha and Sathchukorn, 2005). It revealed that the scores of three career functions, namely, doing researching, providing professional services to the community, and doing artistic preservation and cultural preservation on round II was higher than those on round I. Since the research was done during the middle of the semester, which was the end period of the fiscal year, all work had to be completed by the end of the fiscal year.

It can make an overall assumption that the instructors had positive attitudes to the performance assessment model. It was because the result of performance assessment was empirical. The participation of all parties concerned could be a reliable channel for traceability. The personnel could

have better awareness on their limitations for their further self-improvement. Mondy and Noe (1990) stated that the personnel could be acknowledged of the results for their further self-improvement.

In addition, it was noted that the assessment results gained from the five sample sources showed statistical correlation at the significance level of 0.05. It implied that the assessment result was valid and correlated. Moreover, the active participation of all parties concerned for further performance development of personnel was highly recommended (Siwarom, 1999; and Sroyetchkasam, 2004)

In conclusion, it could be said that the performance assessment model developed by the researcher could be applicable for RMUTR personnel because RMUTR is a well-prepared higher education institution for modern human resource development as empirically seen from the full support from the Administration, personnel members and students. As a result, the application of such a model was significantly efficient. Moreover, the model could be used for strengthening the personnel members' motives, which could be affective to their performance improvement.

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