

A Quasi-Experimental Design for Management Development Training

Vudhichai Chamnong

Management development refers to career planning for increasing the effectiveness of individuals and meeting the needs of an organization. The specific development assignments of educational activities in which any manager engages are designed to enable him to reach his highest potential in the shortest time. Management development includes systematic reviews which identify members of management who can be expected to increase their managerial effectiveness through educational and special assignments; specific career development plans are made with and for individuals; these are written down and revised on a regularly scheduled basis (Agathon, 1972, p. 22-2). The total efforts of management development should therefore incorporate such activities as job analysis (Husband, 1976), organizational design (Galbraith, 1977), corporate planning (Somerville, 1974), manpower planning (Burack, 1972) as well as career development planning (Jennings, 1971; Hall, 1976; Van Maanen, 1977; Walter, 1978; Gould, 1978).

In this regard, the management development system should basically include the following ten elements (Crane, 1972, p. 668).

1. Organization projection
2. Position description
3. Management inventory
4. Replacement charts
5. Management recruitment based on projected organization changes plus forecasted turnover minus management inventory
6. Selection and placement in order to get the right man for the right job
7. Training for development
8. Performance appraisal
9. Salary administration
10. Continuous management development program evaluation.

This research was supported by UNDP/DTCP Project THA/75/021. The author would like to Thank Jim French, Soonthorn Nikomrat, and Pharani Kirtibutra for their invaluable contribution to this research at various stages.

Training for Development

Our interest and concern here are with the training for development and, of course, the evaluation of training program because of the limited role of the training advisor. It has always been recognized that the needs for development which determine the training content and training techniques contribute, to the large extent, to the successfulness or failure of the training program (Miner, 1965; Tosi and Dunnock, 1967; Campbell, Dunnette, Lawler, and Weick, 1970; Miles and Biggs, 1979). The evaluative survey of such needs is almost a must before designing training programs. It also has to be cautious that not every problem or need could be solved or satisfied by particular training program; only those involve with personnel knowledge, skills and attitudes that can be treated by training.

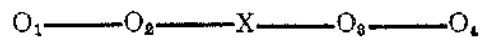
The evaluation of training program is another big shortcoming of training for development. Most of the time, it has been carried out in order to find the effectiveness of the "program" itself rather than the most needed "impact" of the training program. Baumgarte (1973) used sixteen dimensions of criteria to evaluate the effectiveness of management development programs. Data came from the participants of seventeen different management development programs in India. Still, he could go only as far as the "attempt to apply" dimension.

Rizzo (1967), pp.81-82) suggested a more plausible approach to evaluation of management development training program. Beside evaluating changes in participants' knowledge, attitudes, and technical and human relations skills, attempt should be made to evaluate changes in participants' performance in working situation as well as changes in the performance of participants' subordinates. Along this approach, Zeira (1974) concluded that the evaluation of management development training program should be done continuously in three steps.

1. Evaluation during training session
2. Evaluation at the end of training program
3. Evaluation in working situation after the program

A Quasi-Experimental Design

Training program as a means of producing changes could be regarded in research terminology as a "treatment". The creation of appropriate treatment and the evaluation or measure of the results of such treatment can also be done through an adapted time series quasi-experimental design. According to Campbell and Stanley (1963), let O_i be a series of observation where i equals to any desired number and X be a treatment, a simple model of quasi-experimental design is depicted below.



Reading the model with regard to management development training program, the O_1 to O_4 are a series of observation or evaluation whereas the X is the training program. The O_1 is in fact an evaluative survey of working situation in order to identify problems to be solved and needs for improvement. Informative results of this evaluative survey are fed into the design of training program content and techniques. The O_2 is then the pre-program evaluation of participants' knowledge, skills and attitudes just before the training program starts.

The X represents the deliberately designed training program to be introduced to the participants. Again, the O_3 is the post-program evaluation of participants' knowledge, skills and attitudes at the end of the training program. By comparing the O_3 with the O_2 , the effectiveness of the program in terms of changes during the session is revealed. Nevertheless, what ultimately expected is the impact of training program upon the participants' working situation. The O_4 is therefore carried out some times after the program; and when comparing with the O_1 , the successfulness or failure of total efforts is realized.

The main objectives of this research is to design and evaluate a management development training program based on the adapted time series quasi-experimental design elaborated above. It is also expected to add up to the improvement of knowledge and practice of training program evaluation as well as the management development efforts. An underlining hypothesis, although this is not a hypothesis-testing research, is that a training program, if appropriately designed, should produce changes not only in the session but in the working situation as well.

Method

As a part of total reorganization scheme, the Organization of Rubber Replantation Aid Funds (ORRAF) wanted to introduce management training for its provincial high level personnel for the first time in 1978. A training advisor was brought in through the help of UNDP/DTCP and in cooperation with NIDA to design and operate the programs.

The Subjects

The ORRAF has its central office located in Bangkok and twelve provincial offices situated in the South (10) and in the East (2). In each provincial office, there are one Provincial Office Head (POH) and two Assistant Provincial Office Heads (APOH) one for operation and one for administration. Immediate subordinates of APOH are Unit Heads (UH). The subjects are therefore 12 POH and 24 APOH who are going to participate in the programs. In the last phase, however, 48 UH, two under each APOH, will also be interviewed.

The average age of POH is 44. 17 years ranging from 37 to 48. All of them but one hold bachelor degree in agriculture. Over a half of POH have worked for ORRAF about 18 years (mean=17.08). APOH, on the other hand, age on the average 39.67 ranging from 34 to 59. They have worked for ORRAF between 11 to 18 years with a mean of 14.08. A half of them (APOH for operation) who have been APOH for some times hold bachelor degree in agriculture while APOH for administration who have just been promoted from provincial office treasurer hold certificate in accountancy.

The First Observation

The first observation could be equated with the training needs identification effort. After a series of discussion with personnel of ORRAF's central office and of UNDP/DTCP, the training advisor informally and unstructurally interviewed POH, APOH and UH of three provincial offices in the South on September 13-16, 1978. The main purposes of such interviews were to observe the working atmosphere as well as to gain knowledge about existing and potential managerial problems. It was found that some problems might never be resolved by training because they involved working system and procedural regulations.

Information obtained from those interviews was taken back to be discussed with ORRAF's and UNDP/DTCP's coordinators. It was then agreed that there would be two management development workshops, one for POH and the other for APOH. Based upon current managerial problems identified and potential needs of ORRAF in the future, the program schedule was designed as shown in Figure 1.

The Second Observation

In order to prepare a base-line for evaluating change created by the workshops, the second observation or the so-called pre-test was carried out by requesting the participants to fill out Questionnaire Form A early on the first day of the workshop. In this questionnaire, information about participants' expectation and knowledge related to some key management functions were investigated. These information were somewhat subjective by nature.

The Treatment

The workshop schedule in Figure 1 was regarded as the treatment and was equipped by two facilitators who were present together through-out the session. For conceptual learning of management functions and techniques, lecturette and discussion were devised. Case analysis on management functions and exercises on motivation, leadership, role understanding as well as human relations helped in creating experiential learning for participants. Two films were shown in order to illustrate and summarize what had been learned at different stages. Informal discussion with facilitators were carried on even during breaks and off-hours. It was found that residential workshop was favorable and fruitful.

Figure 1

Management Development Workshop
At Villa Navin, Pataya
March 5-9, 1979 for POH
March 26-30, 1979 for APOH

Day/Time	08.30-10.00	10.00-10.30	10.30-12.00	12.00-13.00	13.00-14.30	14.30-15.00	15.00-16.30	Closing Ceremony
Monday	Opening Session	Coffee Break	Management Functions	Lunch Break	Policy, Planning & Decision	Coffee Break	Exercises	Analysis and Conclusion
	Managerial System		Authority Duty Responsibility Accountability		Film : Managing in a Crisis		Exercises	
Tuesday	Position and Role Theory		Motivation Theory		Communication		Leadership	
Wednesday	Managerial Styles		Cooperation		Film : Blowing Hot and Cold		Exercises	
Thursday	Coordination		Discussion		Exercises			
Friday	Presentation of Self-Constraints							
								Evenings open for self-constraints preparation

The Third Observation

Late on the last day of the workshop, participants were requested to fill out two set of questionnaire, Questionnaire Form B and Questionnaire on Organizational Variables. Questionnaire Form B was very much like Questionnaire Form A for the sake of comparison. Information about the workshop itself such as the way it was conducted, facilities, length time, quality of facilitators and the likes were added in Questionnaire Form B.

Questionnaire on Organizational Variables was taken from Rensis Likert's Profile of Organizational Characteristics (Likert, 1967, pp. 197-211). The analysis of this data was in accordance with Likert's Four Management Systems, i.e., System 1, Exploitive Authoritative (scale 1-5); System 2, Benevolent Authoritative (scale 6-10); System 3, Participative (scale 11-15); and System 4, Participative Group (scale 16-20).

The Fourth Observation

In order to obtain information on the impact of the workshop upon working situation, the participants were allowed to work in their offices for about five months. Then the training advisor went back to informally interview POH, APOH and UH as well as to observe working atmosphere in the same three provincial offices in the South on September 2-5, 1979. In addition, all POH and APOH in twelve provinces were asked to fill out Questionnaire Form C dealing with their perception about personal task performance and interpersonal relationship with superiors and subordinates and again Questionnaire on Organizational Variables. Questionnaire Form D was also distributed to 48 UH. This last set of questionnaire dealt with the UH's perception about their own task performance and their superiors' interactive behavior and task performance.

Results

Right after the workshop, it was found that the participants had accumulated knowledge about management functions and techniques; their ways of thinking were more systematic and most of their expectations were satisfied. Moreover, the participants expressed satisfaction on the workshop content, exercises, facilities and facilitators. Some of them even needed longer program.

Participants' Perception of Change

The investigation of working situation a full year apart with the workshop session in between resulted in quite an interesting change. All POH and most APOH perceived that they could apply their experiential learning in the workshop to working situation; most of them indicated that they could even "mostly" applied such learning (55.56% of POH and 65.22% of APOH, Table 1).

Table 1 POH's and APOH's perception about changes

Characteristics of Changes	POH		APOH	
	N	%	N	%
Application of experiential learning				
Mostly	5	55.56	15	65.22
Some	4	44.44	6	26.09
Relationship with co workers				
Improved	8	88.89	14	60.87
Remained	1	11.11	9	39.13
Coordination and cooperation with superior				
Smoother and more flexible	6	66.67	8	34.78
Same as usual or worse	3	33.33	15	65.22
Feedback on good performance				
Received	4	44.44	7	30.43
Never received	5	55.56	16	69.57
Problem solving procedures				
Mostly changed	4	44.44	6	26.09
Mostly unchanged	—	—	3	13.04
Equally changed and unchanged	5	55.56	14	60.87
Performance of subordinates				
Improved	3	33.33	11	47.83
Same as usual	4	44.44	9	39.13
Work with doubt	2	22.22	3	13.04
Worth of the workshop				
More than worthwhile	1	11.11	7	30.43
Worthwhile	7	77.78	10	43.49
Less than worthwhile	—	—	4	17.39
No answer	1	11.11	2	8.69

Regarding relationship with colleagues and co-workers, most of POH (88.89%) saw that it had been much improved while only 60.87% of APOH said so. Relationship with superior in terms of coordination and cooperation was not that good; 66.67% of POH and 34.78% of APOH perceived the relationship with superior in that regard "smoother and more flexible."

Recognition of good performance was still problematic although it had been improved somewhat. For feedback on good performance from superior, 44.44% of POH and 30.43% of APOH reported that they began to receive it.

A very satisfactory phenomenon was concerned with the participants' "problem solving procedures." All POH indicated that they changed problem solving procedures (44.44% mostly changed, 55.56% equally changed and unchanged) while almost 90% of APOH changed their ways of problem solving (26.09% mostly changed, 60.87% equally changed and unchanged).

Table 2 UH's perception of changes

Characteristics of Changes	UH	
	N	%
Change in superior's performance		
Obvious change	3	6.82
Some change	35	79.55
No change	6	13.63
Your performance is smoother and more flexible		
True	23	52.27
Not-true	12	27.27
Uncertain	9	20.45
Superior better understands yourself and your work		
Agree	27	61.36
Disagree	6	13.64
Uncertain	11	25.00
You are now well informed about superior's plan		
Agree	24	54.55
Disagree	6	13.64
Uncertain	14	31.81
Superior now makes better decision		
Agree	23	52.27
Disagree	5	11.36
Uncertain	16	36.37
Superior is more responsible and better uses authority		
Agree	29	65.91
Disagree	5	11.36
Uncertain	10	22.73
Superior improves human relations and leadership		
Agree	21	47.73
Disagree	10	22.73
Uncertain	13	29.54
Working atmosphere is much improved		
Agree	27	61.36
Disagree	7	15.91
Uncertain	10	22.72

The performance of participants' subordinates was viewed to a certain extent to be improved although there were some who indicated that their subordinates were performing in doubt after they came back from the workshop.

In sum, quite a majority of them saw the worth of the workshop. Only 17.37% of APOH felt that the workshop was less than worthwhile.

Perception of Participants' Subordinates

Any changes initiated and perceived by the participants should well be perceived by those involved in interactions and received the impact. Table 2 illustrates eight characteristics of changes as perceived by UH, all of which are quite encouraging because those changes are referred to differences between the before and the after workshop situation.

Most UH (79.55%) saw "some changes" in superior's performance while the other 6.82% detected "obvious change," although no specific characteristic of performance was indicated. In relation to changes in superior's performance, however, a little over half of UH (52.27%) felt that their task performance was smoother and more flexible. About two-thirds of UH also felt that superior, after participating in the workshop, better understood themselves and their work. This might be because 54.55% of UH perceived that they were then well informed about superior's plan of work.

Other perceived changes were concerned with some managerial functions performed by UH's superior. After coming back from the workshop, 52.27% of UH saw superior then made better decisions; and 65.91% of them agreed that superior was more responsible and better used authority. Regarding human relations and leadership of superior, 47.73% of UH saw them gradually improved.

All in all, almost two-third of UH felt that working atmosphere was much improved after superiors, e.g., POH and APOH, had participated in management development workshop and came back to work for a while.

Impacts Upon Organizational Variables

The last piece of information is concerned with opinions of POH and APOH in relation to organizational variables. Eight variables have been scrutinized in accordance with Likert's Four Management Systems. The situation before and after workshop as well as the changes regarding those organizational variables are presented here.

1. The Situation Before the Workshop. Opinions about organizational variables of both POH and APOH before the workshop were already in System 3, i.e., participative (Figure 2). POH maintained opinions at higher level in System 3 than APOH about all variables but two, "leadership processes" and "performance goals and training." The differences are significant for the following variables :

- a. Character of motivational forces
($t = 2.12$, $df = 34$, $p < .025$)
- b. Character of communication process
($t = 2.75$, $df = 34$, $p < .005$)
- c. Character of interaction influence
($t = 1.68$, $df = 34$, $p < .05$)
- d. Character of control processes
($t = 1.63$, $df = 34$, $p < .1$)

2. POH's Opinions Before and After the Workshop. The comparison of POH's opinions about organizational variables between before and after the workshop showed a trend of improvement in all variables except "character of control processes" and "performance goals and training" (Figure 3). The differences of opinions are not significant and still in System 3. If allow a longer period of time for performance after the workshop, some of the differences might be significant given the trend as it is.

3. APOH's Opinions Before and After the Workshop. The comparison of APOH's opinions about organizational variables between before and after the workshop is somewhat different from that of POH's. It as well showed a trend of improvement in all variables but "leadership processes" and "character of decision making process" (Figure 4). Nevertheless, the differences of opinions are not significant.

4. The Situation After the Workshop. POH's and APOH's opinions about organizational variables after the workshop were still in System 3 (Figure 5). POH expressed opinions at even higher level than APOH about all variables except "character of control processes" and "performance goals and training." The differences of opinions are significant for the following variables :

- a. Leadership processes
($t = 1.41$, $df = 28$, $p < .1$)
- b. Character of communication process
($t = 1.89$, $df = 28$, $p < .05$)
- c. Character of interaction influence
($t = 2.17$, $df = 28$, $p < .025$)
- d. Character of decision making process
($t = 1.74$, $df = 28$, $p < .05$)
- e. Performance goals and training
($t = 2.79$, $df = 28$, $p < .005$)

Figure 2 Opinions About Organizational Variables of APOH Before and After the Workshop

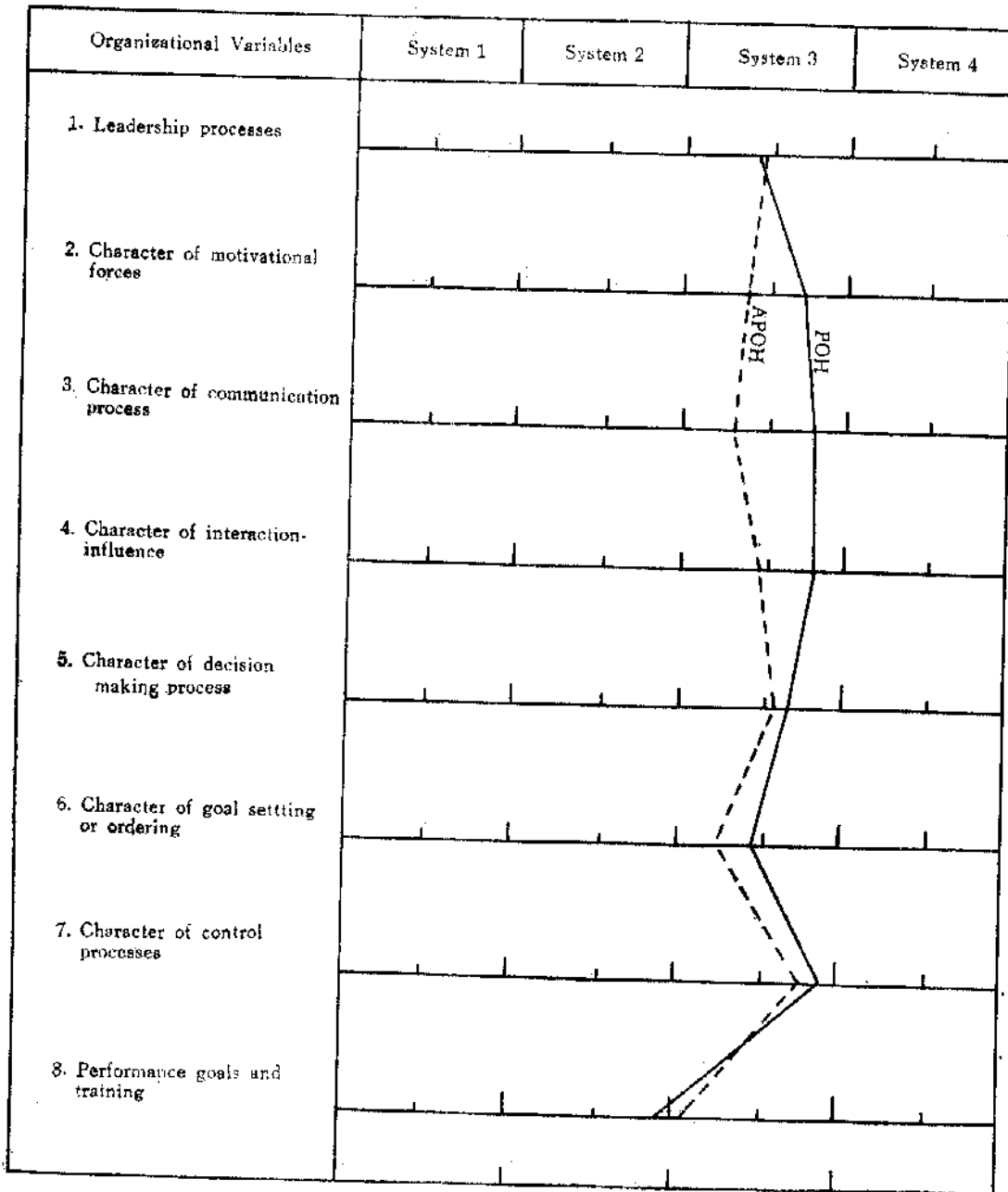


Figure 3 Opinions About Organizational Variables of POH Before and After the Workshop

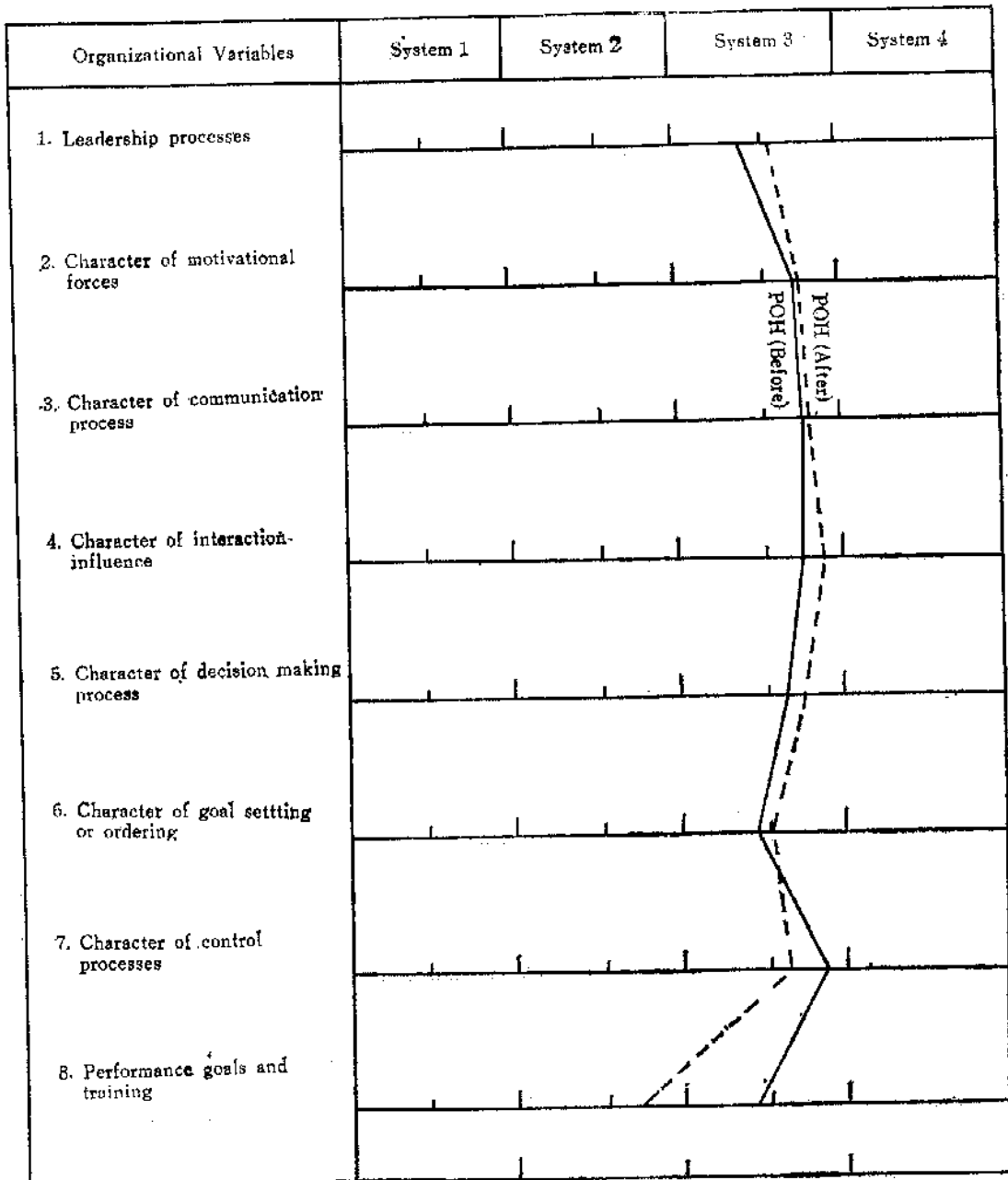


Figure 4 Opinions About Organizational Variables of POH and APOH After the Workshop

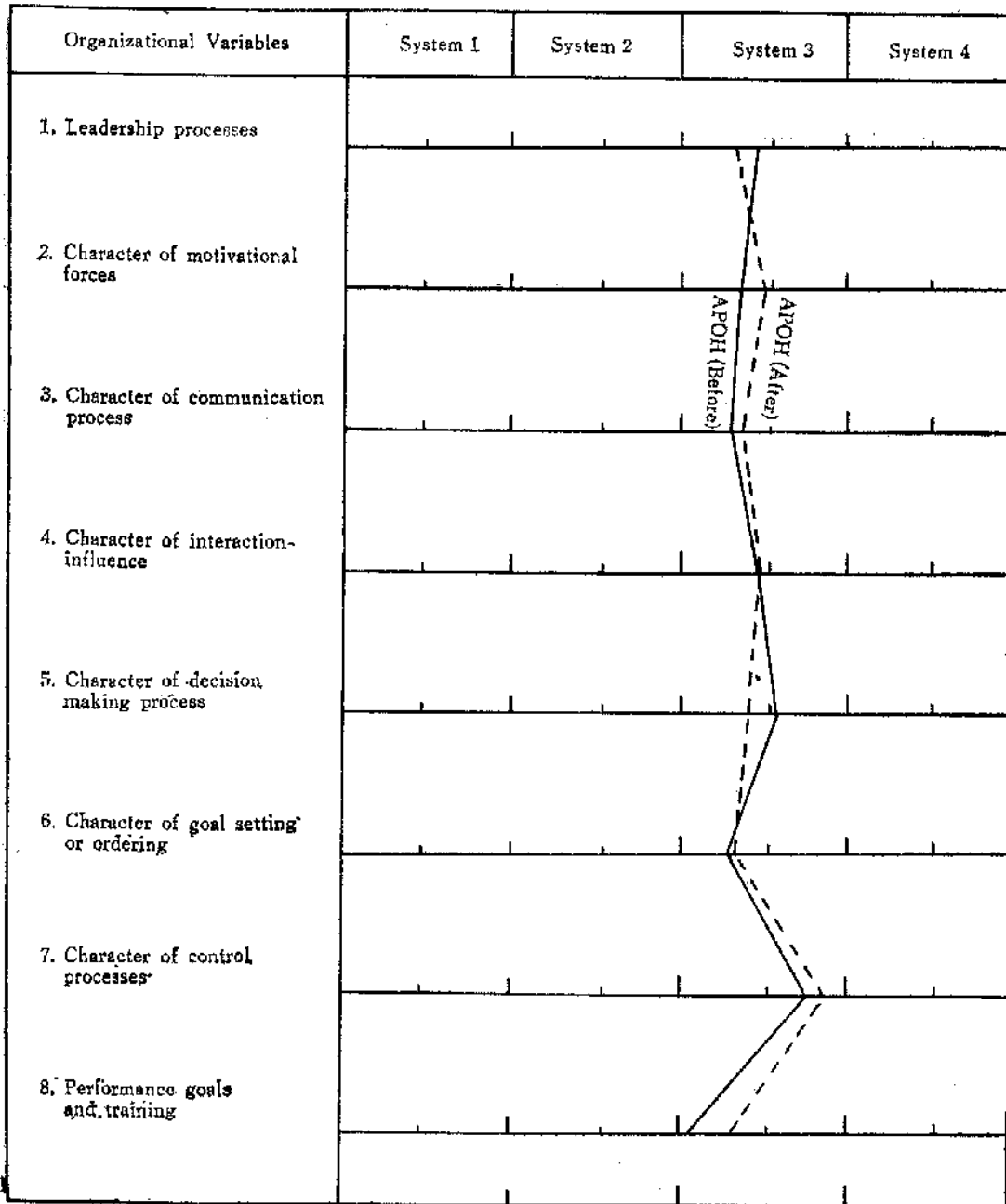
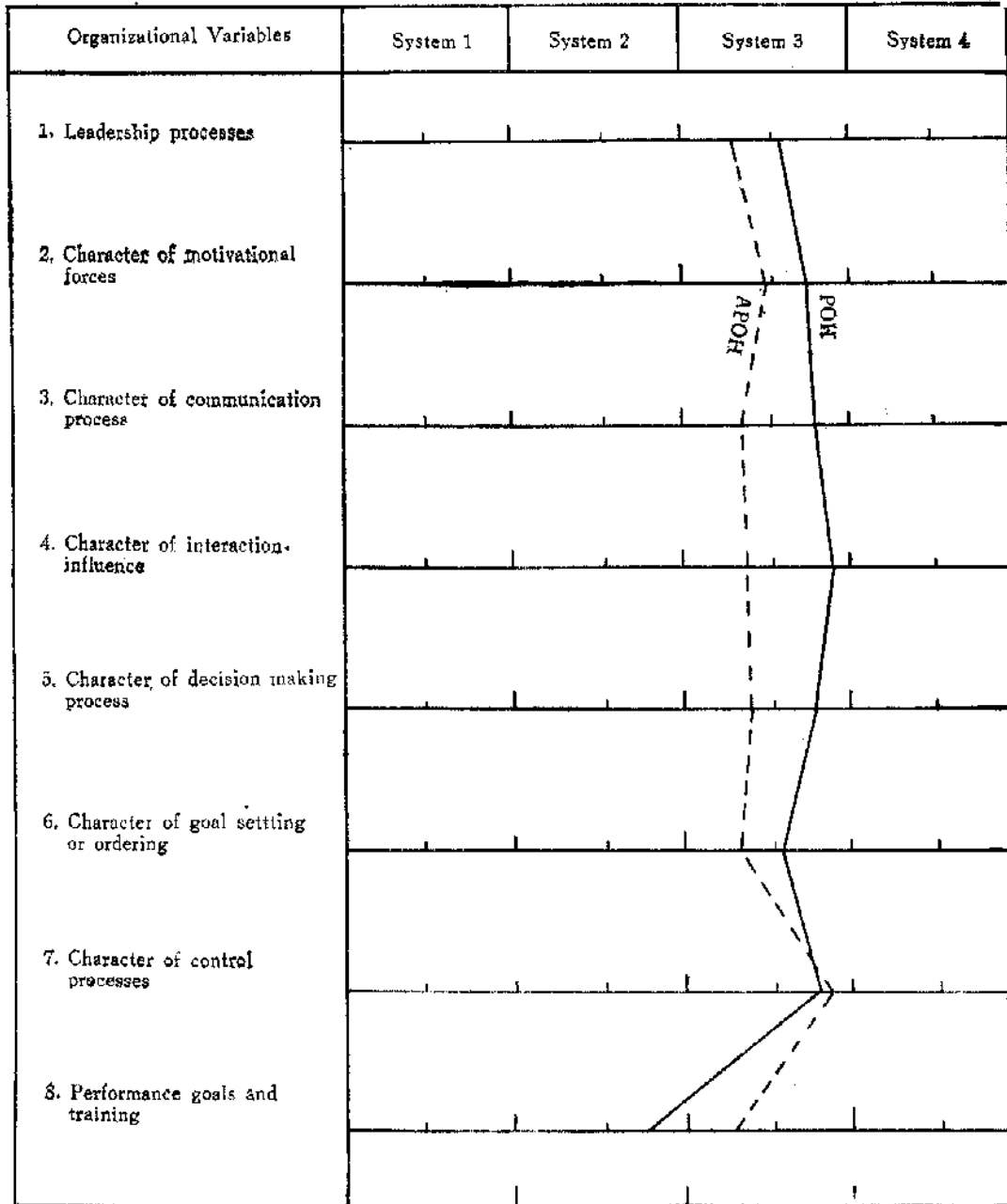


Figure 5 Opinions About Organization Variables of POH and APOH Before the Workshop



Discussion

Management development efforts of any organizations will inevitably be geared toward management development training program. According to our training and consulting experiences, the preparation of appropriate training program and training program evaluation scheme seem to be very problematic. An attempt to overcome such problems has been proposed and tried for the ORRAF's provincial office high level officers.

Most of the times, trainers take it for granted about the subject content as well as training techniques to be incorporated in the management development training program. What the managers should know in the view of trainers of course, have been given very high priority in the program. It is all right to do so, only if trainers clearly identify the point of emphasis in the what should be known.

The process of problem or "training need" identification has to be well planned. In fact, it is the process of organizational diagnosis to find out the overall problems; and, upon careful analysis, problems that can be resolved by training efforts are identified. This process is an initial phase of applying a quasi-experimental design to prepare and evaluate the management development training program. What we have learned from the present research considerably showed that the design could and should be the approach of any training program.

Since management development efforts are more or less continuous activities, the quasi-experimental design ought to be in the same manner. For instance, results of the evaluation in the last phase together with the next round of organizational diagnosis will be a valuable input into the preparation of the following training programs. Otherwise, the whole efforts would be less effective because of the on again/off again practice.

It should be noticed that the criteria and dimensions for evaluation are as well contributing to the meaningfulness of results. As seen in the results of the present research, if we take only the pre- and post-test of the management development workshop, the best result would be only changes in knowledge and some skills which may or may not affect the working situation. If the subject content of the workshop has been well prepared, it could be assumed that they may. Changes perceived by the participants after a period of working can confirm the assumption. The confirmation will be much stronger if such changes are in congruence with what their subordinates perceived. However, the real changes, if any, are in those organizational variables rather than the perceived ones. The congruence among these multi-criteria and multi-dimensions can therefore be a very good indicator of training program effectiveness.

The overall results of this present research are in a very satisfactory trend; although changes in organizational variables are not statistically significant, but they are consistent with other dimensions for evaluation. The phenomenon reflects the appropriateness and effectiveness of applying a quasi-experimental design to prepare and evaluate this particular management development training program of ORRAF. Again, it can be tentatively concluded that the design could and should be applied to any training endeavors.

REFERENCES

- Agathon, John C. "Management Development." In Joseph J. Famularo (Ed.) *Handbook of Modern Personnel Administration*. New York : McGraw-Hill, 1972.
- Baumgartel, Howard. "Analyzing the Effectiveness of Management Development Programs." In S. Neelamegham (Ed.) *Management Development : New Perspectives and View Points*. Delhi : Kalyani Publishers, 1973.
- Burack, Elmer H. *Strategies for Manpower Planning and Programming*. Morristown, N.J. : General Learning, 1972.
- Campbell, Donald T. and Julian C. Stanley, *Experimental and Quasi-Experimental Designs for Research*. Chicago : Rand McNally, 1963.
- Campbell, John P., Marvin D. Dunnette, Edward E. Lawler, III, and Karl E. Weick, Jr., *Managerial Behavior, Performance and Effectiveness*. New York : McGraw-Hill, 1970.
- Crane, Donald P. "A Dynamic System of Management Development." *Personnel Journal*. V. 51, September 1972.
- Galbraith, Jay R. *Organization Design*. Reading, Mass. : Addison Westey, 1977.
- Gould, Sam. "Career Planning in the Organization." *Human Resource Management*. V. 17, N.1, Spring 1978.
- Hall, Douglas T. *Careers in Organizations*. Pacific-Palisades : Goodyear, 1976.
- Husband, T.M. *Work Analysis and Pay Structure*. New York : McGraw-Hill, 1976.
- Tennings, Eugene E. *Routes to the Executive Suite*. New York : McGraw-Hill, 1971.
- Likert, Rensis. *The Human Organization*. New York : McGraw-Hill, 1967.
- Miles, Wilford G. and William D. Biggs. "Common, Recurring and Avoidable Errors in Management Development." *Training and Development Journal*. V. 33, N. 2, February 1979.

- Miner, John B. *Studies in Managerial Education*. New York : Springer, 1965.
- Rizzo, John R. "The Evaluation of Management Development". In Robert J. House. *Management Development : Design, Evaluation and Implementation*. Ann Arbor : Bureau of Industrial Relations, the University of Michigan, 1967.
- Somerville, James D. "A System Approach to Management Development." *Personnel Journal*. V. 53, May 1974.
- Tosi, Henry L., Jr. and R.C. Dunnock." Organization and Manpower Planning." In Robert J. House. *Management Development : Design Evaluation and Implementation*. Ann Arbor : Bureau of Industrial Relations, The University of Michigan, 1967.
- Van Maanen, John. *Organizational Careers : Some New Perspectives*. New York : John Wiley, 1977.
- Walter, James W., "Does Career Planning Rock the Boat?" *Human Resource Management*. V. 17, N. 1, Spring 1978.
- Zeira, Yoram. "Sequential Evaluation of Management Development." *Business Horizons*. V. 17. April 1974.