

Effectiveness of a Strategic Management Development Program

Hamid Khan
Northern Kentucky University

This paper reports the results of a management development program for 98 engineering and engineering technology managers. Managers' ratings of the importance of five management dimensions and their self-rated competence in these five dimensions were assessed prior to and after the completion of a one-week management training program. The results indicate that management development programs for technical personnel can be effective if executive development training programs focus on improving strategy, productivity, leadership and global competition in the cognitive, affective and psychomotor domains by addressing their problem solving skills, leadership skills, decision making skills, managerial skills, and global competitiveness skills.

Description and Goals of the Management Development Program

The Purdue University Engineering and Management Program was a week-long program designed to improve the performance of engineers and engineering technologists (ET professionals) and was delivered as a workshop for leadership effectiveness. According to the program brochure, "The program intended to generate in participants, positive effects by instilling leaning skills, by changing analytical perceptual behavior, and by producing results in a favorable environment as an outcome of leadership dynamics."

Participants completed self-assessment instruments that provided insight into their learning, communication, leadership, decision-making, and conflict resolution styles. Participants exchanged views with other corporate executives, university professors of management and engineering, university officials, and leaders in higher education. Participants were exposed to a variety of reading materials and case studies, which enabled them to examine pertinent engineering, personnel and management issues.

Criteria Used to Evaluate the Program

The evaluation of training effectiveness was strategically designed to tap four levels of training effectiveness: reaction, learning, behavior and results accruing due to the program. This program evaluation and review technique used the following instruments for the four-stage evaluation process.

Measures of Reaction

Participant reactions to the training program were assessed through course and instructor evaluations completed at the conclusion of the program, qualitative and descriptive responses to some open ended questions, and a composite program evaluation

Measures of Learning

Participants' learning was measured by Kolb Learning Skills Inventory (LSI). The LSI was administered both pre- and post-training. This was an assessment tool based on experiential learning theory, which identifies preferred learning styles, and explores the opportunities that different styles present for problem solving, working in teams, resolving conflict, and communicating effectively at work. Four learning styles of the management training participants were analyzed: Diverging (combines preferences for experiencing and reflecting), Assimilating (combines preferences for reflecting and thinking), Converging (combines preferences for thinking and doing), and Accommodating (combines preferences for doing and experiencing).

Measures of Behavior

Changes in perceptions of importance and competence of management skills pre, post, and comparison were measured. Forty-two questions linked to key result areas (KRA) were asked in a five-point Likert scale. The KRAs were Organizational Leadership, Human Resource Management, Financial Management, Decision Making, Strategic Planning, Negotiation and Conflict Resolution, and managerial Communication

Measures of Results

Changes in leadership adaptability were measured prior to training and again after training. Training effectiveness was measured using a survey administered three months after the manager returned to the realities of job situations. The difference between the pre and three-month post scores was the impact of the training program. The measure of result of this training was to see how management-training participants migrated from low level of leadership style to high level of leadership style, going from telling→ selling→ coaching→ delegating. These styles had a mix of task and relationship dimensions.

Training Participants

Participants in the training program were 98 engineering managers from different organizations, who attended the management training program in April, 1995. The participants included:

- 10% women and, 90% men
- 9% African American, 13% Hispanic, 67% White, and 11% Asian American
- A wide range of ages (29-57) with a mean of 36

Training Effectiveness

- As shown in Table 1, participants in the training program rated all skill areas as being more important after being trained than they did prior to training.
- As shown in Table 2, participants rated their competency in all skill areas as being higher after training than it was prior to training.
- As shown in Table 3, participants moved from a telling/selling leadership style prior to training to a participating/delegating style following training.

Table 1: Perceived Importance of Leadership Skills

Skill Area	Prior to Training		After Training		Difference	<i>t</i>	<i>p</i> <
	Mean	SD	Mean	SD			
Leadership/Organization							
Participants	3.43	.52	4.30	.38	.87	-3.18	.002
Nonparticipants	3.72	.50					
Human Resource Management							
Participants	4.11	.41	4.30	.38	-.19	-4.98	.001
Nonparticipants	3.55	1.02					
Decision Making							
Participants	3.33	.59	4.12	.53	-.89	-1.98	.050
Nonparticipants	3.54	.60					
Strategic Planning							
Participants	3.42	1.05	3.93	.87	-.51	2.01	.047
Nonparticipants	3.02	1.07					
Negotiation and Conflict Resolution							
Participants	3.51	.75	3.95	.89	-.44	-3.14	.002
Nonparticipants	2.84	.95					
Managerial Communication							
Participants	4.25	.82	4.49	.60	-.25	-3.24	.002
Nonparticipants	3.89	.62					

Table 2: Self-Rated Competency of Leadership Skills

Skill Area	Prior to Training		After Training		Difference	<i>t</i>	<i>p</i> <
	Mean	SD	Mean	SD			
Leadership/Organization							
Participants	3.52	.51	3.91	.43	-.49	-7.13	.001
Nonparticipants	3.71	.50					
Human Resource Management							
Participants	3.14	.79	3.58	.77	-.44	-6.67	.001
Nonparticipants	3.12	.93					
Decision Making							
Participants	2.62	.88	3.08	.99	-.46	-6.10	.001
Nonparticipants	3.53	.60					
Strategic Planning							
Participants	3.39	.58	3.78	.54	-.39	-6.74	.001
Nonparticipants	2.60	.11					
Negotiation and Conflict Resolution							
Participants	2.43	.90	2.90	.96	-.47	-7.53	.001
Nonparticipants	2.13	.78					
Managerial Communication							
Participants	3.57	.80	4.08	.70	-.51	-5.52	.001
Nonparticipants	3.21	.88					

Table 3: Change in Hersey and Blanchard Leadership Styles					
	Hersey and Blanchard Leadership Style				
Style Prior to Training	Telling	Selling	Participating	Delegating	N
Participants	31.2%	23.4%	11.7%	33.8%	77
Control Group	10.9%	40.0%	38.2%	10.9%	55
Faculty	0.0%	45.5%	54.5%	0.0%	11
Style After Training					
Participants	0.0%	20.8%	20.8%	58.4%	77
Control Group	10%	42%	40%	8%	55

Table 4: Change in Kolb Learning Styles					
	Kolb Learning Style				
Style Prior to Training	Diverger	Assimilator	Converger	Accommodator	N
Participants	22.1%	35.1%	27.3%	15.6%	77
Control Group	18.5%	27.8%	38.9%	14.8%	54
Faculty	54.5%	9.1%	18.2%	18.2%	11
Style After Training					
Participants	18%	25%	36%	21%	77
Control Group	18%	29%	40%	13%	55

References

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Author Notes

- Comments about this article should be addressed to:
Dr. Hamid Khan
Northern Kentucky University
Master of Technology Programs
Highland Heights, KY 41099
khanh@nku.edu
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