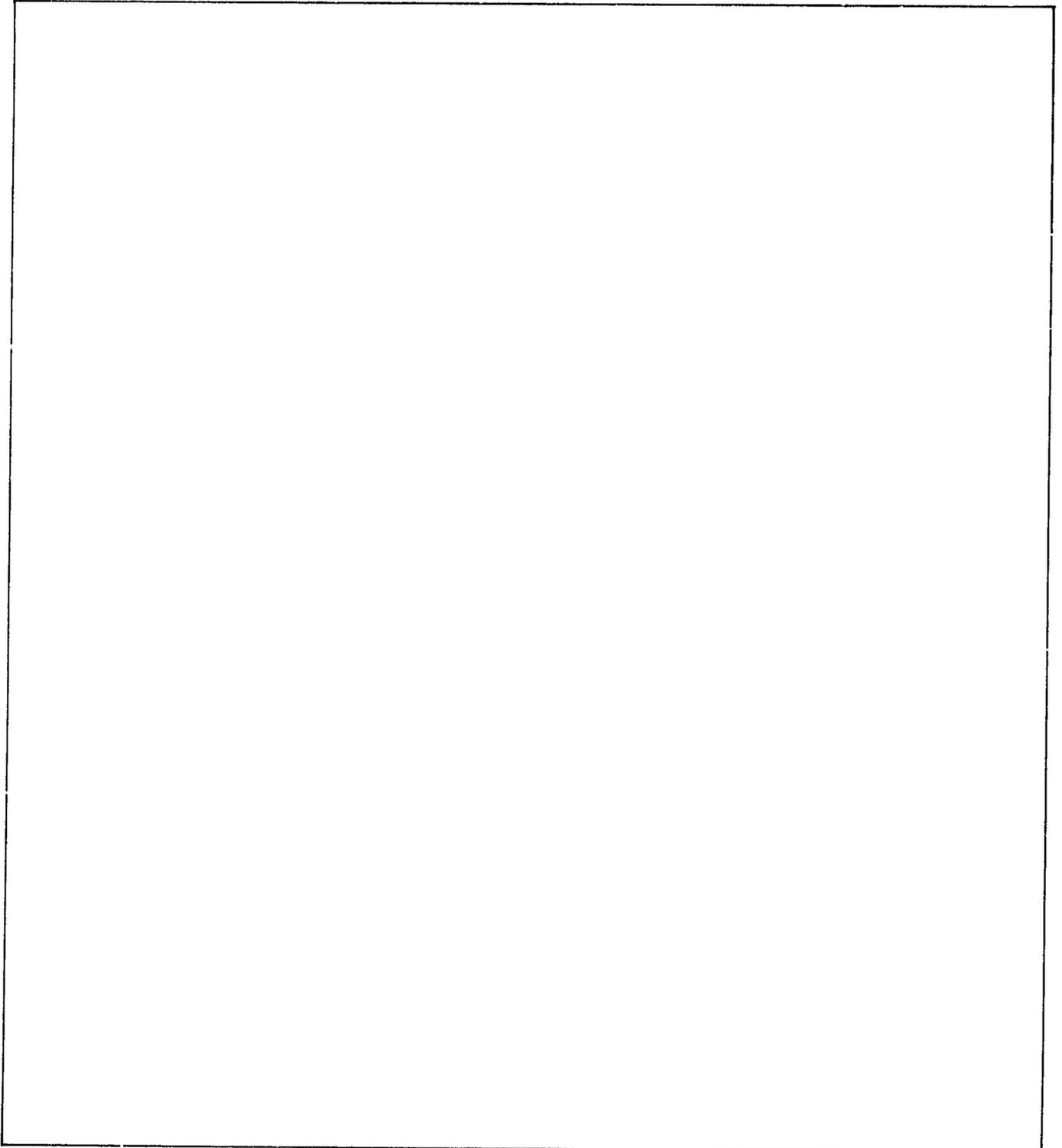


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TRANSFER OF MANAGEMENT TECHNOLOGY
TO LESS DEVELOPED COUNTRIES*

by**

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*This study is based on the authors' experience with a management education project for the country of Egypt. This project was sponsored by the U.S. Agency for International Development (U.S. AID). A follow-up to this project is presently being conducted, which is also sponsored by U.S. AID.

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In today's rapidly changing economic, political, social, and legal environments, management development is an essential ingredient of any economic development program. Most of the problems the less developed countries¹ (LDCs) of the world are facing could be traced to shortage of capital, or lack of technical know-how, or lack of managerial know-how, or a combination of these three factors. Unfortunately, the latter factor is often afforded low priority in the development plans of most LDCs. The need for management development in the LDCs can hardly be overstated. It is imperative for these countries to attain high quality management for the efficient allocation and utilization of their scarce resources. Resources are wasted and a country is poorer if managers are not effective.

This study is based on the authors' experience with a U.S. Agency for International Development (U.S. AID) sponsored management education program for the country of Egypt.² The program took place over a fifteen month period, from October 1978 to December 1979. Presently the authors are also involved with a follow-up for the program.

In 1973, the government of Egypt inaugurated its "Open Door" policy. It was declared that this policy of economic liberalization would become the official economic policy of the government. The policy statement stressed the need to revive the private sector, not as a substitute for the public sector, but as a strong partner that would assist in speeding the process of economic development. In addition, the statement indicated that the government would offer incentives to encourage the inflow of foreign investment and technology.

Thus, a need to develop a cadre of Egyptian managers who would be able to operate effectively in the more competitive environment envisioned under the "Open Door" policy was perceived.

The objective of this paper is two-fold. First the authors will present an overview of the program. Second, some findings regarding the impact of the program on the participants' knowledge of modern business management, supervisory attitudes, entrepreneurial abilities, and managerial styles are discussed. These findings are based on pre and post-training data which were collected from the 96 participants. Additional data were collected during the follow-up activities in September 1980.

THE PROGRAM

The program originated from the Joint Egypt-U.S. Business Council (JBC). The JBC is composed of U.S. and Egyptian business leaders, with the objective of promoting economic cooperation between the two countries. Egypt's "Open Door" policy was rapidly changing the business environment in which managers used to operate. Early in the JBC's deliberations, it was determined that, in order to implement the policy of economic liberalization, a new type of Egyptian manager would be needed. This person would have to have skills in modern management, business policy formulation, and business planning. It was felt that because the U.S. had a competitive business environment, the conditions in the U.S. nearly approximated elements of the new environment most desired by Egypt in the future. Hence, it was most appropriate that Egyptian managers be familiarized with modern management concepts and techniques in the environment in which they were applied.

For the purpose of this paper, the authors distinguish between training and development. Management training can be viewed as a short-term activity designed to satisfy an identifiable need. Management development, however, can be viewed as a long-term activity designed to produce

effective managers. Thus, a series of well planned training activities can lead to the development of managers.³

The Middle Management Education Program (MMEP) for Egypt was a training project. It was a step in the direction of a management development program. It was not an organizational development program. The stated objective of the MMEP was to familiarize a specified number of middle-level Egyptian managers with modern management principles, concepts, techniques, and practices.

Program Design

The program design called for a mix of theoretical and practical application components. The program was to provide the participants with a broad mastery of the fundamentals of the functional areas comprising modern business management, international business management, and sharpen their appreciation of the tools required for decision-making. The practical application phase would build on the fundamentals and move the participants toward a more advanced professional knowledge of modern business practices. This knowledge would be imparted through two vehicles: (1) a series of specially tailored exercises utilizing the case study approach, and (2) a carefully orchestrated internship program through which participants were exposed to the practice of management in actual operating environments.

The program consisted of three modules. Module 1 was a two-week "English-orientation" phase which took place in Egypt. Module 2 was the "concepts-practical application" phase which involved six weeks of classroom training at SIU-C, and six weeks of on-site training at U.S. companies. Module 3 was the "review and evaluation" phase which took place in Egypt over a one-week period. The distribution of the twelve weeks in the U.S. was as follows:

Weeks 1 - 4	At SIU-C
Weeks 5-7	On-site at U.S. companies
Week 8	At SIU-C
Weeks 9-11	On-site at U.S. companies
Week 12	At SIU-C

While the relevancy of an "American experience" to Egyptian managers was questioned based on the premise that management is culturally bound, so far the findings, which are discussed later in this paper, support the concept of this program. The results indicate that the participants have developed new skills and appreciation for the management practices they observed and studied during their training.

Participants' Selection

The process started by establishing selection criteria. They were: (1) level of responsibility, i.e., being a middle-level manager, (2) college graduate, (3) English proficiency, (4) age-- from 35 to 45 years old, and (5) potential for top management positions. Later the age requirement was relaxed, i.e., lowering the minimum for managers from the private and joint venture companies as opposed to those from public sector companies. Applicants who passed the initial screening were given the Michigan English Test. Those managers who achieved a predetermined minimum score or better on the written test were interviewed by the SIU-C faculty. During the interview, a nominee was rated on his/her oral skills, basic abilities and potentials, personal characteristics, and character traits.

The authors found the interview to be the most valuable segment of the selection process. The program placed heavy emphasis on the oral language skills of potential participants. Thus, it was highly probable that potential participants who otherwise would be extremely capable and whose development could have a major impact on their organizations, were eliminated from consideration because of their English deficiency. However, the English requirement was necessary if the participants were to have meaningful internships at U.S. firms.

The age requirement was not based on who would get the most out of the program. It was instituted for two reasons: (1) the length of time it takes a college graduate to reach a middle management level in Egypt, and (2) to allow for the maximum remaining working years of a manager. In short, most of the middle-level managers in Egypt would fall within the 35-45 age bracket.

Classroom Experience

The "English-orientation" phase of the program was designed to sharpen the participants' oral skills in preparation for their training in the U.S. The two-week course proved to be beneficial on three counts. First, through discussion of selected topics and invited speakers, the participants received some orientation to life in the U.S. Second, the course gave the participants confidence in expressing themselves orally in English. Third, the common experience helped to develop a fraternal feeling among members of each group before their departure to the U.S.

The classroom portion of the "concepts-practical application" phase was intended to bring the participants to a common level of appreciation for the fundamentals of the functional areas of modern management and the tools required for decision-making. Then it was to move them towards a more advanced knowledge of management practices.

The diverse educational backgrounds of the participants (technical, business, and social sciences) coupled with their diverse professional experiences, made it difficult to bring them to a common level of mastery of the fundamentals of the functional areas of modern management within the program's time constraint. It is quite common in Egypt for a person to be promoted to a managerial position based solely on his/her technical expertise. In addition, this is generally not followed by a management development program for such an individual. This practice is one reason why there is a great need for effective management training and development programs for Egyptian managers.

Cases covering various concepts and techniques in business management were used. They were administered throughout the program to monitor the participants' assimilation of knowledge, their improvement in logical reasoning and decision-making abilities. It is the authors' contention that the use of U.S. or internationally based cases did not appear to limit their value as learning devices in any major way. In instances where differences between U.S. and Egyptian business practices were cited, they served as focal points for discussion of U.S. and Egyptian environmental parameters. It should be remembered that the MMEP was a program in general management. It was a pilot program to be followed by a broader management development coupled with an organization development program.

Furthermore, a management simulation game (Tempomatic IV) was used. This game was very popular among the participants. They appreciated its value as a learning experience, and the fact that for most, if not all, of them it was their first exposure to computer simulation.

On-Site Experience

The internship portion of the program was intended to expose the participants to the practice of management in actual operating environments. Many unforeseen factors such as weather conditions, union contract negotiations, and plant re-tooling created some problems in obtaining an optimal internship experience for each participant.

Generally, the internship coordinator sought to place participants in pairs and in U.S. firms whose operations were related to their own. Both large and small firms were sought. While large firms generally possessed more elaborate and sophisticated equipment and systems, small firms usually provided a better opportunity for the participants to interact with the highest levels of management.

Discussions with the participants led the authors to conclude that the size of the U.S. host firm had no bearing on the benefits they derived from their experiences. The most important factor in the success of an internship was the willingness of the host company's executives to cooperate in a meaningful way.

THE EVALUATION

Throughout the classroom phase of the program, the participants were surveyed and tested for their knowledge of business management and their managerial attitudes. The participants often felt overburdened by the many evaluation instruments, but the authors felt the need to obtain as many measures of their performance as possible.

Demographic Factors

Several demographic factors appeared to influence the experience of the participants. Differences in age, sex, industry, size of firm, and past experience were factors which could be expected to affect the learning process. The factors having the greatest effect, however, appeared to be educational background, business sector (public or private), and breadth of experience.

Many of the participants with engineering or liberal arts backgrounds had never read or been exposed to business management literature and concepts even though they held managerial positions within their firms. For many, the program provided concepts and explanations of events they had experienced but not fully understood in managerial terms. As a group, they probably operated as technical advisors to their subordinates rather than as managers. On this issue, however, the program would probably have been strengthened if the basic management learning process could have been extended over a longer time period with directed readings to help those without a business degree or knowledge of business concepts.

Most of the participants (about two-thirds) came from public sector firms and found many U.S. practices difficult to accept. It is not unusual for Egyptian firms to have several thousand workers in a single facility, and many participants felt uneasiness when placed in U.S. firms with less than one hundred workers. While the smaller firms provided a better opportunity to observe the total operation of a company, many participants felt uncomfortable in that environment. The public sector firms, in particular, are typical of a bureaucratic organization with highly centralized control. Thus, probably the most common comment about U.S. firms was surprise at the degree of participation and the open discussion of management problems among managers at all levels.

Another difference between U.S. and Egyptian managers is the breadth of experience of managers at any given level. While first line Egyptian managers appear technically on a par with their U.S. counterparts and top managers seem well educated with vast experience, the middle management Egyptian participants appear much less experienced. A major factor contributing to this is that many Egyptian managers remain with one firm throughout their careers and rarely have they worked for more than two or three firms. This fact, coupled with the large single factory structure of most Egyptian firms, does not offer managers the opportunity to observe and operate in different managerial organization structures or with different managerial styles.

While this highlights only a few of the differences between U.S. and Egyptian managers, this may serve to show the difficulties present when working with managers of another country and culture. However, on the positive side, these differences can also lead to greater awareness and understanding. The authors experience suggests that cultural differences need to be considered, but do not necessarily inhibit the transfer of management techniques.

Evaluation Instruments Used

Included within the evaluation instruments were tests of business management principles, managerial attitudes, measures of values, supervisory practices, and managerial style. Some of these were standard instruments and others were specially assembled. Instruments dealing with values or style were administered only once during the program, and instruments to measure management knowledge and attitudes were scheduled early and late in the program to determine if changes occurred as a result of the training program. It was not possible to identify whether changes were a result of the on-campus classroom activities or the internship experiences, however, the authors feel that both portions of the program contributed to the changes.

Findings

As might be expected, means increased and ranges narrowed on post-tests as compared to pre-tests. While no attempt was made to compare the participants with U.S. norms, no startling differences or unexpected findings occurred.

Table 1 presents an overview of several important factors which changed during the training period. The general management test developed and used with the first group was quite rigorous as the mean score of 36.3 out of 100 would indicate. Because of opposition from the participants, a post-test was not administered to the first group by the individual responsible. A less intensive test was assembled and administered to the second group, but again the post test was omitted because the participants felt the test was extremely difficult. To attempt to recover from this administrative error, the more rigorous management test was used both pre and post-training with the third group of participants, and the short test was also administered as a post-test.

The correlation of .7938 between the two post-tests, which was significant to .001, indicates the high relationship between these tests and, although we only have pre and post-data on one third of the participants, suggests that the improvement in

TABLE 1
COMPARISON OF PRE-TEST AND POST-TEST KNOWLEDGE
AND ATTITUDE SCORES

<u>Item</u>		<u>n</u>	<u>\bar{X}</u>	<u>Range</u>	<u>Variance</u>	<u>Correlation</u>	<u>> .001 level significance</u>
Management	Pre	63	36.3	68	172	.0669	
	Post	34	69.1	70	223		
Management (short)	Pre	33	61.1	26	49	.7938 ¹	*
	Post	32	51.1	43	90		
Supervisory	Pre	92	26.5	58	128	.5288	*
	Post	96	28.3	56	149		
Entrepreneurial	Pre	96	111.5	66	158	.7077	*
	Post	96	114.5	60	114		
Theory X	Pre	92	40.5	52	114	.3252	*
	Post	95	36.2	40	87		

¹Correlation between Management Post-Test and Short Management Post-Test.

general management knowledge shown for the third group of participants probably applies to the other participants as well.

The supervisory test is a measure of managerial attitudes towards subordinates. The entrepreneurial scale is a measure of some related factors, with entrepreneurial style at the high end of the scale and bureaucratic style at the low end. The theory x score is a measure of managerial attitude with the higher value indicating autocratic style and the lower values participative style. As shown in Table 1, a slight change occurred in the means of each of these instruments. This change is in a positive or more modern and more participative direction. The pre-post correlations of these tests were significant at the .001 level indicating a general stability among participants' attitudes.

Because of a time constraint, the authors were not able to use all of these instruments in the follow-up sessions with the participants. However, the authors used selected questions from the attitude instruments and compared the responses received with those at the end of the training period. Table 2 presents the comparison for a selected few of these questions.

Two patterns appear to emerge from this follow-up analysis. First, the participants appear to be less idealistic and more practical--only 58% would recommend a good worker for promotion outside his/her department now compared to 84% at the end of the training period. Second, the change that is probably more significant is that many participants appear to have changed their attitudes in the period since the completion of the program. While the analysis of these data is not complete, the following are some preliminary findings.

TABLE 2

SELECTED ATTITUDE ITEMS INDICATING CHANGES
FROM PROGRAM TO FOLLOW-UP

What workers think is unimportant so long as they do their jobs well.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>	
Before	29%	6	65	$P_R > T $ 0.017
After	11%	11	78	

What workers do during off hours should be of no concern to employers.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>	
Before	62%	8	30	$P_R > T $ 0.036
After	45%	11	44	

The only guarantee of good work is high pay.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>	
Before	22%	12	66	$P_R > T $ 0.18
After	9%	23	68	

The goals of management and labor are directly opposed and must always be in conflict.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>	
Before	25%	10	65	$P_R > T $ 0.03
After	11%	9	80	

Recommending workers for promotion to even better jobs in other departments.

	<u>Desirable</u>	<u>Uncertain</u>	<u>Undesirable</u>	
Before	84%	6	10	$P_R > T $ 0.013
After	58%	28	14	

Asking workers to comment about the way the company treats them.

	<u>Desirable</u>	<u>Uncertain</u>	<u>Undesirable</u>	
Before	70%	11	19	$P_R > T $ 0.13
After	58%	11	31	

The only way to make sure things get done right is to set up a definite and fixed schedule and never depart from it.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	
Before	11%	38	6	33	11	$P_R > T $ 0.03
After	2%	31	9	52	6	

1. A significant difference in the changes of attitudes among managers from higher and lower technology industries. Automotive, textiles, and engineering consulting managers are more people oriented and participative now, while those in agriculture, construction, and banking have not changed or have become less people oriented.
2. Sixty-seven percent of the participants' supervisors surveyed reported increased work quality since the completion of the training program, and thirty-five percent reported an increased quantity of work.

SUMMARY AND CONCLUSIONS

Egypt's "Open Door" policy was rapidly changing the business environment in which managers used to operate. In order to implement this policy of economic liberalization, management training and development programs would be needed. The stated objective of the MMEP was to familiarize a specified number of middle-level Egyptian managers with modern management principles, concepts, techniques, and practices. The MMEP was a program in general management. It was a pilot project to be followed by a broader management and organization development program.

The findings support the concept of this program. They indicate that the participants have developed new skills and appreciation for the management practices they observed and studied during their training.

While the Egyptian culture dictates that the participants and their supervisors should speak well of the program, the authors have sought and believe they have secured data to support that the participants have become aware of modern management principles, concepts, techniques, and practices. Furthermore, generally the participants have accepted more progressive

attitudes, and most of them have become more effective within their firms.

The authors believe that transfer of management technology is a workable concept. Such a process should focus on adaptability and dealing with various constraints, which may differ from one place to another. Thus, it becomes a matter of negotiating the environment rather than hiding behind a wall of inapplicables.

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FOOTNOTES

1. For the purpose of this study the distinction between developed and less developed countries is based on the International Monetary Fund classification.
2. The program was the Middle Management Education Program (MMEP). Dr. Hussein Elsaid served as the executive officer for the project and Dr. Harold Wilson served as the coordinator. Presently Dr. Elsaid is serving as the director of the Middle Management Follow-Up Program (MMFP), which is also sponsored by U.S. AID.
3. John English and Anthony Marchione, "Nine Steps in Management Development," Business Horizon (June 1977), p. 88.