Assessing Management Education

A Summary of the CEDEP Project

by Robin M. Hogarth

1. Introduction

Although recent years have seen heavy investment in management education programmes, relatively little effort has been made at evaluation. Kane, however, has noted that the time when training and development activities are no longer questioned "appears to be well on its way to passing from a reality to a memory" [1].

Several reasons can be suggested to explain the lack of evaluation studies, for example: (1) "evaluation" is a potentially menacing activity and can easily become a political issue [2, 3, 4, 5]; (2) investment in management education is the observable outcome of a belief in a certain style of management and, as such, "cannot" and "should not" be evaluated; (3) past attempts have been over-ambitious and failed [6]; and (4) given the plethora of management research projects, few researchers or sponsors feel inclined to commit themselves to an area that is so potentially full of traps.

A feeling also exists amongst many management education practitioners that evaluation is not "feasible". However, the field of Evaluation Research has become well established over the last decade. A professional society has been created, handbooks published [7], special programmes are run by universities, methodologies and concepts have become quite sophisticated [8, 9, 10] and empirical investigations have been reported in many applied fields [11].

A further reason for the relative lack of evaluation studies is the failure to conceptualise evaluation appropriately. For example, many practitioners have a desire to compare costs and benefits in the same units, i.e. in monetary terms. Whereas this is understandable, it is excessively narrow in that it equates "value" with money, instead of the more comprehensive concept of *utility*. Now *utility* is a subjective measure of worth and thus, by definition, is not necessarily the same for different people. Nonetheless, this does not mean that individuals cannot assess worth in concrete terms. Indeed, in recent years the development of *multi-attribute utility theory* [12, 13] has demonstrated the practical feasibility of procedures for meaningfully assessing the worth of many complex phenomena, for example: the location of airports [14], energy policy [15], urban planning [16] and priorities for government research expenditure [17]. Why should management education be different?

It is not. The problem is not in assessing value for the effects of management education. Rigorous procedures exist that help such judgements. The problem is to

specify the effects of management education and the probability that they occur.

The view taken here is that specifying the probable effects of management education is easier if one has an understanding of the underlying process and can identify the variables affecting outcomes. Such understanding is most usefully expressed in the form of models, the specification of which has several advantages.

First, models can indicate *why* effects do or do not occur and thus provide information for *improving* programmes. Second, programmes often have unintended as well as intended effects. Models help identify unintended effects which may be as important as those intended. Third, the goals of many management education programmes are frequently not made specific. Models help delimit the kinds of goals different types of programmes can achieve. Fourth, little systematic knowledge exists concerning the process and possible effects of management education. To the extent that evaluation studies also add to understanding these phenomena their "value" is greater than studies which simply set out to prove or disprove the existence of effects [18]. Indeed, the principal difficulty of evaluating management education programmes lies in the lack of appropriate models.
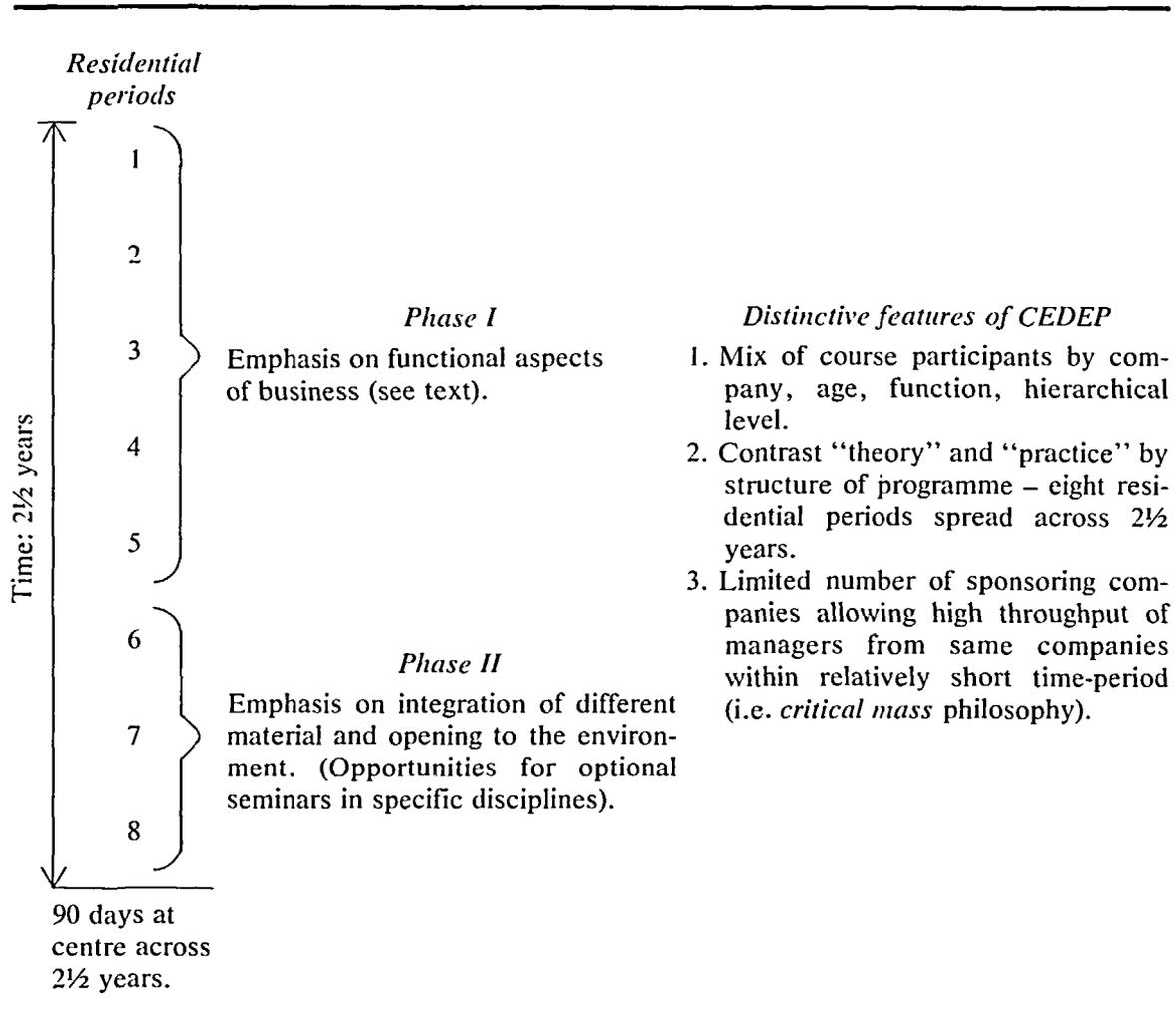
This paper summarises the principal results of an evaluation study carried out at CEDEP (Centre Européen d'Education Permanente) at Fontainebleau, France. It is organised as follows. The second section deals with the structure of the CEDEP programme. In the third section, the guiding principles, methodology and studies comprising the research are presented before the principal results in the fourth section. The fifth section describes a model of the CEDEP-company educational system and identifies and discusses variables which affect the relative effectiveness of the CEDEP programme. The work is also related to other studies reported in the literature. The final section of the paper discusses the research and its implications. It should be stressed that this paper only provides a summary of the CEDEP project, fuller details of which will appear in a forthcoming book.

2. Structure of the CEDEP Programme

The structure of the CEDEP programme is presented in Figure 1. At the time of the research project, the programme was a "sandwich" course spread over two-and-a-half years and divided into eight residential periods, each of approximately two weeks duration with three-month intervals between periods (with the exception of a six-month interval between the fifth and sixth periods). The managers who attended CEDEP came from a *limited* number of large international companies which had essentially formed a "club". The companies selected the managers to attend the course and were asked to respect quotas concerning the distribution of ages, job functions and hierarchical levels. Although these quotas were not always strictly adhered to by the individual companies, the end result was that each cohort of managers attending CEDEP had a similarly mixed profile representing a wide range of ages (30 to 55), job functions and hierarchical levels. The centre started operations in May 1971; by September 1976 (when the last data for the project were collected), almost 1000 managers, representing 15 cohorts, had been to CEDEP.

The CEDEP programme had two basic parts. In Phase 1, managers followed a fairly typical business school type programme with courses in Marketing, Finance, Accounting, Management Science, Economics, Organisational Behaviour and

Figure 1. Structure of the CEDEP programme

Residential periods

Phase I

Emphasis on functional aspects of business (see text).

Distinctive features of CEDEP

1. Mix of course participants by company, age, function, hierarchical level.
2. Contrast "theory" and "practice" by structure of programme – eight residential periods spread across 2½ years.
3. Limited number of sponsoring companies allowing high throughput of managers from same companies within relatively short time-period (i.e. *critical mass* philosophy).

Phase II

Emphasis on integration of different material and opening to the environment. (Opportunities for optional seminars in specific disciplines).

Time: 2½ years

1
2
3
4
5
6
7
8

90 days at centre across 2½ years.

Business Policy. In addition to individual study and plenary sessions, managers were also required to work in small heterogeneous groups and the course had a heavy emphasis on the practical aspects of humanistic psychology. The learning process was organised through a variety of methods: case studies, straight lectures, audio visual media, exercises, a business game and experiential learning. Phase II of the programme was less traditional. It was more "open" and had as its central theme the relationships of companies with the wider environment in which they operate. Here external lecturers and personalities were frequently involved in the programme. Optional seminars in specific disciplines were also provided.

The "philosophy" of the CEDEP programme relies on three basic principles:

(1) To expose managers to a wide "mix" of course participants from different companies, hierarchical levels, functions, and nationalities;

(2) To contrast theory with practice. This was achieved through the "continuous" nature of the sandwich course. This also served to extend the educational experience over a fairly lengthy period in order both to emphasise and facilitate the long-term nature of management development;

(3) To create a force for change within the sponsoring companies by establishing

critical masses of managers who would have all undergone the same educational experience. For this reason, the number of sponsoring companies was limited.

3. Research Design: Methodology and Principles

A review of the literature revealed few previous studies of note and remarkably little either by way of operational concepts or methodology (see however [6, 18 to 26].) However, it did emphasise several important problems in programme evaluation:

(1) *Objectives*: evaluation has to be made against a set of specific criteria. However, objectives for management education programmes are usually stated in general terms. Furthermore, different parties to the process may have different interpretations of the objectives. An important task, therefore, is to translate programme objectives into operational terms in order to develop evaluation "criteria". In doing this, the research was influenced by three sources of information:

   (i) what managers said in interviews. The feelings and reactions managers imparted in non-directive interviews gave clues as to the types of effect that could be expected (recall that unintended as well as intended effects were of interest);

   (ii) declarations made at the founding of CEDEP; and

   (iii) an attempt by the teaching staff in April 1974 to define a model of the centre's objectives.

(2) *Controls*: the most rigorous "experimental" design would require comparisons between managers who attended CEDEP and control groups of managers who did not [1]. Furthermore, designation of managers to control or "experimental" groups should be effected by *random* allocation. This was not feasible at CEDEP. However, it was possible to take advantage of the distinctive "sandwich" nature of the CEDEP programme in that, at any one point in time, the various cohorts of CEDEP managers were at different stages of the educational process. Some were just starting, some were in Phase I, and others in Phase II, some had just finished, or finished for some time. To the extent that the different cohorts were comparable, the effects of CEDEP could be assessed by comparing measures on the cohorts at different stages of the programme. This "cross-sectional" design is illustrated in Figure 2 where the stage of the educational process reached by each of the first 12 cohorts is shown at an illustrative date, summer 1975. At this time six cohorts had completed the programme, three were in Phase II and three in Phase I. The important assumptions are, of course, that the course did not change significantly in the relevant period and that the different cohorts were indeed comparable. Checks revealed that both these assumptions were adequately met.

The first managers from each company to attend the course were, incidentally, systematically excluded from the study on the grounds that their responses would be atypical. A strength of the "experimental" design adopted was that it allowed some degree of control over environmental changes. That is, since all managers in the study came from the same backgrounds (i.e. companies), they ould all be subject to the same non-course environmental effects. Thus the background effects would all be experienced by the different cohorts and "cancel out" when comparisons were made between cohorts. Since the time at which managers in this study

Figure 2.   Cross-sectional research design

Stage of educational process reached in summer 1975 by first 12 cohorts

Cohorts		
I	Finished 24 months previously	
II	Finished 18 months previously	
III	Finished 16 months previously	Post-CEDEP
IV	Finished 14 months previously	
V	Finished 12 months previously	
VI	Finished 4 months previously	
VII	Inter-period 7/8	
VIII	Period 6	Phase II
IX	Inter-period 5/6	
X	Inter-period 3/4	
XI	Period 3	Phase I
XII	Inter-period 1/2	

At any one point in time each of the cohorts has reached a different stage of the educational process as illustrated here for summer 1975. Thus effects of the course were assessed by comparing differences in responses by cohorts. This assumes that (a) cohorts are comparable and (b) the course had not changed significantly. Cohort XIII was, incidentally, "tested" in its first days at the centre in the autumn of 1975 and thus provided a "control" group.

attended CEDEP straddled the 1973 Arab oil embargo and its immediate economic aftermath, this consideration was particularly relevant.

(3) *Inconclusive results*: studies rarely produce conclusive results. Either observed differences are small or, it can be argued, they are artifacts of imperfect research designs and/or measuring instruments. This problem was tackled by: (a) designing the research in the form of a series of partially over-lapping studies in order to be able to check for consistency of results across studies; and (b) attempting to measure the same phenomena with different types of instruments. A valuable by-product of this strategy was that it reduced the risk of the overall research project. That is, the failure of one part of the project would not endanger the whole research effort.

In addition to specifying effects, the major goal of the research was to develop greater understanding of the educational process. To do this, the outcomes of the programme were conceptualised to be a function of three clusters of variables and their interactions [20]:

(1) the "type" of manager attending the course;
(2) the nature of the course itself; and
(3) the working environment of the manager.

The separate studies, to be described below, aimed at explicating both the effects of these clusters of variables and their inter-relations in order to develop a model of the CEDEP-company educational system.

A common methodological approach was used in most studies. First, an extensive series of semi- and non-directive interviews was undertaken with managers at different stages of the educational process, as well as with persons who had not attended CEDEP but worked with managers who had (e.g. direct bosses, subordinates and colleagues). Faculty were also interviewed. Second, questionnaires were constructed on the basis of the interviews which provided both a source of ideas about the educational process and questions often formulated in the language actually used by the managers in the interviews.

The project consisted of five major studies (or groups of studies). These are summarised in Table I.

Table I   Summary of research studies

Study	Objectives	Methodology
1. *Transfer*	What managers principally acquired at CEDEP; what they did differently as a result of attending the course; factors that help/hinder the transfer of learning; and effects of course on "integration" [27].	Semi-structured interviews (1974/75) followed by questionnaires (1975). Response rate 74 per cent of 333.
2. *Change*	Behavioural changes perceived by managers and others. Assessment of characteristics of managers by others.	Semi-structured interviews (1974/75) followed by questionnaires (1975). Response rate 78 per cent of 185 concerning self. 41 per cent agreed to questionnaires being completed by others. 80 per cent of 310 "others" completed questionnaires. 56 self-questionnaires also completed at CEDEP (100 per cent response rate).
3. *Selection procedures*	Effect of structure of company personnel/training function, policies and procedures on managers' motivations and expectations concerning CEDEP.	Semi-structured interviews (1975/76) followed by questionnaires to managers from four companies (1976). Response rate of 57 per cent from 656 managers from cohorts I through XIII.
4. *Support studies* (i) How managers perceive CEDEP	Perceptions of CEDEP with implications concerning attitudes towards other CEDEP managers and motivations to attend the course.	Interviews (1974/75) followed by questionnaires (1975). 80 per cent response rate from 341.

Study	Objectives	Mthodology
(ii) Specialist-generalist	Do managers structure problems differently at the beginning and end of the programme?	Analysis of identification of problems in a small case study made by managers in two cohorts: one at Period 1, the other in Period 8.
(iii) Boss-manager influence processes	Does the course change the basis of managers accepting their bosses' authority? [28, 29].	Special procedure followed to develop instrument. Limited application – 70 responses.
(iv) Self-assessed competence	Do managers' self-images of their competence in disciplines taught at CEDEP change?	Questionnaire derived from attitude statements: applied both at the centre (two cohorts) and mailed to managers in 1975.

5. *Studies of the learning environment*

Study	Objectives	Mthodology
(i) Process "trace"	How do managers' reactions to the course and learning environment vary across the eight periods?	Unstructured interviews with managers at each of the eight residential periods (83 managers involved). Content analysis of interviews. Analysis of unobtrusive data concerning the course, e.g. bar-receipts, number of telephone calls, time-tables, etc.
(ii) Relationships: teaching staff, managers and learning environment	How do managers and teaching staff perceive themselves, each other and the learning environment? [30, 31].	Interviews leading to questionnaires completed by teaching staff and two cohorts of managers (1976).
(iii) Course objectives and realisations.	Do course objectives and realisations differ between teaching staff and managers, and between managers at different stages of the programme?	Interviews leading to questionnaires completed by teaching staff and two cohorts of managers (1976).

Note: The research programme was defined in a paper written in June 1974. Two large mailings of questionnaires were made in the summer of 1975 and September 1976. From 1974 until 1976 data were also collected through interviews and questionnaires at CEDEP itself. In addition, several interviews were conducted in the companies. A progress report on the research programme was presented to the sponsoring companies in October 1975 and a final report in March 1977. This report was also sent to all CEDEP managers in April/May 1977. The research was the initiative and responsibility of CEDEP, the companies having agreed to it in principle.

4. Findings
CEDEP's performance was measured in six broad categories:
(1) acquisition of knowledge in different disciplines;
(2) acquisition of a more global approach to problems;
(3) increased self-confidence and job efficiency;
(4) greater understanding of and sensitivity to human relations;

(5) decision-making style and attitudes towards risk and uncertainty; and

(6) attitudes and feelings towards the company.

What was CEDEP's relative success in these areas: Managers, at the seventh (penultimate) residential period, were asked to choose from a list of 25 possible goals the five that CEDEP actually promoted *most*. The rank-order of the eight most frequently chosen items was:

(1) Generalist outlook;

(2) Good communication skills – especially listening;

(3) Sensitivity towards the social environment;

(4) Ability to face up to complexity (e.g. of problems, issues, etc);

(5) { Ability to tolerate ambiguity and uncertainty
{ Ability to manage change;

(7) { Skill in inter-personal relations
{ High degree of analytical and conceptual skills.

Managers were also asked to choose the five items that the CEDEP programme promoted *least*. The rank-order of the eight *least* items with greatest frequency of choice was:

(1) { High technical job expertise
{ Idealism;

(3) Ambition;

(4) High motivation and commitment to work;

(5) Leadership ability;

(6) { Courage
{ Humility;

(8) Pragmatism.

CEDEP was clearly perceived as being more successful in providing managers with a generalist outlook, sensitivity to the social environment and skills in human relations rather than high technical job expertise.

(1) *Acquisition of knowledge in different disciplines*

However, managers did increase their knowledge in different disciplines. For example, they expressed high agreement with the following statements:

– "For me, CEDEP has been an opportunity to acquire knowledge in one or more specific fields other than my own"   99 per cent agree

– "CEDEP has enabled me to acquire knowledge about subjects I previously knew nothing about"   85 per cent agree

Furthermore, when measuring managers' assessment of their own level of competence in the different disciplines taught at CEDEP, it was found:

(a) Managers' self-perceived competence rose between the first and final periods, although not in linear fashion. After the final period there were both increases and decreases with the technical subjects accounting for most of the decreases. In general, the higher final period and post-CEDEP scores were for the more qualitative subjects (e.g., human relations, business policy/strategy);

(b) Increases in self-perceived competence over a 2½-year period were greater for managers who had completed CEDEP than for those about to start the course.

(2) *Acquistion of a more global approach to problems*
Managers rated this aspect highly. In addition:

(a) Compared to managers about to start the CEDEP experience, CEDEP managers reported more changes on dimensions involving (1) analysing problems in greater depth – 83 *v*. 52 per cent; (2) asking more penetrating questions – 70 *v*. 52 per cent; (3) being more coherent in their reasoning – 74 *v*. 61 per cent; and (4) having a more global viewpoint when making decisions – 92 *v*. 76 per cent. Furthermore, perceptions of managers by persons in their working environment indicated that managers at the end or having completed the programme showed more of these qualities than those at the beginning.

(b) A popular stereotype of the effects of functional specialities within business organisations is that managers only see problems from the viewpoint of their own function. Such professional bias was found to become less pronounced as managers advanced through the course. For example, a group at the beginning of the course was asked to read a small case describing the many and varied problems of a small company. Next, managers were required to define and rank the "three most important problems" they saw in the case. The same case and the same questions were given to a group at the end of the course. Excluding a human relations problem which dominated nearly all responses, types of responses were cross-tabulated by managers' functions. From the beginning to the end of the course, the proportion of responses reflecting the manager's own job function fell from 30 to 9 per cent.

(3) *Increased self-confidence and job efficiency*
If a manager increases his knowledge in different disciplines and broadens his outlook, he can be expected to feel both more self-confident and efficient. The data support this viewpoint:

(a) Compared to managers about to start the programme, CEDEP managers reported more changes concerning feelings of (1) efficiency in their work – 65 *v*. 55 per cent; (2) confronting problems more directly – 71 *v*. 61 per cent; (3) ability to handle conflicts – 78 *v*. 66 per cent; and (4) ease at work – 68 *v*. 60 per cent. Furthermore, these self-reports were generally corroborated by the people with whom they worked (on average 61 per cent).

(b) Managers also tended to agree with the following kinds of statement:
- "You have improved your ability to analyse and
  synthesise the problems with which you are faced" 83 per cent agree

- "You consider more factors before making a decision" 79 per cent agree

- "You have more confidence in yourself" 66 per cent agree

- "You stand up for your ideas more" 56 per cent agree

- "You organise your work more efficiently" 50 per cent agree

- "You take more initiatives" 49 per cent agree

However, relative to managers about to start the course, CEDEP managers did not see themselves as having become more interested (54 *v*. 55 per cent) or enthusiastic (52 *v*. 50 per cent) about their work. Nonetheless, they did become more motivated (69 *v*. 48 per cent).

(4) *Greater understanding of, and sensitivity to, human relations*
CEDEP stressed Human Relations both by its Organisational Behaviour course and in the organisation of the learning environment (group work, living arrangements, etc).

(a) 44 per cent of managers rated Organisational Behaviour as "the most useful course". Indeed, in all but one company, it was the course which met this description with the greatest frequency. In addition, whereas 68 per cent of managers agreed with the statement "It was particularly important for me to acquire quantitative techniques", the proportion who agreed with "The human relations aspects have been particularly valuable for me" was 86 per cent.

(b) When asked about their job behaviour, managers reported that, since attending CEDEP, they practised a *more open management style*. They agreed with statements such as:

– "You feel you are more available to others"	71 per cent agree
– "You delegate responsibility more often to your subordinates"	70 per cent agree
– "You consider the opinions of your subordinates more often"	70 per cent agree
– "You share more information with your subordinates"	69 per cent agree
– "You are more effective in running meetings"	67 per cent agree
– "You are more inclined to take the advice of your subordinates before making a decision"	65 per cent agree
– "You work in groups more often"	61 per cent agree
– "You feel that there is more co-operation amongst members of your work group"	56 per cent agree
– "You feel that there is a greater atmosphere of 'teamwork' in your work group"	43 per cent agree

In addition, the longer a manager had been on the course, the more changes he reported reflecting a *more open management style*.

(c) Managers also reported a greater understanding of social pressures and increased skill to deal with them. For example:

– "You understand more easily how conflicts arise"	75 per cent agree

- "You feel better equipped to act as a leader (e.g.
  asking people to do things,
  giving orders, etc)"   74 per cent agree

- "You personally find it easier to deal with conflicts"   61 per cent agree

However, there was a marked contrast between increased ability to understand subordinates on the one hand, and bosses on the other:
- "You find it easier to understand why your
  subordinates behave as they do"   73 per cent agree

- "You find it easier to understand why your
  boss behaves as he does"   51 per cent agree

(d) Other data indicated that, compared to managers about to start the course, CEDEP managers had become more sensitive to their subordinates (81 *v.* 66 per cent) as well as to others (77 *v.* 61 per cent). These changes were generally supported by people with whom the CEDEP managers worked (58 per cent on average).

Concerning the effects of CEDEP on a manager's relationship with the company hierarchy, findings are contradictory. For example, compared to managers about to start the course, CEDEP managers reported the same amount of change concerning the autonomy of their behaviour *vis-à-vis* their bosses (average reported change of 67 *v.* 65 per cent). However, opinions of the managers' working environment indicated that those who had completed the course behaved in a more autonomous manner than those still in the process. Finally, those managers whose own bosses had attended CEDEP reported having become less submissive to their superiors than those whose bosses had not been to CEDEP (65 *v.* 50 per cent – although this did not hold within all companies).

(5) *Decision making style and attitudes towards risk and uncertainty*
Based on self-reports, there was no evidence that CEDEP managers had either become more or less decisive nor that they had increased their taste for taking risks relative to managers about to start the course. In addition, CEDEP managers characterised themselves as having become more cautious when making decisions (59 per cent).

Second, although judgements by third parties indicated that CEDEP managers in the second half of the programme were more capable of handling uncertainty than those at the beginning, this evidence was generally not supported by the managers' own opinions of themselves. (Managers were asked about their attitudes towards (1) need for reassurance, (2) being surprised by unexpected events, (3) need for order and clarity, (4) expression of extreme opinions, (5) behaviour in crisis situations, and (6) need for certainty).

An objective specified by the teaching staff, and linked to the ability to face up to uncertainty, was that of helping managers to become more "internally controlled".

By this was meant to encourage the attitude of seeing oneself as able to determine what happens to one rather than to submit passively to events. A person having an "internal" personality orientation attributes what happens to him, e.g. successes and failures in life, to the results of his own actions. An "external" orientation, on the other hand, is to feel that one's life is controlled by luck or more powerful third parties [32]. An "internal" orientation, therefore, implies a strong will to control one's own life.

There were no meaningful differences on this dimension of personality between managers at the beginning, middle, end or after CEDEP and only minor differences between companies. Although older managers tended to be slightly more internally oriented, the only important difference found was that non-French managers were more internally oriented than French managers. It was concluded that CEDEP did not change this personality dimension of the managers.

As stated above, findings in this section are mixed. Although, on the basis of reports by others as opposed to themselves, there was evidence that managers increased their capacity to face up to uncertainty, "internal-external" control was a stable personality trait in this population of managers; however, as reported below this dimension of personality, or something similar to it, was important in explaining *how* managers reacted to and gained from the course.

(6) *Attitudes and feelings towards the company*
Managers greatly appreciated the opportunity at CEDEP of interacting with participants from other companies, functions and nationalities (97 per cent agree). One consequence of this interaction, as well as the formal educational process at CEDEP, was that it allowed managers to re-assess themselves as well as their perceptions of and relationships with their companies.

These issues were examined in the Transfer study by a series of questions measuring the extent to which managers (1) became more individually *integrated* in their companies; (2) perceived a *sense of uneasiness/malaise* within the company; and (3) acquired a desire to change their type of activity or even leave the company (*"move or stay"*).

Examination of combined measures of these questions revealed no overall differences between managers at different stages of the educational process on the *integration* or *move or stay* dimensions, although managers who had completed the CEDEP course perceived less *malaise* in their companies.

However, there were important differences between companies on the measures; in particular, whereas managers in company X became more individually integrated over time, the reverse occurred in company Y.

Managers were also asked (directly) whether they thought they had become more critical of their companies or whether they identified more with company goals. Compared to managers about to start the course, there were no differences.

One further result should be mentioned. Managers seemed to have a *personal* rather than *company* orientation towards their development at CEDEP. For example, they agreed to a large extent with attitude statements such as:

- "For me, CEDEP has been an opportunity to become
  more open-minded"   96 per cent agree

- "Above all, CEDEP has been an intellectual
  enrichment for me"   84 per cent agree

However, they were more inclined to see the benefits of CEDEP on a personal level:
- "You feel that CEDEP has been of particular help to you
  at a personal level"   78 per cent agree

as opposed to appreciating its utility to their work in the company:
- "Your going to CEDEP has greatly helped your own
  work in the company"   52 per cent agree

5. Interpretation of Findings: A Model of the CEDEP-Company Educational System

The extent to which managers profited from the CEDEP experience was a complex function of the three classes of variables considered at the outset of the research, namely: (1) the "type" of manager attending the course; (2) the course itself; and (3) the working environment of the manager. The particular variables within each of these headings which were found to be important for understanding the CEDEP-company educational system are shown in three boxes in Figure 3, pages 14, 15.

First, there are two individual variables: age and personality, the latter being the measure of "internal-external" control [32] described in the preceding section (see sub-section 5) and shown to be a stable personality trait in the population of CEDEP managers. Although other individual data, such as educational level, were available in the research, relative to the population of CEDEP managers, age and personality were the only significant characteristics.

Second, it was found useful to characterise the CEDEP course in two ways: (1) the stage of the programme reached by the manager (recall the "cross-sectional" research design); and (2) the extent to which managers felt they had learned at CEDEP – specifically, in the areas of (a) human relations and (b) discipline related knowledge.

Third, the manager's working environment has been considered from the viewpoints of:

(1) policies and procedures of the company for selecting managers to attend CEDEP;

(2) the extent to which managers worked with other managers who had also attended CEDEP (i.e., "critical mass") and/or expressed feelings of belonging to a group of CEDEP managers within the companies; and

(3) two kinds of job characteristics: first, type of job as classified by function and position and second, a measure of the extent to which managers considered their jobs to be predictable.

For understanding the CEDEP-company educational system, the above three aspects of the manager's working environment can be considered to influence perceptions of what helped or hindered the transfer of learning from CEDEP to the

job. These help/hinder variables cover dimensions involving (1) perceived suppor-
tiveness of the manager's immediate working environment; (2) aspects of his job
(particularly autonomy); (3) company attitudes towards management education
and CEDEP in particular; (4) top management's direct involvement in CEDEP; (5)
perceptions of company atmosphere and structure; and (6) general economic condi-
tions. The items constituting these dimensions, and the extent to which managers
deemed them to help or hinder the transfer of learning are detailed in Table II on
page 16.

A model of the CEDEP-company educational system was derived from the data
of the project by considering (a) the relationships between the three blocks of
variables indicated in Figure 3 and (b) the extent to which they *jointly* affected
outcomes of the educational process.

This model is schematically represented in Figure 3, where, on the left hand side,
arrows linking variables indicate relationships between the "explanatory" vari-
ables, and on the right hand side, crosses in the columns indicate direct effects of
the variables on job related outcomes. That is, a cross ("+") in an outcome column
indicates the *direct* effect of the explanatory variable corresponding to the row in

Figure 3. CEDEP-company educational system: Explanatory variables and outcomes
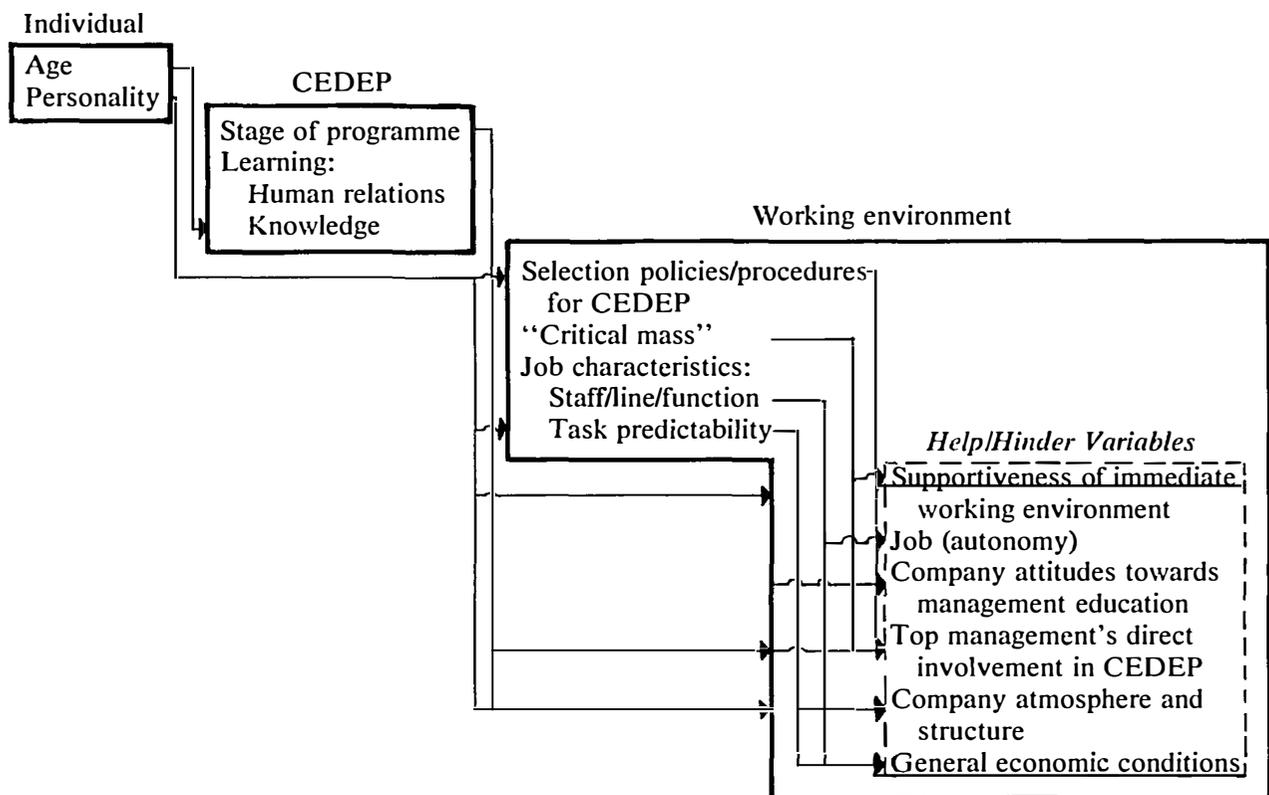
which the cross appears. Thus direct effects can be read straight off the right-hand side of the diagram. For example, personality was found to have a direct effect on "self-confidence and efficiency", and age on "integration".

The importance of making the relationships between explanatory variables explicit on the left hand side of the diagram is that variables were sometimes found to influence outcomes *indirectly*. Thus if one only considered direct effects, the importance of some variables would be misinterpreted. For example, age had a *direct* effect on the outcome "integration" but no direct effects on the other outcomes shown in Figure 3. However age was related to feelings of having learned discipline-related knowledge at CEDEP (the older the manager, the greater the feeling), and learning, in turn, affected outcomes. Thus age had an *indirect* effect (through knowledge) on these outcomes. Consequently, to understand the relationship of age with outcomes it is necessary to specify *both* direct and indirect effects. The significance of identifying indirect effects is that in practice one frequently cannot influence outcomes directly. For example, if – as is the case in the CEDEP research – a key variable affecting outcomes is the manager's perception of the supportiveness of his immediate working environment, the knowledge that this can itself be influenced through "critical mass" is of great practical importance (this is

┌─Behavioural Outcomes─┐

Self-confidence and efficiency	*Openness of management style*	*Social understanding and facility*	*"Integration"**		
.	.	.	+	Age	⎫ Individual
+	+	.	.	Personality	⎭
+	+	+	+	Stage of programme	⎫
+	+	+	.	Human relations	⎬ CEDEP
+	+	+	.	Knowledge	⎭
.	.	.	.	Selection policies . . .	⎫
+	.	.	.	"Critical mass"	
+	+	.	+	Staff/line/function	
+	.	.	+	Task predictability	
+	+	+	.	Supportiveness	⎫ Working
.	.	.	.	Job	⎬ environment
+	.	+	+	Company attitudes . . .	Help/
.	.	.	+	Top management . . .	Hinder Variables
.	.	.	+	Company atmosphere .	
.	.	.	.	General economic . . .	⎭

* "Integration" is also a function of behavioural outcomes

Table II. Help/hinder Factors*

	Percentage of responses AGREE**	
	Help	*Hinder*
(1) *Perceived supportiveness of immediate working environment*		
You felt your immediate working environment would support you	61	—
(2) *Job*		
You are the leader of your unit	70	—
You are fairly free to make changes in your own department	69	—
Your job lends itself to changes	69	—
You have had a specific job to do which is in line with what you learned at CEDEP	34	—
You lack the autonomy to carry out your projects	—	29
(3) *Company attitudes towards management education*		
The company has a general policy for continuing education	79	—
There is much coherence between top management's objectives and CEDEP's teaching	45	—
The image of the CEDEP manager is, in general, excellent	33	—
Middle management will not be going to CEDEP	—	27
Top management doesn't seem to understand	—	16
(4) *Top management's direct involvement in CEDEP*		
Top management does not go to CEDEP	—	64
(5) *Company atmosphere and structure*		
Recent structural changes favour innovation	65	—
The organisation's hierarchical structure is not too heavy	53	—
The company is decentralised into small units	47	—
Your firm is open to change	47	—
There is a large degree of uncertainty and instability within the company	—	48
There are incessant organisational changes	—	44
Activities are highly centralised	—	34
Communication within the company is poor	—	33
The company is divided into small units without enough communication between them	—	32
There is a paternalistic atmosphere in the company	—	24
There are too many rules and hierarchical levels	—	24
(6) *General economic conditions*		
Fluctuations in economic conditions create a large obstacle	—	67

* Managers were presented with separate lists of "help" and "hinder" items and were asked whether they agreed that these helped or hindered (as appropriate) the transfer of learning.
** n = 246

discussed further below). Consider too selection policies and procedures for CEDEP the effects of which were also found to be indirect – through perceptions of company attitudes towards management education and top management's involvement.

The four types of outcome specified in the columns on the right of Figure 3 are: (1) "self-confidence and efficiency"; (2) "openness of management style"; (3) "social understanding and facility"; and (4) "integration". Examples of items comprising these outcomes are given in the preceding section; see sub-sections 3, 4(b), 4(c) and 6 respectively.

Consider how each of the explanatory variables was found to influence outcomes:

Individual variables

As stated above, age had two effects. First, it had a direct effect on "integration". Specifically, older managers saw less *malaise/uneasiness* in their companies and experienced less of a desire to *move* from their present situations. This finding makes intuitive sense. Secondly, older managers reported more learning by way of discipline-oriented knowledge which, in turn, led to more behavioural outcomes. In interviews, older managers frequently reported that they had to struggle harder than their younger colleagues to acquire new knowledge. This struggle may well have given them the impression that they had learned more by way of discipline-oriented knowledge.

The effects of personality, as measured by the "internal-external" instrument described above, were a major finding of the research. First, compared to managers with an "external" orientation, "internals" reported greater levels of behavioural change concerning sensitivity to others, openness of management style, enthusiasm for work, and self-confidence and efficiency (direct effects). Second, personality affected perceptions of several key aspects of the company environment and thus also had indirect effects on behavioural outcomes.

Consider, for instance, "selection policies/procedures" indicators of which were frequently perceived differently by "internals" and "externals". Managers with an internal orientation (a) felt that their immediate bosses attached great importance to their attending CEDEP – 63 per cent (internals) *v*. 35 per cent (externals); (b) were "quite clear" about why they had been sent to CEDEP – 84 per cent (internals) *v*. 48 per cent (externals); and (c) claimed to have "clearly understood CEDEP's objectives before going there" – 64 per cent (internals) *v*. 33 per cent (externals). In addition, "externals" exhibited greater cynicism about CEDEP and believed that top management considered the programme to be less important than was thought by "internals". These differences are particularly significant in that, as stated above, there were few tendencies for managers' scores on this personality dimension to vary with relevant background variables. Consequently the same social reality was differentially perceived *at an individual level*.

Personality also affected feelings of task predictability and two help/hinder variables: perceived supportiveness of the immediate working environment and the structure and atmosphere of the company. For both these variables, "internals" perceived the company environment as being more conducive for applying what

they had learned at CEDEP than "externals". However, an interesting "non-finding" indicated in Figure 3 was that there was no relationship between personality and learning at CEDEP itself. Thus in understanding the total CEDEP-company system, the personality dimension was only directly relevant to the company environment.

With hindsight, it seems evident that "personality" should affect perceptions of management education and outcomes. However, our review of the literature did not reveal a single study or comment paper concerning management education which explicitly discussed the notion that a stable personality trait might affect intervening variables (e.g. company environment) or outcomes. On the other hand, there has been some discussion of managers either being at different stages of development or belonging to one of different developmental patterns [22, 33]. In addition, studies have addressed the issue of whether management education affects personality *per se* [34] – as in the original conceptualisation of this research. *Management education, it appears, does not affect personality, although personality affects outcomes of management education.* This naturally leads one to ask "why?"

Although this research makes no claim to have discovered *the* personality dimension relevant to management education, when evidence from other research is considered, two reasons to explain the importance of this kind of personality dimension can be advanced. First, a study by Runyon [35] revealed that "internals" reported greater job satisfaction when working in conditions involving an open management style. This therefore suggests that if personality is congruent with course content and objectives, outcomes related to personality should be expected. Put in more general terms, *the proposition is that personality will be important when the course reinforces pre-dispositions of certain types of personalities.* In the CEDEP programme, for example, there was a heavy emphasis on humanistic psychology (encouraging people to be more open in their behaviour). This was congruent with pre-dispositions of "internals", and they subsequently reported a greater tendency to behave in a more open manner. Second, both a review of the literature by House [36] and the results of the CEDEP research (see below), indicate that the relative effectiveness of management education is particularly subject to social influences (e.g. the attitudes of the manager's immediate working environment). Consequently, a personality dimension, such as the "internal-external" measure which indicates how people perceive social influences should be important in understanding the process and effects of management education (see also [37]).

Finally it should be noted that although the data indicated that "internals" reported more changes than "externals", this does not mean that "externals" reported no changes. It was a question of degree.

The CEDEP Course
What managers learned in both the areas of human relations and discipline-oriented knowledge affected behavioural outcomes directly. Furthermore, there was little relationship between these two measures of learning. (The fact that a manager said he had learned much, or little, by way of human relations was not a good predictor of his learning in technical subjects). A number of implications can be drawn from

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these two facts. First, learning of technical subjects can be a powerful precursor of behavioural changes. The acquisition of technical expertise can lead to feelings of self-confidence which in turn permit a manager to experiment with new patterns of behaviour. It is also possible that a manager who starts to display awareness of technical expertise in his job will be treated differently by the people with whom he works. An important finding related to this point is that although feelings of having acquired specific technical competences diminished after the CEDEP programme had been completed, this was not true of reported behavioural changes. Thus the teaching of technical subjects may have important consequences beyond the bounds of the disciplines taught.

The lack of strong relationship between the two kinds of learning is also important in that it emphasises that the same objectives can be achieved through different means. There is a tendency in business schools and training centres to follow *an* approach to management education (such as case studies or analytical or experiential methods). The results discussed here suggest that both discipline and human oriented approaches have complementary roles to play. Indeed, given that managers were required to follow the same programme at CEDEP for most of the eight residential periods, it seems reasonable that a multiplicity of approaches would be appropriate in that the managers, in all likelihood, had a multiplicity of needs. Bakke, in reporting on the Solstrand project, reached a similar conclusion [20].

Courses Rated Most Useful

As reported above, when asked which course was found "the most useful", 44 per cent of the managers cited Organisational Behaviour (which was mainly human relations). The second most useful course by this criterion was a knowledge-oriented analytical discipline, Finance (26 per cent). This result runs contrary to findings reported elsewhere in that in other studies (in the UK and North America), knowledge-oriented analytical disciplines have not been rated highly in terms of their utility in managers' post-course assessments [38]. In the studies referred to, human-oriented, inductive subjects, Business Policy and Organisational Behaviour, ranked as the most useful courses. Indeed, Handy interpreted these findings by stating that analytical disciplines and approaches were neither appropriate nor seen as useful by managers within the context of general management programmes. The findings reported here clearly contradict this interpretation. However, the reason for the different findings is not apparent. A possible interpretation is cultural differences: the predominantly French group of managers at CEDEP might be thought to have been more analytically inclined than their Anglo-Saxon counterparts in the other studies. (Tests made by my colleague A – J. Rigny concerning the managers' preferred learning styles tend, to confirm this interpretation.)

Effects of the stage of the programme reached by the manager were evident on several dimensions. First, the longer the manager had been associated with the programme the more behavioural changes were reported – see Figure 3. As noted above, there was no post-programme decline in this respect. This "time" effect was, however, subject to a methodological bias. Questionnaire items tied to concrete behavioural acts showed time effects whereas more general items did not. In addition, there was a time lag in confirmation of such self-reports by members of the managers' working environments. Managers in the second part of the programme

(Phase II) were generally perceived both to have developed more and to show greater levels of attainment on many dimensions than managers in the first part (i.e. Phase I). However, there were few differences between perceptions of managers at Phase II and those who had completed the programme.

Other "time" effects also appear in Figure 3. First, managers who had completed the CEDEP programme perceived less *malaise* in their companies. Second, managers in Phase II saw their company atmosphere and structure as more favourable to the transfer of learning. Third, managers who had completed the CEDEP programme considered that top management showed less direct involvement in CEDEP than managers still doing the course. The interpretation of these effects in unclear. However, they emphasise that the same company reality may be differently perceived depending upon the stage of the programme reached by the manager.

The Manager's Working Environment

In a review paper written a decade ago and entitled *Leadership training: Some dysfunctional consequences*, House [36] noted that, "leadership training, as a method of change, differs from other methods in that it relies on learning and attitude formation as the major path toward behaviour change". Because of the strong attitude component, House argued that the relative efficiency of such training efforts was particularly dependent upon social influences in the manager's working environment. Furthermore, House identified three sources of influence: (1) "the formal authority system" within the organisation by which he meant company policy and practices, decision procedures, performance appraisal and control systems; (2) The exercise of formal authority by superiors. That is *how* company practices were enforced, particularly by the managers' immediate superiors; (3) Reactions of the trainee's primary work group (i.e. people in the manager's immediate working environment). Results from the CEDEP research certainly support House's proposition.

Selection Policies and Procedures

An in-depth examination of the policies and procedures of four companies for selecting managers to attend CEDEP revealed considerable inter-company differences. These differences concerned (a) the organisation of the training function; (b) the involvement of specialised training/personnel services and line management; (c) whether managers "volunteered" or were "designated" to attend the course; and (d) the history of management education in the companies. However, despite these differences, managers from the different companies expressed equal desire to attend CEDEP. They had similar, ill-defined objectives for attending. They relied heavily on opinions of colleagues who had already attended CEDEP for information about the centre. Statements concerning personal expectations for CEDEP were similar as were the perceived expectations of direct bosses. Similar goals were attributed to top management concerning the intended use of CEDEP in the company. Indeed, perceptions related to selection policies and procedures were influenced to a greater extent by individual as opposed to company differences (see above). However, it is possible that the lack of differences on the above dimensions can be explained by the peculiarities of CEDEP and would not apply in other management education centres.

First, CEDEP was formed by a select group of companies which had defined common goals for the centre. Second, the fact that managers relied heavily on opinions of colleagues who had previously attended the course would act to standardise opinions and expectations across companies. Third, despite the fairly wide range of ages, the managers who attended CEDEP were fairly homogeneous in terms of educational level, and thus probably social origins.

Nonetheless there were important exceptions to the lack of differences documented above which were attributable to company policies and practices. These concerned: (a) perceptions of the closeness of the CEDEP-company relationship; and (b) the importance perceived to be attached by top management to management education and CEDEP in particular. As can be seen from Figure 3, the help/hinder variable "company attitudes towards management education" (see Table II for details) influenced both behavioural outcomes and the "integration" composite, and thus attests to the significance of this variable. Similarly "top management's direct involvement in CEDEP" had a direct effect on "integration". The importance of these findings is discussed further below.

Critical Mass

A distinctive feature of the CEDEP educational system was that many managers from the same companies attended the centre so that over a few years there developed a corps of CEDEP managers within the companies. This is the essence of the "critical mass" philosophy. Indeed, the role of this body within the companies in providing information about CEDEP to other managers was noted above. To assess the effects of the "critical mass" philosophy adequately would have necessitated detailed studies of working units having different levels of "critical mass" as well as of companies heavily engaged in management education but not using the CEDEP model. Since circumstances prevented this approach, an attempt to assess differential effects of various levels of "critical mass" within the companies was made based on rough measures indicating: (a) managers' affiliation to the group of managers in their companies having attended CEDEP; and (b) the frequency of contacts managers reported having at work with other managers who had also attended CEDEP. Despite the crudeness of these measures, the following trends emerged.

First, whereas it was expressly stated at the creation of CEDEP that the companies had no desire to use the centre to create a managerial "elite", managers did, to varying degrees, feel gratified to attend the course. For example, from a questionnaire designed to measure managers' perceptions of CEDEP, several items captured an awareness of a special group of "CEDEP managers" within the companies and a sense of affiliation to it. Consider the responses to the following items: "There is a sense of complicity between those who have already been to CEDEP" – 66 per cent agree; "I find it very pleasant now that I am part of the group of CEDEP managers" – 37 per cent agree; "I believe I have enhanced my reputation since going to CEDEP" – 60 per cent agree. Responses to these questions, as well as other evidence in the research, pointed to the creation of a reference group of managers within the companies having in common their attendance at CEDEP. Furthermore, managers' scores on this measure were found to co-vary directly with reported behavioural changes concerning feelings of confi-

dence and efficiency as well as the ability to conceptualise and analyse problems in greater depth.

Second, the extent to which reported changes differed according to whether managers worked with other managers who had also attended CEDEP was examined at two levels: (1) by considering whether the manager's direct boss had attended CEDEP; and (2) the amount of contact the manager had with colleagues who had also attended CEDEP. As reported in Section 4, if a manager's boss had also attended CEDEP, the nature of their relationship changed (it became "less submissive"). In addition, the presence of a manager's direct boss at CEDEP affected perceptions of top management's involvement in the centre even though the boss was not a member of top management. That is, 64 per cent of participants felt that an important factor preventing the transfer of learning from CEDEP to the companies was the fact that *top* management did not attend the course (see Table II). However if the manager's own boss had attended CEDEP the percentage dropped to 47 per cent. If the boss had not attended, it rose to 72 per cent. In other words, if a manager's direct boss had attended the course, this attenuated his feelings of non-involvement by top management. However, this effect was not uniform throughout all companies. In company *X*, for instance, of the 27 managers who answered this question, only one had a boss who had also attended CEDEP. Yet in this company, 44 per cent (a comparatively low figure) found the lack of attendance by top management to be a hindrance to the transfer of learning.

From Figure 3 and Table II it should be noted that *a key predictor of behavioural outcomes is a single question: "You felt your immediate working environment would support you"*. Furthermore, there is a positive relationship between answers to this question and the amount of contacts managers had with colleagues who had also attended CEDEP. Self-reported changes concerning modes of problem analysis and self-confidence were also positively related to such colleague contacts.

The mechanisms through which "critical mass" achieved the above effects appear to be: (1) the creation of a common language and frame of reference between managers having attended the same programme; and (2) the sharing of a common experience by managers outside the company. However, given the crudeness of the instruments available to measure "critical mass", these remarks, which are based for the most part on interview data, must remain speculative. In addition, it is important to state that the "critical mass" relationships concerning colleague contacts were not observed in all CEDEP companies. Companies in which such effects were observed were characterised by close CEDEP-company relationships and perceptions by managers that concern and importance were attached to management education, and CEDEP in particular, by top management.

Job Characteristics
The data did reveal some effects when managers were classified by job function or type of position, i.e. staff or line. For example, managers in general management positions felt they had more job autonomy and perceived general economic conditions to be a greater threat to the transfer of learning from CEDEP to the companies. Marketing and commercial managers had a tendency to report more

behavioural changes than other functions. There were also a few minor differences concerning the manner in which staff and line managers considered help/hinder variables. However, overall the striking feature of the data was the comparative lack of effects that could be attributed to classifications of managers by type of function or job.

On the other hand, feelings felt of task predictability were important. First, the more a manager felt that the characteristics of his job were predictable, the more he considered company attitudes towards management education and company structure and atmosphere to be a help in the transfer of learning. Similarly, lack of top management involvement in CEDEP and fluctuations in general economic conditions were considered to be less of a hindrance. These effects on help/hinder variables had, of course, subsequent impacts on outcomes – see Figure 3. Direct effects of task predictability were also observed. First, managers who felt their task environments to be more predictable, perceived less *uneasiness/malaise* in their companies. Second, greater feelings of task predictability were associated with more reported behavioural changes concerning feelings of self-confidence. The implication of these findings is that the more a manager feels his task environment to be predictable (i.e. stable), the more likely he is to profit from an experience such as CEDEP. This finding, however, is in direct contradiction to that of Berger, Williams & Thodey who found a negative relationship between feelings of task predictability and outcomes [39]. Berger [40] interpreted their findings by stating that the "less rigid the structure of the job content, the more he (the manager) will transfer learning from the course". However, in the CEDEP research the direction of the relationship (opposite to that found by Berger), was found to be the same in two independent studies each involving larger sample sizes than the single study upon which Berger based his conclusion.

Why should feelings of greater task predictability lead to more reported outcomes? First, such feelings lead to a greater sense of ease in the work situation and thus confidence. Second, confidence may be a necessary precursor of willingness to experiment with new modes of behaviour in the job situation. If, and as seems to be the case, development is a lengthy process, then a stable, and even structured task environment may permit a manager greater opportunities for putting into practice what he has learned in a long course such as CEDEP than a more turbulent environment.

The significance of the findings concerning perceptions of *task predictability are of particular interest. The results emphasise that feelings and perceptions of a manager's job are more important for understanding the developmental process than more obvious "objective" characteristics such as a function or position.*

Help/hinder Variables

The help/hinder variables, the role of which has been alluded to frequently above (see also Table II), can be classified into three groups:

(1) variables having no effects on outcomes;

(2) variables mainly affecting outcomes in the form of behavioural changes; and

(3) variables mainly affecting feelings about the company (e.g. "integration").

First, note from Figure 3 that the variables job and general economic conditions had no effects on outcomes. The finding concerning job is particularly interesting in that several of its constituent items concern job autonomy, a variable which has frequently been thought to be important for facilitating behavioural change following management education. For example, Berger [40] has stated that to increase the transfer of learning, the manager "must have the autonomy to change the way in which he performs his job". In the CEDEP research, the data indicate that managers felt they had a fairly high level of autonomy – see Table II – but that different levels of feelings of autonomy were not related to behavioural outcomes. This is therefore not inconsistent with Berger's assertion in that most managers probably enjoyed sufficient levels of autonomy. However, increases in autonomy above a "threshold" level did not produce increased reports of behavioural change.

The lack of effect for the question concerning fluctuations in economic conditions deserves comment in that it was reported by the managers to be the largest single obstacle to the transfer of learning (67 per cent). A possible reason for the lack of effect on outcomes could be that although economic conditions were important, they were essentially a constant for all managers and thus did not have *differential* effects on outcomes (recall the turbulent economic environment at the time managers attended the CEDEP course).

One of the most important findings of the CEDEP research is that a single question, "You felt your immediate working environment would support you", was a key predictor of behavioural change. The significance of this finding has already been discussed above where it was seen that it was affected by different levels of "critical mass". That is, "critical mass" is one way of creating a supportive environment for the manager. However, it is not the only way. What constitutes perceptions of a supportive working environment was not studied in the CEDEP research. However, it is clearly a most important issue and should be examined closely in future work.

The help/hinder variable company attitudes towards management education affected outcomes directly, but like top management's direct involvement in CEDEP and company atmosphere and structure, it was also related to feelings about the company, i.e. "integration". The manner and extent to which CEDEP mediated a manager's degree of integration in his company was complex. As reported in Section 4, across time CEDEP appeared to increase the degree of integration of managers from some companies, reduce that of others, and in some cases had no effect. An explanation for this phenomenon could lie in the role CEDEP played as a centre where managers learned to know both themselves and their company better through a process of exchange and comparison with others. Specifically, consider a manager who comes from a working environment about which he has neutral or even negative feelings. If he finds, through interaction with others at the course, that they are "worse-off" than he is, then he is liable, by the contrast, to have more positive feelings towards his company. Conversely, if he initially feels positively about his company, but the contact with others provides negative feedback, he is liable to feel less favourably towards his company.

Finally, the role that top management was seen to play at CEDEP was also a most important help/hinder variable. The implications of this finding are discussed below.

Summary of CEDEP-Company Educational System Model

The main findings of the CEDEP research are represented in the model illustrated in Figure 3. They can be summarised by stating that the key variables affecting outcomes are:

(1) *personality* – representing: (a) pre-dispositions to accept and act upon certain forms of educational input; and (b) ways of perceiving social reality.

(2) *learning at CEDEP* – by way of; (a) human relations; and (b) discipline-oriented knowledge.

(3) *perceived supportiveness of the immediate working environment.*

(4) *social influences in the work situation* – being: (a) feelings of task predictability; (b) company and especially top management's attitudes towards management education and CEDEP in particular; and (c) contacts with other managers who had also attended CEDEP – although this is dependent upon (b).

6. Implications for Management and Management Education

The results of the research are considered here from four perspectives: (1) the evaluation of CEDEP; (2) implications for management education in general; (3) the *evaluation* of management education; and (4) implications of the research for the professional personnel/training manager.

The Evaluation of CEDEP

Overall, the results indicated positive changes on most of the evaluation criteria although inconsistent results were found on the dimensions of "decision making style and attitudes towards risk and uncertainty" and managers' ability to deal with the company hierarchy. Whereas the evidence of the research is that it is unlikely that CEDEP could change a person's basic personality, it may be necessary to think of alternative means of helping managers develop on the dimensions indicating inconsistent results. It should be recalled, however, that part of the inconsistency centred on differences between self-reports and reports made by others – other managers giving responses about the managers which were more favourable than self-assessments. In addition, some results were difficult to interpret. For example, CEDEP managers considered that they had become more cautious when making decisions. However, whether this can be considered a positive or negative outcome depends on the extent to which managers were rash or timorous before attending the course.

Since the course apparently increased the number of factors considered by managers before taking decisions, it probably also acted to slow decision processes, more time and weight being given to analysis. This is, of course, consistent with the academic-affiliation of business school courses, although feelings of having learned in discipline-oriented subjects did lead to positive behavioural outcomes as noted above. Indeed, a particularly important finding of the research was that learning of *both* "human relations" and discipline-oriented knowledge contributed to reported changes, the implication being that CEDEP should continue to be demanding of the managers in both areas and not to emphasise one to the relative exclusion of the other. Variety of teaching methods and types of materials would seem to be particularly important in long management education programmes both as a means to sustain the interest of managers across time and to provide the

requisite degree of variety in learning material to match the variety of needs and preferences of the managers.

Many management education programmes are frequently "evaluated" by considering the reactions of managers to the courses. Data in the CEDEP study clearly demonstrated the danger of this form of evaluation. For example, when both managers' assessments of their level of competence in different areas and their feelings about the course and learning environment were monitored across the eight residential periods, it became clear that learning and attitudes towards the learning environment did not evolve in a smooth, linear fashion. Both started relatively high, dipped and then rose again. Thus, in managing a long educational process it is necessary to interpret managers' reactions in a time context. This remark not only applies to interpreting reactions at the training centre but in the company as well. Personnel/training managers should also be aware of the cyclical nature of managers' reactions to long training programmes.

A crucial finding of the research is the *interdependence* between various variables in determining outcomes of the educational programme: for example, the joint importance of (a) managers' feeling they have learned at the centre, (b) of having a supportive working environment, and (c) perceiving that management education is important in the company. The CEDEP research was done with companies which all had large commitments to management education. Thus, relative to other companies, the amount of variation in company attitudes towards management education was probably small. That variation in outcomes was still attributable to the differences that did exist clearly reinforces the finding of the importance of company attitudes towards management education (i.e. if there were little variation in company attitudes one would expect little co-variation between such attitudes and outcomes). From CEDEP's viewpoint – and indeed from that of all management centres – the implication of these findings is that in addition to performing efficiently at the centre itself, it must constantly emphasise in its relationships with the companies the significance to the managers of both a supportive working environment and company attitudes towards management education. The extent to which the centre can do this clearly depends upon the closeness of its relationships with the sponsoring compaines.

The data revealed that, prior to attending CEDEP, managers did not have precise objectives and expectations for the course, nor did they have a clear understanding of what was expected of them as a result of attending CEDEP. Furthermore, qualitative data indicated that motivation for learning at CEDEP seemed to be created by the course itself. At first glance, this might appear to be a weakness in the CEDEP-company system in that the importance of pre-course briefings – detailing explicit course and job related objectives – has frequently been stressed in the literature (see e.g. [38, 40]). However, whereas a minimum level of briefing is clearly necessary, it is legitimate, in general management courses such as CEDEP, to question whether companies should make objectives and expectations very explicit. The reason for this statement is that objectives for such courses usually include a large attitudinal component.

However, attitude change has frequently been found to be more effectively induced when the person does not feel pressured to conform (for example by a boss

detailing precise objectives before attendance at a course) [41]. Consequently, attitude change objectives may best be achieved through a discovery process at the management centre as indeed appeared to happen at CEDEP. What is important, as has been repeatedly stressed above, is the reinforcement managers receive from a supportive environment when back at their jobs. Another important point is that in the CEDEP situation, most managers cited other CEDEP managers as their primary source of information about the centre. It is also well-known that peer pressures are an important source of attitudinal change and that insofar as attitudes of fellow managers are congruent with company objectives, the peer information network has much to recommend it. To the extent that the above processes operate, the importance of close CEDEP-company relationships are further emphasised.

Some Implications for Management Education
Compared to other management education programmes CEDEP has at least two distinctive features: first, the length of the course whereby contact is maintained with the centre for 2½ years; and secondly, the fact that many managers from the same companies attend the course. Whereas the research did not make comparisons between managers attending CEDEP and other courses, the following comments seem justified.

When managers were asked about possible behavioural changes by items referring to concrete behavioural acts important time differences were noted. That is, the longer a person had been associated with the centre, the more changes were reported. Furthermore, compared to managers about to start the course, CEDEP managers generally reported more changes. Managers do, of course, change and develop whether or not they attend courses. At CEDEP, managers reported specific types of changes which were maintained throughout and after the course. The continuous contact with the course during 2½ years undoubtedly contributed to this. Second, managers generally felt that since attending CEDEP they had developed a longer-term orientation about their careers (66 per cent agree). The mere fact that their companies sent them on a 2½-year programme was probably largely responsible for this feeling. Another "by-product" concerned delegation of responsibilities. Since managers were required to attend a residential course for two weeks every three months, the frequency of their absences forced them to delegate.

As stated above, it was not possible in the research to make a detailed study of the "critical mass" philosophy although several effects of contacts with other managers who had also attended CEDEP were noted. For example, many managers felt a sense of affiliation to a "reference" group of CEDEP managers and former course participants were important in disseminating information about the centre to other managers in the companies. In addition, a positive relationship was observed between the amount of contact managers had with colleagues who had attended CEDEP and the perceived supportiveness of their immediate working environment (the importance of which has been stressed repeatedly in this report) – although this relationship was not observed to hold in all companies. The significance of this result is that "critical mass" may be one way of creating a supportive working environment.

A couple of findings illuminated key problems in the practice of management education which probably extend beyond the confines of the CEDEP programme. First, it is noteworthy that relatively little is known about what managers actually do in their jobs or what particular skills they need to develop [42, 43]. The significance of this statement is that management education may frequently operate under inappropriate assumptions. For example, management education is usually conceived of as a process of *leadership* training. That is, the trainee (i.e. the manager) is thought of as a potential/actual "leader" and the educational efforts are directed either towards improving skills in this domain and/or with the bias caused by accepting the truth of this assumption.

However, although every manager might be (or potentially is) a boss, he is also a *subordinate* [44]. Nonetheless, the conceptual framework of management education rarely allows for this fact and the skills of "effective subordination" are simply not taught. For instance, in the present research, whereas 71 per cent of the managers agreed that CEDEP had helped them to understand why their subordinates behaved as they did (i.e. the "boss" perspective), a smaller proportion, 51 per cent, agreed that it helped them to understand their bosses' behaviour (i.e. "subordinate perspective"). That is, a downward (in an hierarchical sense) view of an organisation was favoured. To this should be added the remark that although all managers had a boss, some had no subordinates and a large proportion only one or two.

Looking at organisations from the "boss" perspective is not necessarily optimal from the manager's viewpoint, particularly in an increasingly egalitarian age. Furthermore, it may well have negative consequences on the outcomes of management education. For example, the CEDEP data show (see Table II) that many managers believed that top management not attending the course was a major obstacle to the transfer of learning. However, if the manager is ill-equipped to influence his "superiors", the implication must be that the potential benefits of the course are greatly reduced. The "boss" perspective is an example of one inappropriate assumption underlying management education. There are probably many others

Second, there is an apparent paradox in the data: the research reveals that the managers developed on many relevant professional dimensions. Furthermore, managers felt that these were of great benefit. For example, 78 per cent agreed with the statement "You feel that CEDEP has been of particular use to you at a personal level". However, only 52 per cent agreed with "your going to CEDEP has greatly helped your work in the company". In other words, whereas three-quarters of the managers thought that CEDEP had benefited them at a *personal* level, only half felt that CEDEP had greatly helped *their work* in the company. Furthermore, only a third (see Table II) felt that a help to the transfer of learning was that they had "a specific job to do in line with what – (they had) – learned at CEDEP". That is, managers claimed that much of the substance they had learned at CEDEP was not directly applicable to their jobs – and this despite the fact that they reported many job-related behavioural changes.

This paradox can perhaps be explained by making a distinction between *content* and *process*. Apparently managers learned relatively little by way of direct job

content, e.g. the marketing specialist acquired little new marketing knowledge which he could apply directly in his job. However, what managers did acquire was *a way* of doing things. For example, they learned different ways of relating to people in their work environment, and of structuring and dealing with problems etc. Whereas managers valued the acquisition of these changes in *process* at a *personal* level, they seemed to perceive them as less valuable as far as their jobs were concerned. Management education centres clearly need to make explicit the links between processes and actions.

A further point concerns perceived relevance of what is taught on management programmes. Perceptions by CEDEP managers of the relevance of the courses varied considerably, and often unpredictably across the eight residential periods and a clear distinction existed between "life at CEDEP" and "life in the companies". There are functional and dysfunctional consequences of this state of affairs. On the one hand, a contrast between the management centre and the companies is probably healthy in that it helps the manager better perceive how life is lived in the company. That is, one can learn from "contrary" experiences which help restructure one's way of looking at the everyday world. Furthermore, such experiences can affect people in quite profound ways, for example, by increasing tolerance, becoming more broad-minded and aware of different things. On the other hand, if the management centre is seen as too artificial, too distant – and particularly since its teaching is concerned with industrial life – managers will fail to make the liaison between the centre and the company, the former being perceived as irrelevant. Management centres clearly live in a difficult middleground between these two extremes. However, relevance and "irrelevance" can both be powerful stimulants to learning and change. Perhaps the more important concept is credibility: that is, no pretensions should exist as to what is thought to be directly relevant and what is "irrelevant". However the courses must be credible.

The Evaluation of Management Education

As an evaluation study, the present research is deficient in that no attempt has been made to assess value for the different effects which were found to occur. This could only be done by separate studies with each of the sponsoring companies since achievements of criteria are likely to be valued differently. In an important sense, however, assessing the value of past training efforts is not in itself a productive exercise since the cost has already been incurred (i.e. the "sunk cost" concept). *What is important is to assess the relative values of alternatives for future training efforts.* That is "evaluation" is more useful to the extent that it helps the training/personnel manager make decisions concerning the future rather than justifying or indicting past efforts.

It is important to emphasise that the results reported in this monograph were only achieved after the expenditure of considerable time and effort and the question arises as to how similar studies can be done more rapidly since the delays caused by following the careful research procedures used here should be queried. When talking to practitioners of management education (at companies or training centres) there appears to be a belief that methodological issues are the problem. The experience gained from the CEDEP research is quite the contrary. Different measuring instruments, requiring varying levels of methodological sophistication

and preparation were generally found to yield similar results. What is difficult in these kinds of studies is to know what questions to ask and what types of effect to expect under different circumstances. Such inputs are of a theoretical rather than a methodological nature and it is the lack of development of theories (i.e. models) of management education which is the real bottleneck in evaluating programmes. Indeed, without explicit models it is difficult to carry out the most useful evaluations mentioned above – that is, evaluation of alternative training plans for the future.

Implications for the Personnel/Training Manager
The CEDEP research clearly emphasises that the company and management centre have a joint responsibility in ensuring successful outcomes. Furthermore, for the kind of general management programme examined here, the results identify key aspects of the company environment: (1) closeness of the company-management centre relationship; (2) perceived company attitudes towards management education, and particularly those of top management; (3) the manager's immediate working environment; and (4) the manager's boss. Results also indicate that change is a process of fitful evolution (rather than revolution), which needs a certain level of environmental stability to mature. Confidence building seems to be a precursor of job-related behavioural change. Furthermore, to the extent that attitude change is an objective this should be permitted to develop rather than be forced.

The implications of the research for the training/personnel manager therefore centre on finding mechanisms to facilitate the above combinations of circumstances. A few suggestions follow:

(1) Contacts between the company and management centre should be encouraged at all levels. i.e. top management, personnel/training staff, and the managers themselves. For example, managers can invite training staff to the company to talk to other managers, write case studies, do research and perhaps hold small seminars. However it is important that these invitations be made specific; otherwise the training staff will probably not come. In addition to strengthening company-management centre relationships, these kinds of activities can also act as useful reinforcement for the managers.

(2) Top management must be involved. Although attendance at a whole CEDEP-length programme is usually not feasible, several devices exist: for example, top management can demonstrate their concern by intervening in the selection of managers to attend programmes; they should also be encouraged to visit the management centre regularly while their managers are there, and even to give the occasional lecture; they could also spend, say, two days following particular sessions of interest to them; top management should also be encouraged to ask managers when they return from courses what can be done to help implement change. There is no need to convene special meetings for this purpose. Such questions can be posed in informal conversations. Indeed, informal, spontaneous questions may be perceived as showing greater concern than specially convened meetings. Actions speak louder than words and even a relatively small amount of time devoted by top management to educational efforts will have far more effect than declarations, however well intended.

(3) People in the manager's working environment can also be contacted in order to prepare the return from the training centre. If managers who work together are sent on courses this can create units of support through building up a "critical mass". People should be sensitised to being supportive but not to expect sudden radical changes. Development is a gradual process and needs favourable conditions to grow.

(4) The manager's boss must realise that the subordinate should perceive that attending the course is important to the boss. However, the boss should not be over-demanding in expectations before the manager attends the course; on the other hand, he should adopt a sympathetic and facilitating role on the manager's return.

(5) The manager should not perceive the course as an isolated occurrence. His attendance should be linked to longer term developmental plans – which will have to be made if they do not exist – and the managers should see his participation in this light.

Finally, the research highlighted the importance of personality in management education. This finding can be interpreted as follows: courses should not be expected to change a manager's personality; however, courses will reinforce people's pre-dispositions to behave in certain ways. It is therefore important to match the course and the manager.

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