

Management Education and TrainingANALYSIS AND PROCESSES

by

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"Education for management as such . . . is a subject of considerable perplexity and opinion is divided on what methods of training are appropriate . . . To provide education for management as such is not easy; and opinion here and in the United States, where it is attempted on a large scale, is divided on the appropriateness of various methods."

Robbins Report 1963, p.135.

Introduction

In the 15 years since the Committee on Higher Education, under the Chairmanship of Lord Robbins, published its report, there has been a huge expansion in management education and training. Part of this expansion can be traced through the institutions which have emerged: two major Business Schools in London and Manchester and a number of smaller schools like Liverpool, Oxford and Bradford, the expansion of management departments in existing universities, the rise of the Polytechnic departments, and, of course, the creation of the Training Boards.

Within this expanded framework the traditional subject areas of business study - industrial psychology, accounting, statistics, commercial law, operational analysis, personnel and industrial relations together with core subjects in the

social sciences such as economics have maintained their position within the curriculum. Each is a known quantity with an accessible and coherent literature which develops according to agreed principles. But it is recognised that these subjects are only the tools of management - the practice, the art and craft of management, depends on the way they are used. This fact is appreciated within management education, witness the widespread use of case studies, simulations, management games, interactive computer programmes and the emphasis on behavioural skills. But most people would agree that progress in the teaching of the art and craft of management, in other words the integrated use of techniques to produce an economic, social and aesthetically satisfactory result still lags behind the traditional subject areas. As the Robbins Report put it, "education for management as such . . . is a subject of considerable perplexity".

In this short paper I want to examine whether the perplexity can partially be reduced through a diagnosis of management training need, a prognosis of management development, and an appropriate provision of learning experiences.

### Functional Analysis in Course Design

It is quite simple to differentiate managers on functional lines and by levels of responsibility: Chief Official, Accountant, Food Trades Officer, Personnel Officer, Deputy Chief Official, etc. The first step in devising a course for any combination of function and level is an assessment of the appropriate level of input which would be required from each of the business studies subject areas. These become the pillars of the course. The second step is to incorporate sufficient role-playing exercises and games into the course to provide an integrating element. This is the standard procedure of course design - creating behavioural archways to link the pillars of the different subject areas. This analogy can be developed on a descriptive basis. If the height and width

of the subject columns can be considered as representing the time-duration and content, it is possible to imagine the courses for basic qualifications as tall narrow columns set close together with small behavioural arches. Post-experience courses, such as the Henley General Management Course, can be imagined as having short fat pillars set far apart with heavy behavioural arches. Of course, one can envisage a whole series of intermediate structures between these two.

I would suggest that these basic principles of course design are intuitively followed in most management education institutions. But there are difficulties. First, the skills of a subject specialist tutor are not the same as those of a behavioural skills tutor. Ideally, tutors should be adept in both fields, but few are. Secondly, students do not arrive at courses as standard units of input. Students at all stage in their career development bring to management courses different capabilities and prior achievements in the subject area and vary in their willingness and ability to participate in and learn from the behavioural and role education elements. Therefore there is friction and resistance in several areas - between student and student, between one subject area and another and between the subject inputs and the behavioural inputs. It takes considerable skill on the part of the tutorial staff to reduce these areas of friction and turn negative into positive attitudes. Students on structured courses leading to qualifications tend to "put up" with these frictions for the sake of the ultimate goal. But even on these courses the frictions can become malignant. On the short intensive post-experience courses students are usually less inclined to tolerate elements in the course which they consider to be irrelevant. A young student may be prepared to accept on trust that seemingly obscure or "way out" elements may be of value to him in the future and therefore invest his time and effort in the course work. But a middle aged manager, mindful of the structure of his organisation, the constraints of his career paths, and the opportunity costs of the learning effort, is less likely to be tolerant.

One of the difficulties that face both the course designer and the tutor is their very limited knowledge about

- (a) the strengths and weaknesses of individual students and
- (b) the actual functional content of the jobs in different organisations.

This is a serious if traditional deficiency because often students are motivated by the characteristics of the job they know and have aspirations for. Is it possible to develop an operational profile of the components of existing management jobs? Is it possible to analyse the strengths and weaknesses of students to a better degree? Is it possible to improve the monitoring of a student's progress through a course and his or her development after completion? Information of this kind would be invaluable to course designers and tutors alike and if it were available the construction of courses might become more, scientific. But before this could be a practical possibility it would be essential to have a technique for matching the learning needs of the student with the tutorial resources of the teacher/trainer. This would require both a theory and greater knowledge of adult learning.

### Adult Learning

We know little about the process of adult learning and the amount of research undertaken in this field, in comparison with the field of child learning, is sparse. This may be due to a familiarity with the evidence of adult learning which inhibits questions about the process itself and the assumption that individual experience is an adequate substitute for social research. Both industry and the armed forces have over the past thirty-five years sponsored research into skills acquisition. There have also been studies of the "learning curve", production performance and associated areas.

But of the broad spectrum of adult learning we know comparatively little and it is a sobering exercise to list some of the areas of deficiency.

- (a) There is neither a general theory of adult learning nor a special theory of cognitive disadvantage. However, there is an assumption that adult learning is in some way simpler than child learning - though no evidence which would support this contention.
- (b) There is an assumption that an adult attitude change is inevitably linked to similar behavioural change and that "positive" learning produces "positive" behaviour. However, there is some evidence which points in the opposite direction and suggests that far from there being a positive correlation there is in fact a negative linkage. People can and do behave in a contrary fashion.
- (c) Adult learning is often presented and perceived with a value-laden rather than a rational or empirical perspective. The Robbins Committee on Higher Education expressed this in these terms:-

"Education ministers intimately to ultimate ends, in developing man's capacity to understand, to contemplate and to create. And it is a characteristic of the aspirations of this age to feel that, where there is a capacity to pursue such activities, there that capacity should be fostered. The good society desires equality of opportunity for its citizens to become not merely good producers but also good men and women."

The Robbins Committee was, of course, expressing as fact what was merely its opinion. Goodness is a relative value and taking a moralistic view the experience of the 20th century would suggest education can minister equally to wickedness!



- (iii) to assess the effectiveness of their service in the long term (the lack of long term post-consumption evaluation is, in some instances, nothing less than incredible).

If the key agencies in the supply of adult education and training were faced with a demand-dominated market, with a clear pricing mechanism, and freedom of entry for alternative suppliers, one wonders whether they would survive. On the other hand, these organisations are managed by people who are, in the main, committed Civil or community servants and who would presumably like to improve the effectiveness of the service they provide. Presumably, if the right techniques for analysis, evaluation, and assessment were to be developed they would be applied. Under these circumstances, surely, it must only be a question of time before there are moves to apply social science research techniques to adult learning, to establish an empirical data-bank of alternative course designs and, hopefully, develop new systems to assess a student's needs, a teacher's capabilities, and a student's progress both during and after a course. However, the final section of this paper explores some of the difficulties which would be involved in such a programme.

### Seeking Optimum Learning and Teaching Schedules

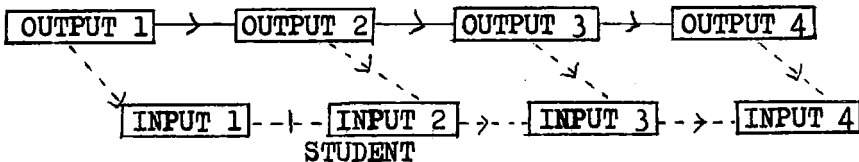
One way of demonstrating that the process of adult learning (and hence teaching) is far from simple is to look at the complexities which can be detected in a model of these processes. These can be presented as a sequence of events which make up a definite schedule. These events can be linked to different sectors of learning and teaching experience. If we take, in order to make the model more "concrete", the area of accountancy, it is possible to isolate four linked sectors of adult learning:-



need and link this with a pattern of presentation which will provide the appropriate motivation. Most teachers attempt to do this on the basis of craft skills - on an intuitive basis. However, when we analyse the process in terms of alternative learning patterns and teaching strategies the dimensions of the problem are revealed.

We must make a second simplifying assumption that the inputs in each sector can be quantified and standardised in terms of content and time duration. Our third assumption is that these sectoral inputs remain fixed over a time period. This is the kind of simplifying device which has been extensively used in the social sciences in order to develop models which can subsequently be compared and contrasted with reality. If we assume a simple linear pattern of teaching output and learning input we can derive the following schedule.

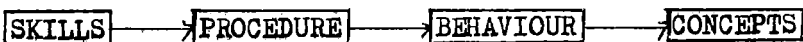
#### TEACHER



With four different inputs which could be combined in any order the total number of combinations is  $4!$ , i.e. 24. How many teachers would consider 24 alternatives before embarking on a given sequence? Yet it is impossible to say on a priori grounds whether a schedule of teaching and learning inputs which followed the pattern

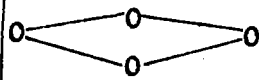
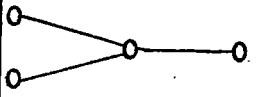
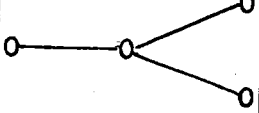
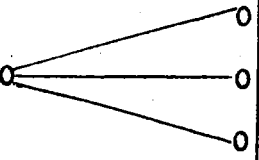
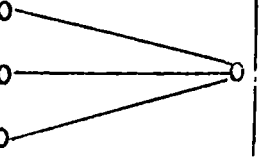


was better, more relevant or efficient than



And there are twenty-two alternative schedules!

We can develop this analysis further if we assume that it is possible to combine elements from each of the four sectors on a dyadic or triadic basis within the standardised time periods. In other words the teaching/learning process could combine, for example, skills and procedures - which is not an impossible synthesis for a skilful teacher. In symbolic notation the total patterns can be represented thus:-

|                     |       | Time $\longrightarrow$                                                              | <u>Combinations</u> |      |
|---------------------|-------|-------------------------------------------------------------------------------------|---------------------|------|
| <u>linear units</u> | (i)   | 0 $\longrightarrow$ 0 $\longrightarrow$ 0 $\longrightarrow$ 0                       | $4!$                | = 24 |
| <u>dyads</u>        | (i)   |    | $\frac{4!}{2!}$     | = 12 |
|                     | (ii)  |    | $\frac{4!}{2!}$     | = 12 |
|                     | (iii) |    | $\frac{4!}{2!}$     | = 12 |
| <u>triads</u>       | (i)   |   | $\frac{4!}{3!}$     | = 4  |
|                     | (ii)  |  | $\frac{4!}{3!}$     | = 4  |

From this simple model of teaching strategies and learning patterns we have been able to derive no less than

68 combinations. Some combinations are, of course, more credible in one mode than another. On the learning input side it is possible to imagine an adult student wanting to be convinced within a given time scale of the relevance and integration of concepts, behaviour and procedures before settling down to the task of acquiring the related skills. However, on the teaching output side it might be difficult for someone to combine these three sectors simultaneously in a tutorial presentation.

If we now remove the simplifying assumptions, it is possible to see the extent of the problem. First, a considerable amount of institutional teaching and learning takes place not on a one-to-one basis but with a group of people. The task for the tutor therefore becomes not only that of matching output to input but also of choosing an optimum strategy in relation to a range of learning requirements. Little wonder that tutors in a variety of different situations adopt a "take it or leave it" attitude; it may be that there is no obvious and mutually satisfactory optimum with certain groups. These difficulties are compounded when we remove the second and third simplifications, namely that sectoral inputs and outputs be regarded as standardised in terms of content, time duration and time period. The simplifications need to be removed because neither the tutor nor the student is a machine and people do vary over time. It is unlikely that four sectoral inputs could be similar given differences in the ease of presentation and "communicability". Thus the complexity of the processes is increased. On the other hand the variability between sectoral inputs might be made subject to limits and thus defined. If the model is modified in this way is it realistic to search for an optimum? It should be obvious from the discussion that we have moved beyond the normal limits of human assessment and analysis into an area where computer facilities would be required to process the data if it were available. If the variability in each sector was limited to five degrees in theoretical terms the

computing task to discover the optimum schedule if linear, dyadic and triadic schedules are still used would comprise of

$$20! + \frac{3 \times 20!}{2!} + \frac{2 \times 20!}{3!} \text{ alternatives.}$$

2!

3!

If a computer were to check a million schedules a second it would take in excess of 100,000 years to complete the task! Clearly a number-crunching exercise in this area is not feasible.

### Conclusion

Scheduling problems are at the centre of all educational and training activity and the "perplexity" which the Robbins Report commented on is not peculiar to management education. The adult student can be regarded as having a schedule of input needs and the teacher an output schedule. However, we have seen that an analysis of variability in the relationship of output to input reveals the difficulties of matching output to input in a constraint free context. Perhaps this provides some insight into the hierarchical and constraint-dominated aspects of educational and training institutions - perhaps without constraints the hunting for optimum schedules would become time consuming, and make it impossible to allocate resources. But within the institutional constraints the teacher is the important managerial element in the learning-teaching process - the normal model is a teacher-determined pattern of interaction. The abnormal model is an individual or group determined pattern. Interestingly, the individual tutorial system used on undergraduate courses at Oxford and Cambridge and post-graduate research in many centres approximates to the abnormal model.

Confronting the full extent of the complexity of combinatory schedules in adult teaching, training and learning is daunting. However, it is possible that short-cut mathematical optimizing techniques developed in the theory of

algorithms and combinatorial theory will reduce the tasks to reasonable proportions. An alternative strategy may be to establish on a systematic basis datum points outside the teaching-learning process. This is already done on an ad hoc non-systematic basis in the providing and enabling institutions usually on the basis of committees sharing insights and individual members either reflecting on or extrapolating from their own experience. But it is unusual for such committees to move outside the limits of their collective experience and commission a survey to establish datum points. What is certain is that the management of educational and training resources has a long way to go before it has the appropriate data and the right kind of tools to accomplish its tasks.