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A STUDY OF THE DIMENSIONS THAT RELATE TO THE EFFECTIVENESS OF TRAINING SYSTEMS: A SYSTEMS APPROACH

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BA(Tas), MBA(Hons), PostGrad Dip T&D(Massey)

A dissertation presented in total fulfilment of the requirement for the degree of Doctor of Philosophy in Organisation Behaviour at Deakin University

School of Management

January 1989
DEAKIN UNIVERSITY

CANDIDATE'S CERTIFICATE

I certify that the thesis entitled 'A Study of the Dimensions that Relate to the Effectiveness of Training Systems: A Systems Approach' and submitted for the degree of Doctor of Philosophy in Organisation Behaviour is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

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The purpose of this thesis is to explore dimensions that relate to the training systems effectiveness in a number of industry categories. The training system is taken as part of the reproducer boundary subsystem within the organisation (Miller 1978).

The research has been developed on the assumption that no single criterion is appropriate as a measure of effectiveness of a training system (Campbell et al 1970). An index of criteria based on the different organisational variables that interact within an organisation is employed in the development of the study. In this research the structural variables (independent variables) including industry category, size and formalisation factors of the sample organisations will be related to the effectiveness of training systems in their organisations.

This research attempts to formulate hypotheses in the field of training system research to contribute to a theory of training system impact studies. The popular areas of research in the field of training have mainly tended to focus separately on the effectiveness of training programmes, the economics of training, the social impact of training and the dynamics of training. To my knowledge there is no research work that tests the relationship between structure and the effectiveness of training systems.
PART 1

THEORETICAL STUDIES

Chapter 1: Organisational Training

Chapter 2: Training Evaluation
Introduction

The objectives of this research are to develop a conceptual model for understanding the training system as a functioning strategic unit, to develop a set of criteria for exploring the dimensions that relate to the system’s effectiveness, and to better understand the relationship between the corporate training system and the organisation of which it is a part.

In the two chapters of Part 1, the workings of the training organisation, its functions and structure in an operational context will be discussed. These two chapters are important in understanding the training department as a functional strategic subsystem of an organisation. Its relationship with the dimensions of training effectiveness are the central concern of this thesis.

Chapter 1 will consider the training process in organisations and how the training elements influence training effectiveness and organisational performance. The relevant literature is examined in this chapter, which concludes with a model that explains relationships between factors of the training system and how they are related to the overall effectiveness of the training system.

Chapter 2 examines the training function in total as a coherent part of an open system network. This chapter identifies the conceptual and theoretical aspects needed to establish the dimensions of training systems effectiveness by first considering different approaches to the evaluation of training systems effectiveness.
CHAPTER 1

ORGANISATIONAL TRAINING

1.1 Introduction

Training can be an effective device to assist organisations in attaining their goals. To achieve this the training function must be seen both as a proactive device to reach the stated goals of the organisation and reactive to the needs of the organisation. Training is a management strategy (Blumenfield and Crane: 1973) and has to be delivered to the organisation and its employees as an integral part of the organisational system. The success of the training system then depends on overall acceptance by the organisation and its employees that training is beneficial to them. Without this understanding and acceptance of the training function, the overall effectiveness of the training system as an effective subsystem of the organisation is limited.

1.2 Defining Training Elements

The concept of an holistic system approach model for defining, diagnosing, and successfully treating organisational needs, including the determination of useful training is suggested by Professor Roger Kaufman (1983: pp.3-11). Kaufman suggests a systems approach consisting of two basic phases:

1) Identifying, defining, documenting and selecting needs.
2) Getting from what is to what should be.

In rationalising the training strategy within an organisation, Kaufman’s schema of defining the organisational elements has been adapted to suit the current research (Kaufman et al: 1984, p.22).
Figure 1.1 defines four categories which describe the important elements in the understanding and evaluation of the training system's effectiveness. These categories, called training efforts, training results and organisational impact, deal with factors internal to the organisation; societal impact deals with external factors.

In most of the literature reviewed, it appears that the training evaluation in organisations stops with the evaluation of the training function. This is supported by interviews with managers and the employees in organisations covered by this research. Resources are, as a rule, expanded to evaluating training efforts and training results but with little or no concentration on organisational impact and/or societal impact. Management has failed to realise that training efforts and results are only useful to the extent to which they have positive organisational and societal impacts. The training function has to consider the organisational and societal factors which may influence the success of the training products and outputs. The concept of organisational survival which is based on the organisational ability to interact with its environment should be extended to the subsystems of an organisation, when evaluating their effectiveness within the overall system. Understanding of the internal workings of the training function is important, but the utility of the training system should be judged by the impact it has on the overall organisation and the environment, as measured by the success of the organisation operating in a reactive environment.

The immediate criterion that is usually used to evaluate the training system is the success it has in meeting the demands of the organisation, rather than its societal impact. The success of an organisation also depends on the acceptance of the organisation’s output by the society it serves. Societal impact, then, should also be included as a measure in the study of the organisational effectiveness.
Figure 1.1: Defining the training elements (adapted from Kaufman, R., Mayer, H., and Butz, R. (1984). Defining and classifying the organisational elements, Performance and Instruction Journal, May, p.22).
Training evaluation in organisations is normally based on input-output studies with very little reference to outcomes. The contributions of training programmes and training systems to performance are measured by the resource input to resource output criterion which usually also reflects the narrow overall philosophy of measuring the organisation's performance in terms of output gain, as represented by economic and monetary worth. This indeed is a very narrow method of observing training system effectiveness. Output is based on the study of the efficient use of the inputs such as labour, capital, and resources while outcomes are based on the effective use of the inputs to achieve an optimum use of resources.

In this thesis the dimensions of effectiveness are not restricted to one particular criterion based on output but are extended to include an index of outcomes (see Figure 3.3). The construction of an index of outcomes or an index of criteria of training system effectiveness is the main thrust of this thesis and will be mentioned in detail in other chapters.

In effect this thesis is based on an approach of a systems model in three parts, designed to be holistic and interactive. The objective of the Theoretical Model illustrated in Figure 3.3 is to achieve this purpose. The model allows for a selection of integrated functions in an organisation to interact with the environmental. The responses from these interactions are then fed back into the system through the feedback channels.

1.3 Training and Organisational Performance

Organisations institute training programs in the realisation that training of their personnel in skills and organisation setting will increase the output of the organisation. Most training programs hope to increase managerial effectiveness (Hand and Slocum: 1972, pp.412-417), work skills and employee motivation, changes in work related
behaviour (Hautaluoma: 1975; Fournier: 1978), and reduce employee turnover (Raphael: 1975, pp.97-98) and grievance rates, to mention a few of the paths which the results of training may take.

Training in the last two decades has become an important activity in most large commercial and public organisations. The growth of training in organisations has been attributed to a number of factors. Some of the reasons for this heightened activity are:

1) Organisations have become complex due to increases in demand and the changing demands for output.

2) The complexity of organisations require the fine-tuning of resources, including human resources.

3) The increased application of technology requires training and retraining of the workforce to acquire sophisticated skills needed to perform the new job design.

4) The advent of sophisticated equipment and skills required to perform them have made skilled workers valuable to organisations. This has led to an awareness that to maintain employee stability, organisations will have to successfully handle the career objectives of their employees. This involves the delicate balancing of employee needs and company objectives.

5) Training is also seen in many organisations as a refresher function and often as 'funtime' group activities. The purpose for this new orientation in training is that it is now seen as a vehicle to counter obsolescence of knowledge, executive burnout, and employees who have plateaued or are in dead-end jobs (Holoviak: 1982, p.6).

6) The need for training as a function in manpower planning relates not to today's needs but to the future. This is in keeping with the concept of career path development of the organisation's employees. Therefore the training function in manpower planning
is not just the preparation of employees to meet future manpower needs but also to develop the organisation for expansion to cater for the future needs of its highly motivated and knowledgeable workforce (Henderson: 1981, p.315).

Holoviak's research (1982, p.7) has revealed that companies that provided greater amounts of management and supervisory training also achieved higher productivity as shown in Table 1.1.

Table 1.1 Training in relation to productivity

<table>
<thead>
<tr>
<th>Observation</th>
<th>Productivity</th>
<th>Type of training</th>
<th>Formal training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Company sponsored</td>
<td></td>
</tr>
<tr>
<td>Group 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>12.72</td>
<td>100%</td>
<td>-</td>
</tr>
<tr>
<td>B1</td>
<td>6.98</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>C1</td>
<td>6.40</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>9.28</td>
<td>75%</td>
<td>12.5%</td>
</tr>
<tr>
<td>B2</td>
<td>7.42</td>
<td>65.5%</td>
<td>50%</td>
</tr>
<tr>
<td>C2</td>
<td>6.12</td>
<td>0%</td>
<td>13%</td>
</tr>
</tbody>
</table>

a) Percentage based on 33 persons interviewed.
b) Formal training programs are those programs offered apart from any company affiliation. Programs of this nature are those offered by colleges and universities.
c) Productivity is output/man-day in terms of tons of coal.


1.4 The Training Process

Training has been undergoing some important changes over the past two or three decades. Trainers have not simply changed their techniques, but have often had to change their orientation to training; the way they think about what they do.

In many cases, however, there are trainers who have not kept up with the changes, or have not become aware of them. Because of this trainers are often not training as effectively as they could be doing (Rummlor: 1977).
In a paper presented to the Management Educator's Conference at Sydney University in November 1987, Dr Ian Meadows (1987) stressed that 'Changes in Technology, social values, financial systems, political forces, etc., create an atmosphere of complexity and turbulence in which only those enterprises that respond and adapt quickly are likely to survive' (p.1) and 'yet management systems and structures remain, by and large, in the conventional mould.' (p.2). The general thrust of his paper was advocacy of structural changes in Australian management education and developmental training to reflect the changing nature of the management function.

1.4.1 Knowledge-based training

Traditionally much of the training done has been 'knowledge-based' or as Weber, seventy years ago put it 'the exercise of control on the basis of knowledge' (Weber: 1964, p.339). The transfer of knowledge from the trainer to the trainee is of paramount importance. We still see this in many training courses today. The trainer runs the course by giving lectures or presentations on a particular subject. Then to test whether the student knows enough about the subject the student is given a test or an examination where questions are asked about the subject.

Some problems which have been found with this method of training are as follows:

a) Knowing about a job does not necessarily mean that a person can do the job. In fact it is often found the people who are best at actually doing the job may be worst at answering questions or performing under examination conditions than people who cannot do the job (Maher and Kur: 1983, p.100).

b) Courses are often based on the knowledge the instructor has and enjoys teaching rather than what the learners need to know (Peterson: 1977; Jacobs: 1983, p.30). In some training situations a discrepancy occurs when the trainer has the knowledge and skill but fails to implement proper training because he or she feels it is not important (Hannum: 1983, p.16.)
1.4.2 **Skill-based training**

There has been a move to define training as the management of learning new behaviour to improve an individual’s performance (Runnler: 1977). So rather than concentrating on 'knowing about' a subject, skills-based training looks at how to do the job. Training is employed where a person cannot perform the job to the standard required because of the lack of a skill. Training courses are run giving learners the opportunity to learn the skill, to practise it, and to get feedback on how well they are doing. Then the learner is evaluated to see that he/she can perform the skill to the required standard. The knowledge and skills acquired are immediately job relevant (Holt and Stevenson: 1980, p.3).

Skill-based training has some advantages over knowledge-based training. The following are some of the benefits Holt and Stevenson (1980, pp.3-6) found when they implemented individualised training at Bell Telephone Laboratories to replace group-paced instruction:

a) The learner actually has the skills needed to do the job.

b) The learner can learn at his own pace. Many knowledge-based courses make the students stay on the course for a set time, and students learn different amounts in that time according to how fast they learn. Most skill-based courses make learners stay until they have reached the standard set (Ross: 1982, p.194). So everyone reaches the 'same' standard but some may be much faster at learning than others.

c) Holt and Stevenson found that in the long term, time and cost savings are made by employing the skill-based training method.

1.4.3 **Competency-based training**

Competency based training method looks at the competencies needed to perform a job. Skills can be competencies, as skills are required for an employee to be effective. For example, to be an effective
manager a number of skills are required to perform the managerial functions properly (Miner: 1982). However the manager should not only have the skills but he should also be results-oriented. This means the manager is not only concerned with how it is done but also what is achieved. The competency based training method then not only looks at the skill required to perform a job but also, how well the job is done. In the fifteen years since Mintzberg (1973) drew attention to the "competency" essential to success in managerial work (interpersonal, informational, decisional) other researchers have developed these concepts in training terms which are beginning to have some impact on training methods (Boyatzis: 1982; Whelton and Cameron: 1984; Prideaux: 1986; Morgan: 1987).

Competency based training is said to be criterion referenced (Hannum: 1980, p.6; Shoemaker: 1976, p.48). Criterion referenced training is learning-centered and provides the flexibility and resources that each trainee requires to achieve the objectives on an individual basis.

In creating an effective training system, four basic competencies are identified:

a) Having a learning orientation.

b) The skill of deciding where training is appropriate.

c) Having a systematic development approach to change.

d) Having a concept of excellence.

1.4.3.1 Learning orientation

It has been found that managers who specify results get better performance from their employees than managers who specify activities (Love: 1983). There are a number of reasons for this:
a) The employee can make decisions on how to get the results more efficiently if circumstances change.

b) Employees can supervise and control their own work.

c) The activities specified may not be the best method for achieving performance.

d) Employees tend to perform better when they have a clear goal.

This concept in training is relatively new in Australia as is evidenced by the lack of research into training methodologies (Meadows: 1987). Most of the changes that have happened in Australia in recent years have mainly been as a result of the impact of adoption of new methods from the United States of America and Japan, with very little modification. This is evident in many multinational corporations. In changing from activity-oriented training to result oriented training, a change has to be made from a teaching or training orientation to that of a learning orientation.

Traditionally trainers have defined their work as teaching trainees. Trainers have assumed that trainees learn in the same way, and at the same pace. This misconception of the training function is evident in many of Australia's tertiary institutions. Increasing number of students are being taught in large classrooms with very little scope for learning. Because of the lack of research and concrete evidence into training methods in the Australian context to indicate otherwise, no serious objection has come forth from academia or the public at large about increasing numbers of students in classrooms. A statistical increase of 40% in graduates per year from 88,000 in 1987 to 125,000 by 2001 is the Commonwealth Government's targeted figure. This is to be achieved with no significant increase in Government financial contributions to higher education (Nicholls: 1988, p.10).

A trainer with a learning orientation first identifies what the trainees should learn and then the trainer tells the trainees what they will have to do in order for them to know that what they have
learnt is what is required. This concept of training involves a two-way process of interaction between the trainer and the trainee rather than the traditional teacher-student relationship (Noad: 1980, p.22).

This concept of training also assumes that the trainer benefits in the interaction with the trainees in meeting the demands of the trainees and the organisational system.

There are a number of other areas where the learning-centred trainer differs from the teaching or training centred trainer.

Design of the training course

In designing a training course the trainer's first task is to define the skills or competencies needed by the trainees to effectively perform their work. The second step is to divide the skills into units or training modules such that it would be a manageable learning task for the trainees to handle confidently. This was the rationale for many Australian tertiary institutions to switch from the traditional year-end final examinations and a three term a year academic system to the semester system with more emphasis on programmed learning and assessment throughout the semester. Learners only have to learn material that helps them achieve this competence.

The teaching-centred trainer, on the other hand, often decides what will go into the training course on the basis of what the person likes to teach, or what has been taught before, or what the trainer has learnt, rather than what the trainee needs to know.

The trainer's role

The role of the trainer in a learning-centred environment is that of a coordinator or a guide who is there to manage the learning process and evaluate the competencies of the trainees (Mumford: 1971, pp.68-73). The relationship of the trainer and the trainee is that of a coordinator and a participant rather than a teacher and student, which implies a superior-subordinate relationship. This new
perspective in training is becoming more evident in graduate schools, where students are referred to as participants and lecturers as program convenors or coordinators (Deakin University's MBA program is an example).

Testing

The learning-centred trainer tests to see whether the learner is competent before the trainee graduates from the training course or module. Testing the competence of the trainees is based on an agreed 'formula' between the trainer and the trainee.

The teaching-centred trainer sometimes tests the trainees to see if they have reached a stated competency, but this is not invariably the rule. Tests are often based on knowledge rather than competence. The trainer may also grade, by comparing the trainee with the performance of other trainees, rather than whether the trainee is competent or not (Stolovitch: 1980, p.17). This was a criticism of the higher education system in Australia and was the basis for the introduction of the binary higher education system in the 1960's. Universities were seen as 'ivory towers of knowledge' where the academics were removed from the practicality of the real world. The Colleges of Advanced Education were introduced to 'balance' theoretical education with skill and competency based education (Selvarajah: 1987). With the breaking down of the binary system the validity of this distinction is questionable. Weekes (1987) believes that the university system in Australia functions as a closed system with very little interaction with the external environment. Selvarajah (1986) supports this view when he suggests that the teaching methods of the university system generally do not reflect the changes in the environment. No education system is a closed system, and dividing a system on a prescriptive and a descriptive basis was wrong in the first place. Education should be a combination of both (Quinn, Mintzberg and James: 1988, pp.xvii - xviii). Their concluding remark is appropriate to the current education institutional debate in Australia: 'How can people manage systems they do not understand?' (p.xviii).
1.4.3.2 Appropriateness of training

Not all organisational problems can be solved by the training system. Many organisations expect the training department to change employees' attitudes, motivate workers and make workers loyal to the organisation along with helping them gain skills and competencies. Training in skills and measuring employees' competence are quantifiable variables in the spectrum of employees' performance measurements. Work attitudes might be the symptoms of some deep rooted organisational problems which might need intervention strategies by an organisational development (OD) specialist.

Organisations have the expectation that problems relating to employee performance can be solved by training. Budd (1984, p.2) indicates that the relationship between training performance and job performance has not been established. It is the task of competent trainers to inform the organisation that the problem cannot be solved by training as an immediate solution, but an action from the training department might be called upon if the problem identified can be solved by training at a later stage. Sometimes the problem identified might be structural; in that case, removing it can solve the problem and no further training is required. A respondent in the current research survey stated that the 'best thing that happened to the company was the removal of the training manager'. The training manager was too autocratic and the training staff reflected this attitude to the organisation in general. Many of the employees saw the training activity as a punishment for their lack of performance or sometimes as a disciplinary action for disagreement with management. As Mager and Pipe (1970, p.82) state 'Training is a solution not a problem'. Trainers will have to decide when training is going to solve a performance problem. For example, a good performance feedback system within the job environment has been shown to improve employee performance (Brown et al: 1980; Kreitner et al: 1977; Stoerzinger et al. : 1978; Budd: 1984) and if this is the 'solution' to an organisational problem then training is not the answer.
A number of studies (Rummler: 1977; Ross: 1984) have indicated that resources are wasted in training programs that are neither directed towards improving training effectiveness nor cost effectiveness. Rummler (p.50) says that training function should not be viewed as a keeper of the corporate 'school-house' but as a 'performance improver'. The concept of training, he says, should shift from 'number of employees trained or training programs produced' to 'organization performance improved'. Similarly Ross (pp.182-183) states that in business, training is seen as a component of operating cost rather than as an investment in productivity improvement. Ross (p.182) also states that in a number of studies conducted between 1967 and 1976, he and his colleagues could not agree on a common definition of what training was, where it was conducted, or what it intended to accomplish. Due to this lack of training function definition, trainers are unable to make a cogent case for training benefits. As a result trainers present an unconvincing view to management that training is the solution to all organisational performance problems (Ross, p.183).

For training to be implemented as a solution to a performance problem it should have either of these two dimensions (Mager and Pipe: 1970):

a) Employees are doing something that they should not be doing.

b) Employees are not doing something that they should be doing.

The next issue that relates to performance problems is that training can only solve behavioural problems. If a problem does not relate to the goals of the organisation then it might not be necessary to solve. Therefore it is important that trainers identify whether the problem is important for the organisation to increase its resources to solve it (Ross: 1982, p.194).
Herzberg (1967) has identified three types of employee performance problems in organisations in his 'Human Performance Formula'.

\[ \text{Human performance} = \text{ability} \times \text{motivation} \times \text{opportunity} \]

According to the formula, an employee in order to perform, needs to have skill or ability to do the job, he must want to do it, and he must get an opportunity to do it. If any of these factors are absent then there is a performance problem.

Training is one solution that can be used where there is an organisational performance problem. Training is primarily a way of improving a person's ability to do something. It helps the employee learn the competencies needed to be effective in the job. Sometimes training can have an effect on a person's motivation; however, to make it last the employee must be well managed. Good management is essential to ensure that an employee is given the opportunity to perform and is motivated to perform (Miner: 1982). Often the training problem does not lie in the performance of the employee but his performance reflects the inability of the superior's inability to manage. In this case it is the superior who may need training, not the worker.

1.5 Systematic development

The job of the training system is to manage change effectively. Trainers not only help people to change their behaviour in order to make them more effective in their work, trainers also help groups or organisations to change and become more effective.

Blake and Mouton (1969), have identified three approaches to change:

Evolution

In the evolutionary approach to change, training plays a secondary role in directing the organisation to adapt to change. The
problem with this approach is that the 'accepted way' will only change when the organisation sees that there is a real need to change. This situation is ideal where the management places priority on maintaining a status quo on the organisational situation or that the organisation is in a static environment. Prigogine (1978) says organisations are far from equilibrium and are open to a changing environment. He sees this state of affairs as crucial to the survival of organisations.

The concepts of 'self-renewal' (Weekes and Muster: 1987), 'flow equilibrium' (von Bertalanffy: 1975), 'dissipative structures' (Prigogine: 1978), 'autopoiesis' (Varela et al: 1974) and 'punctuated equilibrium' (Eldredge: 1986) should not be confused with the concept of an evolutionary approach to change. The basic difference between the evolutionary approach and the concepts of the other authors mentioned, is that knowledge and information flow within the subsystems and the environmental system is not seen as an essential prerequisite for the survival of the organisational system in the evolutionary approach. The evolutionary approach is reactive in nature while the works of the authors cited above suggest a proactive approach to changes induced by the system's environment.

Revolution

The concept of revolution as a change agent is not new in any society. Revolution is often the result of a prolonged period of systems adaptation to the evolutionary approach to change. When the accepted way of doing things falls further and further behind what needs to be done in a system, people become disillusioned with the operation of the system and a total change is sought.

In accepting the revolutionary approach as a change agent, advantages involved in the old way of doing things are also lost in the process. Many organisations that do not prepare themselves for managerial succession are exposed to this sort of change by an over-enthusiastic successor. Blake and Mouton are of the opinion that
neither the evolutionary nor the revolutionary approach are particularly effective approaches to change and they advocate the Systematic Development approach.

In the systematic development approach to change, the philosophy on which this research is founded, the 'ideal state' is sought. It requires the definition of all the processes, functions and structural variables that influence the best results possible from the system. This approach then requires the accurate identification of the goals and the missions of the system. The second stage in this process is to establish instruments of measurement for measuring the effectiveness of the processes, functions and structural variables that contribute to the results of the system. Most of the measures should be based on quantitative measurements but with qualitative interpretations. The third stage in this process is to measure the difference between the actual and the ideal and the difference is the desired change. In training terminology this is known as the training 'gap' and requires bridging. Therefore the fourth stage in the process is to find training and organisational development methods to create change towards the ideal state. Implementation, measuring the change and finally establishing a feedback system for monitoring future changes are all part of the systematic development approach.

The systematic approach also demands the development of a model or models to give an holistic approach to change. The stages of the systematic development approach can be transformed into a model for change as shown in Figure 3.2.

Kaufman (1983, p.14) refers to this concept in training as the systems approach to training. It is an holistic approach which includes all the organisational elements of inputs, processes, products, output and outcomes. It is proactive in nature since it starts with inputs which are external to the system and the outcome is the product of the various influences from within and without the system. The holistic approach does not make any assumptions about the current organisation's 'Organizational Results, Organizational Efforts or Structure' (p.14).
This approach avoids the measurement of the system's worth by evaluation based on a single goal-based evaluation, like the financial worth of an organisation, based on profits. It is also interactive and establishes a knowledge and information feedback system based on the environmental impact. This approach then assumes that the system is in a dynamic environment where adaptation to the environmental impact is necessary for the system's survival (Coff: 1984, p.14).

Definition of system variables
influencing results

Establishing instruments of measurement

Measurement of the variables
to establish the gap

Identify change agents

Develop change methods and implement change

Measure change
(It is possible to use the already established instruments of measurement)

Develop a feedback system

Figure 1.2 A systematic development plan for implementing change
1.5.1 **Training excellence**

The training system should ideally function within the framework of excellence in management as advocated by Peters and Waterman (1983). The training system, like the other subsystems in an organisation, is not going to be effective if the overall philosophy of the organisation is wanting in management excellence. The concept of excellence, based on the eight criteria that Peters and Waterman have identified can be applied to the training system also:

1) **A bias for action:** The training department can be action-oriented, keeping abreast of new training technologies, encouraging its trainers to seek knowledge through new training programs for trainers, keeping an ongoing link with the other subsystems of the organisation, and the outside training bodies. The training department should not only be seen to be creating an effective work environment but it should also be actively doing research into the needs of the organisation and its employees.

2) **Close to the customer:** The customers of the training department in an organisation are the trainees and potential trainees in the organisation. The training methods to be employed should be seen as products and that they have been created by first identifying the trainees and their needs. The products are then tailor-made to cater for this need. Communication is an important aspect of this concept. In an open system the effectiveness of the training department and its survival from organisational scrutiny and competition for scarce resources depends on its ability to observe a truly market-oriented philosophy. Observations of the training systems in Australian organisations suggest that this feature is lacking in many of them. Training is often conducted without a training need analysis. This view is supported by Spitzer (1980) who, as a Visiting Fellow at Curtin University, judged Australia’s effort in training to be quite inferior to that of the USA.

Being close to the customer also means feedback of information to determine if what was wanted has been received.
3) **Autonomy and entrepreneurship:** This concept is based on the leadership style of the training manager. If the training manager exhibits an autocratic or a dogmatic style of leadership the staff in the training department will lack autonomy and the entrepreneurial skills required to take responsibility for courses, since authority is largely vested in the training manager.

4) **Productivity through people:** Productivity through people implies that the employees in an organisation are important to the organisation and its survival. Their perceptions of the systems and the subsystems of the organisation are also important. Often the perceptions of employees, of the effectiveness of systems are wrong due to a lack of information and communication. If this is the case all that is required is a change in the information flow system, which is structural. A viable system of people audit is far from reality (Selvarajah et al: 1980). "Productivity through people" is a cliche to satisfy employee demands by the managament according to some employees and unions. "Employee involvement techniques and other similar methods have been viewed as a management ploy by some unions in Australia" says a respondent in the current research survey.

The majority of worker participation schemes in New Zealand were a failure as reported by the New Zealand Department of Labour in 1976. The Department has suggested a number of reasons for this (Selvarajah: 1985b, p.88).

First there were the problems that arose in trying to initiate the scheme:

- Problems in deciding just what form of worker participation was to be implemented.
- Difficulties in deciding the areas of control or joint decision making.
- Difficulties in deciding the method of arbitration when one of the two parties disagrees with the other.
In addition there were problems that arose after the implementation of these schemes. Three of the most notable areas are:

- A distinct unwillingness on the part of managers to relinquish their control over 'managing' the affairs of the company.
- An unwillingness on the part of unions to relinquish their control over 'managing' the affairs of their union.
- Finally, perceptions of these schemes as a means of cost-cutting, increasing production and encouraging a docile and cooperative workforce.

It appears that most of these schemes failed to genuinely consider the well-being of the employee or recognise the unique contribution the employee could make to the production process (Selvarajah: 1985b).

To change this belief, perhaps it is necessary to make employees as accountable as any other scarce resources in the input-output system (Blumenfield and Crane: 1973, p.299).

5) **Hands on, value-driven:** Values differ among organisations and so too does the concept of excellence vary from organisation to organisation. The concept of organisational excellence is based on management's perception of organisational performance. Some organisations place greater emphasis on employee relations and satisfaction while others consider management control as a top priority in the pursuit of management excellence.

Therefore in studying systems performance it is essential that the systems effectiveness measurements be developed in the context of the particular organisational culture. The cultural variables in organisations, groups and even nations determine their concepts of excellence. This is in line with the modern day thinking of the contingency approach.
6) **Sticking to one’s knitting:** Good training departments should only conduct training in which they are competent. The training department should recognise that often the most effective form of training is on-line training conducted by line management (Jinks: 1979, p.143). It is the responsibility of the training department to coordinate the training activity of the organisation but it should believe in the delegation of authority and responsibility of the training function where necessary. In some organisations the training function is vested in the personnel department. In such companies it is useful for the organisations to differentiate the activities involved in the training function from that of the personnel function, though there is an inter-relationship between the two.

7) **Simple form, lean staff:** Organisational growth should be ordered and the growth can be monitored such that control and authority can be vested in smaller units within the organisation. Likewise the training department should also keep the form as simple as possible and as an effective working system with proper staff coordination and input-output resource control.

8) **Simultaneous loose-tight properties:** This concept is very rarely understood by organisations. For the smooth running of organisations and to strive towards excellence in management, the relationships between organisational subsystems must be ‘fine-tuned’. Many companies are experimenting with the best form of organisational relationships between the subsystems to achieve the best results. In this process there are changes being made to the processes of decision making, communication, authority and control and other functions of management.

Peters and Waterman’s concept of excellence has been chosen to emphasise that a similar understanding of excellence can also be applied to the training function. Their idea of excellence is useful to most systems of management and the modified application as suggested in this research is useful in explaining the concept of excellence in relation to training systems and therefore its contribution to the maintenance of an effective organisation.
The eight attributes of excellent organisations only provides a framework for allowing some form of rational discussion. Peters and Waterman's work has been subjected to a number of criticism (Carroll: 1983) as follows. The authors fail to explain why:

- favourable cultures occur in some companies and not in others.
- some companies may lose their positive attitudes.
- management effectiveness has not been included as a measure of corporate performance.
- excellent has been narrowly defined.
- they have chosen a purely rational model for explaining corporate performance.

However, in the author's view, Peters and Waterman's eight attributes of excellence are useful in a modified form. They form the basis for a training systems concept of excellence and do not create a 'numerative determinism' (Carroll, p.88) as found in a purely rational model. Such a model does not form the basis for determining systems effectiveness in this thesis.

1.6 Relationship between factors of the Training System

To create an understanding for this study, the relationship between the factors of the training system is provided in Figure 1.3. The depiction of the eight interconnected areas illustrates the pivotal nature of the training department within the organisational training system. Budd (1984, p.4) has used this rationale in studying the interconnected areas which have provided logical groupings for the study of job performance. In her study the areas are: the trainee, the organisation, the training, and the relationship of these factors (p.4). This logic is used in the current study and the model is developed further with the addition of a formalised training department structure.
Figure 1.3 Relationships between the factors of the training system.

In the Figure, the trainee characteristics are related to the performance of the job and therefore are job related (Boyd et al: 1975; Leftowitz: 1983). The trainee's personal characteristics are also of importance, for example, sex, age, aptitude, cultural heritage, socio-economic status and personal lifestyle (McFarlane et al: 1979). The factors that describe the organisational characteristics that are of importance to the training system are the management support for and commitment to training within the organisation (Zigou: 1984; Broad: 1982), the rewards and sanctions climate (Kaufman: 1978; Salipante & Goodman: 1976), the overall organisational climate (Beatty: 1974; Friedlander & Greenburg: 1971; Kay, 1972) and the absence of system constraints (Goldstein: 1978), for example the lack of management training policy, and resource constraints and mechanisms for handling conflict between the training system and the other parts of the organisation.
The characteristics of training are job-related. The methods of training are of importance depending on the form of skill sought by the trainee or seen by the organisation as required of the trainee to perform a particular job within the organisational system. On-the-job or on-line training is most common where the immediate supervisor takes on the role of the trainer and is responsible for the transfer of skill (Laabs et al.: 1979). In organisations where a training department or the training function is not formalised this is the main form of training activity. Evaluation of the employee on learning of skill is left to the immediate superior. The second type of training is off-the-job training (Latham and Saari: 1979; Boyd et al.: 1975). In this style of training, employees are sent to training centres either on the company premises or outside them for specialised training. Ideally, the evaluation of the trainee is conducted during and after the training session and the evaluation is fed back to the organisation and the trainee (Eaton et al.: 1980).

Within the trainee/organisation relationship is encompassed the commitment of the trainee to the organisational goals and mission. This includes the trainee’s perception of the organisation’s commitment to his needs and aspirations within the organisation (Goldstein: 1978). A commitment by the trainee to organisational objectives is the final measure of training success.

In the organisational/training relationship, the commitment of the organisation as a whole, including the other functional areas of organisation and of top management, is seen as crucial to the effectiveness of the training methods employed, whether they be on-the-job or off-the-job (Laab et al.: 1977; Goldstein: 1980). Realistic funding and other resources allocation are some of the factors that will enhance the effectiveness of this relationship.

Among the factors that contribute to the trainee/training relationship is the supervisor’s or trainer’s assessment of the trainee (Krant: 1975; Trimmer: 1974). Assessment of trainee performance can be made over a long apprenticeship period and both formative evaluation and summative evaluation are often used. Short
course training, which is often off-the-job, involves only summative evaluation. The weakness of this type of evaluation is that it is very difficult to measure whether the training has contributed to any improvement in the trainee’s skill (Reilly and Manesa; 1979). Post-training evaluation is of importance in many organisations as a measure of training effectiveness in the initial period after training (Robertson and Downs: 1979; Siegel: 1978). A trainee can lapse back to the former mode (specified as unskilled in a particular job situation) if new skills or competencies are not reinforced by organisational commitment to the required change or the trainee’s attitude to the relevance of the training activity. Brandenburg’s (1982) survey of special interest groups in the American Society for Training and Development (ASTD) and the American Educational Research Association (AERA) showed that assessment techniques requiring longitudinal follow-up of trainees were least used.

The relationship of the training department with the trainee is not a line authority relationship. The training department is typically seen as a functional unit serving the needs of the various functional departments within the organisation in meeting their training requirements. Requests for training are made in both directions (Downey & Duffy: 1978; Krant: 1975; Mayfield: 1972). Management of functional departments can request specific or specialised training for their employees or the training department can, within the overall planning of manpower needs in the organisation, request certain training to be implemented within the functional areas of the organisation or request trainees to be nominated by functional departments for specific training.

The trainee/training department relationship is normally within the control of the training department (Budd: 1984). When the training department and its function are formalised the department assumes control over the overall training throughout the organisation. The ability to assess overall effectiveness of training in the organisation is also vested in the training department. Given that this is the case, the supervisors or line trainers are then also
responsible to the training manager for the training of their department employees within the overall organisation's manpower planning and development plan.

In the organisation/training department relationship, there should be a commitment at top management emphasising the role or status of the training department and the training function within the overall organisation (McFarlane et al: 1979). The top management's commitment to the training function and support, by way of allocation of appropriate funding and other resources to training, is important, if training is to be a major function of the organisation. The support of functional departments is also important to the training department's role as the provider for training needs. This is often an area of conflict (Goldstein: 1978). Many functional departments within organisations that have developed prior to the emphasis given to formalised training function, still see themselves as the providers of training for their employees. The training department is seen as a threat to their sphere of control and authority.

The characteristics of these eight relationships identify the factors that contribute to the overall effectiveness of the training system. In the eight categories, only trainee/training relationships are under the influence of the training department. However, in measuring the overall performance of the training system, its effectiveness is measured by how well or how badly it operates within the overall organisation as shown in the figure.

1.7 Summary

In this chapter we examined the training process in organisations and how the training elements influenced training and organisational performance. In so doing, the various techniques in training were considered in terms of effectiveness and in the context of changing environmental needs. The concept of systematic development and the training process was considered relevant to this study and their significance to this research was explained. Peters and Waterman's eight principles of management excellence were applied to the training system and the effectiveness of the training system was explained within this framework of managerial excellence.
Finally eight relationships between factors of the training system were explained and discussed using a model. This model, adapted from Budd (1984) explains not only relationships between variables, but also how they may or may not contribute to the overall effectiveness of the training system.
CHAPTER 2

TRAINING EVALUATION

2.1 Introduction

In many of the organisations observed by the author, and from the literature (Burke: 1969; Homer: 1968) on training, the general view expressed is that the benefits of training have been taken on faith rather than on the effectiveness of the training function based on a systemic and holistic approach to the evaluation of training. Kanes (1976, p.291) supports this view in his statement:

The bewilderment of many administrators who have confronted the literature on evaluation is as much a reflection of the major controversies that rage within that field on very basic issues as it is an indication of a mismatch in technical expertise. Perhaps the most pointed example of a source of such bewilderment is the fact that social scientists still can’t agree on how to measure change, or indeed whether it is even proper to make the attempt. For the typical administrator to whom change in such things as his pay, his performance, his children’s height, and his subordinates’ attitudes has never seemed to be a particularly complex phenomenon, all the fuss about measuring change must seem incomprehensible or worse, alienating.

This view is difficult to believe, especially when the survival of organisations in the 1980’s is dependent on the competitive edge that they have to maintain against their major competitors and being result oriented. Managers are expected to be ‘hard headed, practical, cost-conscious and result oriented’ (Burke: 1969, p.1) and yet when it comes to the training function that vision is limited.

If training is to become a useful function in the organisation it has to be systematic and the training activities will have to be carefully controlled, researched and evaluated as to their purpose and objectivity (Goff: 1984, p.14). In many organisations the training function has very little credibility within the organisation but is seen as a necessity for the overall image of the organisation (De Phillips, Berliner, and Gibbin: 1960, pp.5-6). This view to an extent has been brought about by the training department and its
staff and sometimes by the organisation itself (Goldstein: 1979, p.9). The activities of the training department are often without direction, and planning of training is seldom based on requests from line management (Miner: 1982; Smith: 1980, p.72). Many firms conduct training based on the 'fads and fashions' of the day which have very little to do with the training needs of the organisation or the employees (Campbell: 1971). In the author's interviews with training managers he was told by a manager that Quality Circles (QC) techniques are no longer in fashion and that they are now into Just in Time (JIT). Another manager said that they do not believe in Employee Participation (EP) but engage a new technique called Employee Involvement (EI) for training of their employees in worker participation. This implies that many of our training managers are gullible and will jump from one bandwagon to another as the fads and fashions change (Campbell: 1971). This causes confusion to the trainee and ultimately the failure of worker participation schemes, as reported for example by the New Zealand Department of Labour in 1976 (Selvarajah: 1985b, p.88).

Management has for too long escaped the need for accountability for use of its human resources and until this becomes mandatory in organisations the true measurement of organisational effectiveness is not possible (Selvarajah et al: 1980). This fault of organisations has also been exaggerated by management promoting the training department as a 'last place of refuge' for personnel who cannot be productive in other parts of the organisation. Many of the training managers and officers in organisations are without proper training qualifications and have had little exposure to formal training (Pepper: 1984, pp.160-161).

According to Burke (1969), training staff will not, by their own efforts, create this demand for rigorous research and evaluation of training. He gives two examples to support his conclusion.

First the reluctance of the trainers to let an unbiased 'outsider' evaluate their training. Second, the actual shock and consternation trainers exhibit when one asks about past or future evaluations of their handiwork. This is especially true of human relations trainers, as opposed to those, for example, who might
be training production employees in the use of efficient methods and procedures. It is as if the trainer were unwilling to waste his time evaluating something that he already knows is good. (p.72).

This conclusion is further supported by the author's experience with the Training Manager of a leading motor vehicle company in Australia. When he approached the manager initially in July 1986 and requested his permission to allow him to conduct empirical research for this thesis at the company, there was no objection and the author spent many months studying the organisation and its training function. However when the questionnaire was finally prepared and formal permission to administer it was sought, the training manager declined permission. His reasons were that he did not want the employees to be exposed to undue pressure, answering questionnaires, on top of their heavy workload and that a similar exercise had been conducted recently by the Training Department.

The main theme of this chapter is that, for the training function and the training system to be effective there has to be a concerted effort by both management and the training personnel to support training activities by careful and continuous research and evaluation.

2.2 Purpose of Evaluation

The relevance of an evaluation exercise, whether it is to be an end of a training exercise (summative) or as an ongoing training evaluation during the period of the training (formative) has first to be established (Kane: 1976, p.292). Scriven (1974) argued that evaluation studies can be split into summative and formative evaluation, depending on the reason for the evaluation. If a program is undertaken to improve the design of the training function or the system, it is formative. If the program's design is to promote its use, it is summative (Smith: 1978, p.337).

Formative evaluation measures whether the program is similar to the intention, originally set at the start of the program, or if modifications are required to improve the performance of the program.
before it is implemented (Goldstein: 1974, p.69). Formative evaluation presents a methodological problem (Goldstein, p.69) in that difficulties might be caused by the continual changes that the evaluation procedure has to accommodate as changes occur in the data collection. The formative evaluation paradigm seeks to solve this problem. The purpose of formative evaluation is to accommodate the necessary changes before providing the foundation for the experimental design, which becomes the basis for summative evaluation.

A number of recent studies (for example Komoski: 1983; Wager: 1983; Lowe et al: 1983; Montague et al: 1983; Israelite: 1983; Bastian et al: 1983 and Stakenas and Mayer: 1983) have utilised the formative evaluation approach to design instructional programs. Lowe et al (1983) have used formative evaluation to improve tight production schedules with a limited budget. In 1981, the Kingdom of Saudi Arabia contracted with the San Jose State University (through the US Department of Labour) to develop, field test and revise two vocational courses. The courses were competency-based, individualised and mediated (by the instructor's presence). Lowe et al (p.8) chose the formative evaluation procedure for the following reasons:

1. **Time constraint:** The project had to be completed within a short period.
2. **Feedback:** The project had to provide feedback about the effectiveness of the overall learning system.
3. **Short revision period:** The project had to have an evaluative feedback mechanism for quick revision of the instructional packages.
4. **Adaptability:** The project had to ensure that the program did not confuse or frustrate the trainees.
5. **Quick results:** The project had to avoid long setup and data gathering delays and had to provide quick results.
6. **Evaluative constraints:** The project had to take into account the lack of highly trained personnel at the training sites to carry out evaluations (also trainees fluent in English and Arabic were not readily available).
The formative evaluation that most suited their project was the learner verification approach where the trainees were observed as they worked through the instructional sequence. They called it the clinical approach to formative evaluation.

Summative evaluations are undertaken for the purpose of deciding whether a training program has achieved what it aimed to achieve and that the outcomes of the training justify the continuation of the program (Kane: 1976, p.292). They also serve to verify if the program has a sufficiently high value compared with a situation where the trainees do not undergo training. Summative evaluations are good for deciding whether a program should proceed or whether it should be terminated. Kane (1976) says that the summative evaluation:

is only appropriate for training and development programs that exist as alternatives to other feasible approaches to the organisation’s acquisition of the skills and knowledges that such programs are intended to impart (p.272)

This however does not imply that summative evaluation is made redundant if the formative evaluation is operating satisfactorily, indicating that the training function is operating as designed (Goldstein: 1974, p.70). Satisfaction of the trainer responsible for the implementation of the program does not mean that the training program is meeting all the stated objectives.

In both the summative and formative evaluation the benefit is only derived if there is feedback into the system and process of the findings. Donald Tosti (in Spitzer: 1980, p.29) defines Formative Feedback as:

information derived from assessment of the outcome which affects the qualitative aspects of the process, that is, it modifies or maintains the form of the process.

Tosti suggests that the formative evaluation contributes to the qualitative aspects of the process and feedback is meant to improve this aspect of the training process. Tosti defines summative feedback as:
information derived from assessment of the outcome which affects the quantitative aspects of the process, that is, it modifies or maintains the system’s rate of output.

Information from the summative evaluation then determines quantitatively the appropriateness of the outcome. The result can be to modify, maintain or even reject the training program completely.

2.3 Evaluation Studies in Training

Industry can no longer afford to bypass or conserve expenses in the area of training education. The investments in and potential of organization training are too great, and the risks and costs associated with contaminated measurements are too high to allow haphazard developments, implementation or evaluation. (Bunker & Cohen: 1977, p.540)

The investigation of the relationship between the training system and its effectiveness address a related issue concerning evaluation. The function of the training system is inextricably linked to the perception of training and its relevance to job performance. Hamblin (1974) has defined training as ‘any activity which deliberately attempts to improve a person’s skill in a job’. In this context, then, any meaningful measure of the training system’s effectiveness should be based on activities which deliberately attempt to improve the employee’s skill in the job.

Currently many training departments end their training evaluations after measuring training outcomes and if the results are positive, they rate the training as successful. However, such conclusions cannot be supported without empirical evidence of a relationship between training outcomes and job performance (Budd: 1984, p.4).

Budd (p.23) goes further to say that the scope of evaluation should also include job and organizational performance, measured after trainees have completed their training programs. Cornwell (1980) calls this approach seeking the bottom-line results of training and supports the notion that training evaluation is a multi-dimensional approach.
In the 1970's Cambell et al (1970) published a comprehensive survey of training evaluation in the USA and this was followed by Whitelaw (1972) covering the same area as the American review. Both these studies have documented well the training methodologies and the inherent limitations of the various evaluation processes. The review of the literature in both the studies showed that the evaluation of training concentrated on the evaluation of specific training courses, using quantitative methods. The survey showed that most of the researchers into training devoted their efforts to the methodological issues of adequacy of measurement criteria, experimental design, sample selection, problems involving the variable effects of time factors and the use of control groups.

Smith (1980) says that organisational training evaluation has not received proper attention by managers for the following reasons:

- Long time lags to show the effects of training
- They have other priorities
- Novice evaluators have trouble formulating objectives in precise and measurable terms
- Lack of cost effectiveness due to lack of usable findings and results.

Brandenburg (1982) elaborates by saying that the obstacle to the proper evaluation of the training function or transfer of learning has been the lack of professionalism of the trainer and the training system which has made it difficult to get organisational support and resources.

In a survey of forty four training courses at the New England Telephone Company, Smith (1980) concluded that training evaluation has been equated with measuring trainee reactions, and there was little evidence of how training was contributing to the organisation. In the survey Smith found 28% of the training courses had been evaluated in terms of post-training job performance compared to 85% of training courses evaluated on trainee reaction to particular training programs. To further support his findings in the survey, he
looked at an evaluation based on trainee opinion in his own company, and found that the trainees had rated the training highly but the training course was dropped within a year because the line managers remained unconvinced about the benefits of the course (Smith: 1980, p.72).

Similarly Brown’s (1980) study of two hundred and eighty five companies reported that in the majority of the training programs, evaluation was based on trainees’ reactions and whether transfer of training knowledge had taken place.

An earlier study by Catelanello and Kirkpatrick (1968) found that the results of training evaluations based on levels of job performance were superficial and subjective. Of the one hundred and ten companies surveyed, seventy eight companies were attempting to measure trainee reactions. The authors concluded that most organisations were measuring reactions to training programs, and that inadequate attention was being devoted to the more important and difficult levels of the evaluation processes.

Tucker (1982), in a study measuring the effects of goal-setting on goal attainment in the job, found that although there was a significant difference in job performance between the experimental and control groups, there was no significant difference in the two groups’ perceptions of learning, as measured by a reaction questionnaire at the end of the training.

Smith (1980) sees training as a processing system which has trainees as inputs and trained employees as outputs. The work group is the receiving system, where trained employees become the inputs, and the outputs are the missions assigned to the group. The processing and receiving systems are subsystems of the larger system, the organisation. Smith believes that this model demonstrates that training does not function in isolation, and evaluation therefore also cannot be conducted in isolation. Goldstein (1980) supports this view and adds that evaluation conducted at higher levels must recognise constraints imposed by the environment and the influence of a multitude of organisational variables.
The authors mentioned above agree that evaluation of training is beset with problems facing quantitative assessment. As early as 1970, Campbell et al proposed that the ultimate control in the development of more rigorous experimental designs in training requires more control groups than experimental groups. They employed in an experimental design three control groups and one experimental group. Most researchers find this difficult to comply with, especially obtaining both control and experimental groups.

Another major evaluational schema is the CIRO framework as presented by Warr, Bird and Rackham (1970). This framework identifies four evaluative levels:

a. Contextual evaluation - obtaining and using information about the current operational context in order to determine training needs and objectives.

b. Input evaluation - obtaining and using information about possible training resources to choose between alternative 'inputs' to training.

c. Reaction evaluation - obtaining and using trainees to express current or subsequent reaction in order to improve training.

d. Outcome evaluation - obtaining and using information about the outcomes in order to improve subsequent training. Three levels of outcome evaluation are in terms of immediate, intermediate and ultimate outcome.

All the writers referred to so far have placed training evaluation in a very critical position within the organisation. Parker (1976) and Zeira (1974) see evaluation as a form of change agent. Parker (p. 19.2) explains this as a cyclic phenomenon in which the findings of evaluation studies form the basis for new cycles of management development and organisational renewal. The author has adapted Parker's approach and has explained the cyclic nature of training system analysis as a prerequisite for effective training systems development (see Figure 2.1).
Figure 2.1 Training system evaluation model
Figure 2.1 establishes a cyclical relationship when a training system analysis is undertaken. In phase 1, we develop training system objectives. The objectives are established according to the stated missions of the training system. If the objectives vary from the stated missions then in phase 2 the training system has to be redesigned to accommodate this. Phase 3 requires the selection and implementation of the inputs through the training system according to the objectives of the training system. Phase 4 evaluates the training system's outputs in accordance with established standards and relevance to the system's survival. In phase 5, training system effectiveness measures are developed and the control mechanism is established in accordance with the stated system objectives and missions. The feedback loop is completed when information on the effectiveness of the process is relayed back into the cycle again.

The implications of a truly comprehensive evaluation study can be far reaching. Brethower and Rummler (1977) suggest that the evaluation of training should include a number of aspects (p.103) and the range of reasonable alternatives in which the relationship between the training function and the organisation it serves is studied. They have identified eight specific system components, summarised below.

1. The system inputs (trainees)
2. The processing system (training department/function)
3. The outputs (trainee-trained)
4. The receiving system (work group)
5. The stated mission of the receiving system
6. The evaluation of the accomplishment of the stated mission
7. The evaluation of the quality and quantity of the outputs of the processing system
8. The feedback to the processing system on the outputs of the processing system and attainment of the stated goal.
The training function has three system characteristics (p.105).

1. Its output is the input to another part of the system.
2. It responds to information in a systematic manner.
3. It is controlled by the evaluation criteria, as it adapts.

Diagrammatically the system components as explained by Brethower and Rummel are illustrated in Figure 2.2.

![Diagram of a General System applied to Training](image)

**Figure 2.2 Model of a General System applied to Training**

2.4 Summary

The review of evaluation studies suggest, that approaching training evaluation by examining the training function in total as a coherent 'open system network' appears to be relatively now. It is
still a neglected area, even though many of the writers (for example, Goldstein: 1980; Smith: 1980, Parker: 1976; Zeira: 1973 and Brethower and Rummeler: 1977) have considered the use of the general systems approach in the study of training.

The following is the summary of the conclusions Cambell et al (1970) reached after their review of the evaluational literature as to what the prerequisites for adequate evaluation of training should include:

a. Utilisation of multiple criteria for the measurement of training and training system effectiveness.

b. Study of the interrelationships of the criteria themselves and the relationship of the criteria to other organisational variables.

c. Some study of the relationship of the internal organisational and subsystem variables to external environmental criteria.

d. Some experimental controls to allow the establishment of a relevant relationship of a causal nature.

e. A statement about the practical and theoretical significance of the results.

f. Some effort to study the system aspects of the training effort in relation to other organisational subsystems.

There has been no dispute about the relevance of the above factors suggested by Campbell et al (1970, pp.284-85). Their ideas have been widely accepted as a conceptual framework, based upon which many current training evaluation studies have been conducted. In the current research, Campbell et al's framework is utilised to establish a conceptual and theoretical model to study training system effectiveness.
PART 2

INTRODUCTION

Chapter 3: Training Research, Design and Strategy

Chapter 4: Characteristics of Sample Organisations and Respondents
PART 2

CHAPTER 3

TRAINING RESEARCH, DESIGN AND STRATEGY

3.1 Introduction

Training system assessment and its relationship to the effectiveness of training systems is a neglected area of research in many organisational behaviour studies. There is also a general absence of attempts to formulate hypotheses in the field of training systems research in order to contribute to theory on training system impact studies. The popular areas of research in the field of training have mainly tended to focus on the effectiveness of training programs, the economics of training, the social impact of training and the dynamics of training. To the author's knowledge, there is no research work that formulates an hypothesis on the determinants of effectiveness of training systems and attempts to test such an hypothesis. This thesis starts with an hypothesis on the work of training systems in organisations and sets out to examine factors determining effectiveness in training systems.

This research is designed to develop a theoretical model of the relationship between training systems and their effectiveness within organisations (that have training as a function, either attached to the personnel department or a separate training department). The philosophy on which this research is based is that a training system is most effective when it is integrated with user needs and requirements within a formal organisational concept. In particular the research seeks to describe and to evaluate the ability of the training system to respond to:

a) internal change within the training system;
b) external change in the greater organisational system and the environment.
Therefore, it is the basic ability of the training system to aid management by providing a formal framework for meeting training requirements and needs and coping with change which will be examined.

3.2 Research hypotheses

The objective of this thesis is to test the proposition that the effectiveness of the training system can be related to a set of training system effectiveness criteria points. The three basic hypotheses to be tested are that:

Hypothesis 1

There are definite perceived relationships between training policies and the effectiveness of the training system;

Hypothesis 2

The effectiveness of the training system is perceived to be related to organisational effectiveness, organisational climate and the immediate state of the organisational environment;

Hypothesis 3

Perceptions of the effectiveness of training system vary with the size of the organisation, type of industry, and the formalisation of the training system.

There are several problems of methodology associated with any research that sets out to test the validity of an hypothesis. One problem is the selection of a suitable method of research and analysis permitting the ready collection and analysis of relevant data. In the following section the method of analysis and research strategy used in this thesis are discussed.
3.3 Method of Analysis

It is important that the basis on which this thesis is developed should incorporate methods that will generate the testing of hypotheses. That is, the approach should be to confirm, refine and enlarge the hypotheses and develop a methodology that has as its philosophic base a guide to action (Coleman: 1972, pp.1-2).

The central implications in the above objective for this thesis are that:

a) a coherent and self-conscious methodology of studying training systems be developed;

b) the theory construction be used as a component of a methodology that constitutes a guide to action.

The analysis and evaluation of the data is to test both the validity of the hypotheses, and to indicate areas where training policies and actions are required to increase the effectiveness of the training system in organisations.

It is towards this dual purpose, that is, theory building and establishing the basis for a guide to action that this thesis seeks to contribute.

In order to achieve these objectives, the training function is examined as a system. The potential effectiveness of the training policies and the training system are examined through the structural, functional and processing patterns of the training system.

To reduce the possibility of value judgements about a specific functional goal orientation, a number of measures of effectiveness have been used to measure performance. Societal influences are contingent upon the situation of the organisation and, therefore, the understanding upon which this research is undertaken is that no two situations are similar and the effectiveness of a system should be
studied in that context, by first identifying and accounting for the many possible relationships with the system. In particular, in this research, the structural variables such as size, type of industry and formalisation are considered. The systems theory approach which is fully discussed later in the chapter allows for this contingency orientation.

3.3.1 Contingency Theory

The most recent perspective on the study of organisations is contingency theory. In the 1960's, there was widespread confusion as to which school of management theory was correct, and whether there were, indeed, as earlier theorists had argued, universal principles of management, applicable to all situations.

Contingency theory was a response to this dilemma. It has been described as a theory which is not really a theory. Essentially, what it argues is that there is no one theory or universal set of principles which is applicable to all situations. Instead, there is a variety of theories, and which is applicable depends upon the nature of the particular situation. Thus, the contingency approach has also been used to partially reconcile views previously believed to be incompatible, in the sense that each may be equally valid for dealing with a different situation.

Historically, the origins of contingency theory have been traced back to a book by Phillip Selznick (1957). However, there are hints of this approach going back much further in the writings of some of the classical theorists, such as Mary Parker Follett (Metcalf and Urwick, 1941).

Major contributions to the contingency approach in the 1960's and 1970's have come from English and American writers. Writing about organisational structure, English sociologists Burns and Stalker (Burns and Stalker, 1961) and Joan Woodward (Woodward, 1965) have
emphasised that structure is contingent on factors such as the
technology and the state of the product market of the individual
firm. No one structure is best for every firm.

In the behavioural sphere, two leading contemporary contingency
theorists are Americans Victor Vroom (Vroom, 1964) and Fred Fiedler
(Fiedler, 1967). They have applied a contingency perspective to
motivation and leadership, and have concluded that there is no one,
universally applicable theory in these complex areas, but that
management must adapt its behaviour to meet the needs of the
situation, or seek to adapt the situation to accord better with their
own style.

Thus, the current state of the art in the field of organisational
behaviour is to place emphasis on situational analysis, and the need
for managerial flexibility in finding and applying the correct
approaches, according to the different nature of problems facing
them. It is suggested the same approach is appropriate in the area of
training.

3.3.2 Contingency orientation

This research is contingency based. A contingency orientation
argues that the form of the training system is contingent upon the
context in which it operates. The framework developed in Figures 3.2
and 3.3 identifies relevant contextual or functional and structural
dimensions. This view is supported in the research conducted by
Jayashree Mahajan (1986) where he examined the sales organisation and
identified the appropriate structural form of the sales organisation.
The organisational system model (Figure 3.1) developed by Kast and
Rosenzweig (1979: p.117) gives us an insight into the contingency
aspect of an organisation as reflected in an open system.
Christodoulou (1984: pp.42-50) has summarised the major features of
the contingency view of the systems model:
ENVIRONMENTAL SUPRASYSTEM

input - output flow of materials,
energy, and information

Figure 3.1: The Organisational System Model

1. The organisation is composed of interrelated subsystems.

2. The organisation is an open system which can exchange energy, information or materials from the environment.

3. The organisation is in a dynamic relationship with its environment, it receives various inputs, transforms these inputs in some way, and exports outputs.

4. Social organisations are not natural like physical or biological systems, and therefore it is not possible to make an exact analysis, as with physical or biological systems.

5. The organisation maintains an equilibrium with its environment by a continuous inflow of materials, energy and information. Feedback concerning the organisation's outputs provides the organisation with the necessary inputs to correct the system so that the equilibrium with the environment can be maintained.

In this research the context or functional dimensions are comprised of resource inputs, task inputs and interface with the environment. The structural dimensions include the leadership and performance control, task competence and organisational integration. Effectiveness is defined by the goal model and its measures are overall organisation effectiveness, overall training systems effectiveness, organisational climate and state of the organisational environment.

The notion of 'contingency' is defined in terms of an interaction between a functional and structural variable (Mahajan: 1986). The contingency approach advocates that every situation is unique and that the solution to an organisational problem is also unique. This approach discourages universal and 'timeless' solutions. The development of the contingency approach as a further refinement of the systems approach will be discussed later in the chapter.
The hypothesis proposed in the thesis suggests that training policies and training systems have definite relationships to the effectiveness of training systems. Here, training policies and training systems are seen as independent variables related to training systems effectiveness rather than being determinates. In other words, training policies and training systems are analysed dynamically by examining their outcomes rather than seeing them in static terms. Likewise, relationships are also hypothesised between perceptions of training systems effectiveness, organisational effectiveness, organisation climate and environmental conditions. It is within the scope of this thesis to explore if there is any relationship between perceptions of training system effectiveness by employees and the industry category, size of organisation, and the formalisation of the training system, by studying the perceived importance of the function of the training manager, the training department and the training system overall.

3.3.3 Systems Theory

The contingency aspect of the study implies that the multiple performance criteria are subject to change. Systems theory, a derivative of the general systems theory as expounded by Millor (1965), treats organisations as interacting with their surrounding as would a biological system. This is opposite to a closed system, often used in the study of economics, where assumptions are specified to define the parameters within which the system operates, discounting any environmental influences outside these parameters on the system.

Scott (1977), identified three models that can be used in the study of effectiveness. They are, firstly, the rational systems model, based on measuring goal attainment (Campbell: 1977; Etzioni: 1964; Georgeopolus and Tannenbaum: 1957; Hall: 1972; Price: 1968; Scott: 1973; Steers: 1975); Secondly the natural system model (Barnard: 1938; Connolly, et al: 1980; Cyert and March: 1963; Katz and Kahn: 1966; Keeley: 1978; and Pickle and Friedlander: 1967), which includes both goal attainment and the ability of the organisation to survive; The third model is the systems theory model
which is an extension of natural systems theory. Many of the contributors to the rational systems model and the natural systems models have also made their contribution to open systems theory (other examples, Miller: 1978; Yuchtman and Seashore: 1967). The first two models appear to emphasise the organisation in isolation while open systems theory emphasises the interactions of the organisation with other parts of the overall environment.

The development of the conceptual model and the study in this thesis is based on open systems theory.

Systems theory had its origins in the biological sciences. The basic idea of systems theory, according to von Bertalanffy, is that a system is a set of units with relationships among them. Further, he argued that 'even the most rudimentary unit of life is a 'system' ... maintaining itself in a steady state by interchange with its environment and capable of reproducing its like' (von Bertalanffy: 1956 p.1).

Another pioneer, in the development of systems theory, is James G. Miller. Miller has argued that systems theory is equally applicable to complex organisations as to single cell organisms, notwithstanding that the former are man-made artefacts, and the latter are simple biological life forms (Miller, 1965). This view has been highly controversial with many critics.

However, many sociologists and organisation theorists have found systems theory useful as an analytical framework, even if they disagree with Miller's philosophical view that single cell organisms and complex organisations are only opposite ends of the same spectrum.

Systems theory, as specifically applied to organisations, derives from the work of Talcott Parsons (1951). Parsons was a founder of the structural-functionalist school of sociological thought. The basic philosophy underlying this approach is that all social structures perform a useful function in the society of which they are
a part, or they would otherwise not exist or survive (Parsons: 1951). To many observers, the concept of a social system is indistinguishable from the ideas of the structural functionalist school, as it forms the basis of that school's method of analysis.

The focus of Parson's work was on the attempt to develop a general theory capable of explaining all aspects of social life. He treated society as a whole as a social system, with organisations forming subsystems of the wider whole. Therefore, given the "macro" nature of his interest, he had relatively little to say about organisations, other than considering their relationship with their wider society as a whole.

In this respect, he argued that systems are integrated by the mechanism of common values. The goals of organisations, therefore, were seen as being linked to and contributing towards, the common values of society. Thus, organisations, almost by definition, were soon as being functional for the society of which they form a part.

Parsons' 'grand theory' approach tells us little about the internal dynamics of organisations, which is the focus of central interest to researchers in organisational behaviour.

3.3.3.1 Systems theory: A critique

Some of the criticisms of pure systems theory have already been implied in what has been said above. They include:

1. Serious doubts as to whether simple living organisms and complex, man-made artefacts like organisations, can be treated conceptually in a similar manner.

2. The metaphysical nature of the approach.

3. Looseness of terminology used by many authors, in moving unconsciously or uneasily between concrete and abstract concepts.
4. A tendency by some theorists, deriving from structural functionalism, to assume that systems have goals of stability or equilibrium. Living systems may have such goals, even if only at an instinctive level, but organisations are not living beings, and cannot have goals. Goals are characteristics of human agents within the organisation, not of the organisation itself, which is a conceptual abstraction (McKenzie: 1967, pp.86-110).

5. Some systems theorists take the view that there are laws of human behaviour, which are ultimately discoverable by research, in the same way as is true of the natural sciences. Once discovered, such laws would provide the basis for prediction and ultimately total control of human behaviour. Many critics disagree that there are such laws, or that prediction and control would be desirable ends to strive for (Silverman: 1970, p.3).

However, despite these criticisms, many contemporary writers have not embraced the full implications of systems theory, but have only used systems models as analytical frameworks.

An example of a leading Australian writer who has used systems theory to good effect in this way is John Hunt. Hunt takes an open systems approach to organisations, arguing that, increasingly, 'behaviour in organisations is a by-product of the environment, rather than a result of the behaviour of manager inside the organisation'. He sees the interdependent parts of the organisation, broadly, as being objectives, people, and some formal or informal structure, whose purpose is to achieve coordination and a degree of stability (Hunt, 1972, p.1).

In this research, systems theory is used not purely as an analytical framework for evaluating training effectiveness perception within organisations, but also to relate the training department's behaviour to the overall organisation and to the environment (see Chapter 9).
3.4 The Development of the Conceptual Model

Figure 3.2 illustrates the application of the model of analysis for study of the inter-relationship between the training department’s activities, the training manager’s authority and influence, the departmental managers’ response and participation, the organisation’s recognition of and support for training, the training policies, and their effect on the effectiveness of the training system. The model assumes that the training subsystem makes demands on its economic, social, and political environment and resources within the organisational system for its development. In other words, it competes with other sections of the organisation for scarce resources. Because of these demands on scarce resources, the training systems’ policies are influenced by the political, social and economic factors of the organisation.

The effectiveness relationship of the model also extends to the external environment. The ability of a system to change and adapt and to reflect changes in the environment is seen as an important factor in the long term survival, success and reputation of that system. The training organisation is seen as a subsystem of a larger system, namely the organisation, even though it is divorced from the suprasystem where the organisation is seen as a part of the external environment. Open systems theory, upon which this research is based, suggests that changes in one part will affect the other parts of the system and the whole system itself.

In order to study the relationship between training policies and the training system, the model of analysis must be changed to a micro-model through which training policies and training systems can be analysed.

Figure 3.3 illustrates the interplay between training policies, the training system and training system effectiveness in a conceptual framework. In the figure, training policies and the training system are inputs into the training development processes, that is, the training policies and the training system are action-oriented to
Figure 3.2: A Macro-Model for the Analysis of Training Effort
Figure 3.3: A theoretical model illustrating the interplay between training policies, training systems and the organisation.
attain certain objectives. These objectives may or may not be achieved. When they are achieved, the extent of training policy effectiveness and training system effectiveness are related with regard to specific trends in input and output.

The purpose of the models (Figures 3.2 and 3.3) is to define a conceptual scheme to guide thinking and to provide a logical structure for the hypotheses. The combination of the model and the hypotheses is to build a bridge between heterogeneous theories and empirical research. As a combination they give a theoretical framework for the research.

The hypotheses in this research are assumptions which are put forward for testing. They translate the problem into forms that facilitate testing by establishing relationships between variables.

3.4.1 Assumptions

The hypotheses to be tested are developed from the following assumptions:

1) That the functional effectiveness of the training system varies with the degree of:

   i. control and direction of training policy,
   ii. requests for service and involvement in training programs,
   iii. strategic training management,
   iv. communication,
   v. resource acquisition,
   vi. training task performance,
   vii. determination of training service requirements,
   viii. operational training planning,
   ix. coordination and integration of the training system with the other systems of the organisation,
   x. conflict resolution between the training system and the other systems of the organisation,
   xi. quality of staff output from given resource inputs.
2) that the structural effectiveness of the training system varies with the degree of:

i  competence of the training manager,
ii  standard setting in the training system,
iii  performance monitoring and evaluation within the training system,
iv  rewards and sanctions offered to the training staff,
 v  training staff competence,
vi  the dynamics of team problem solving,
 vii  interpersonal communication in the training system,
 viii  coordination and integration efforts of the training manager,
 ix  existence and appropriateness of mechanisms for resolving training staff conflict,
   x  training staff identity and their status,
 xi  training staffs' capabilities in anticipating changes and planning for them.

3.5 Method of Research

In accordance with the strategy of this research, the analysis and the synthesis of the data were carried out on the basis of the models, hypotheses and measures used in the current empirical research. The two main problems that had to be overcome were:

1) how to link the results with the theory and;

2) the methodology of the research.

To solve this problem the theoretical model in Figure 3.4 was created showing the derivation of the hypotheses. The methodology adopted must be seen in the total framework of the research strategy and processes as shown in Figure 3.4.
Figure 3.4: Research Strategy
The model in Figure 3.4 and the theories examined in the literature review give a theoretical background for the development of the measurement of the variables in the model. These measures have been constructed from the data collected from the literature and they have been used in developing the hypotheses. In the final stage of the synthesis, empirical results are discussed and linked with the theories, and conclusions are drawn.

The empirical research is correlational in nature. This type of approach makes it possible to look at a number of variables relating to training system effectiveness. However, the major disadvantage of this type of research is its inadequacy in proving the existence of cause and effect relationships between the variables in the model, but a correlational study can establish whether two variables tend to be related at a fixed point of time (Porter & Lawlor; 1968, pp.41-43).

Several techniques of research have been used in the course of the field work. The main alternatives open in this kind of research are interviews, questionnaires, unstructured observational methods and content analysis of company documents and statistical records.

3.5.1 Observational methods

In order to familiarise himself with the extent of training system infrastructure in companies, site tours were carried out by the author in a number of companies, and employees and management were questioned on aspects of the training function in their organisations. Extensive site tours were especially carried out at Ford Motors, Commonwealth Bank and Westpac Bank, all situated in Geelong. This method of observation was useful because it helped the author to assess the type and level of training system infrastructure and the type of training being employed in Australian companies.

Observational methods were also used to examine the extent of training promotion and effort in these companies. Media such as
circulars, letters to the branches from the Training Departments, posters on notice boards, brochures, etc., were found to be valuable sources of information on the type and level of training activities carried out.

The observational method, however, was not found to be useful for collecting information on training policies. One limitation was that policies are statements which cannot be observed because they are not by nature physically visible. For this reason, observational methods were not used to collect information on training policies, but purely to familiarise the author with the extent of training efforts by examining the infrastructures of the training systems.

3.5.2 Interviews

Another research strategy used in the process of collecting data was the interview method. Regular visits were made to two companies in particular, in the Geelong district, to talk to the employees and the management. The two companies that participated in the interviews were Ford Motors and the Commonwealth Bank, Regional Branch in Geelong. Those approached were informally interviewed and asked questions about their opinions as to the effect of certain training policies. (See Appendix F for some of the interview questions.)

Responses from such interviews were extremely useful in that the opinions of the staff gave the author ideas about the general trend that the research should take. The formulation of the questionnaire took into account this vital input from the firms themselves. For instance, the interviews showed that opinions on training systems effectiveness arising from training policies and the system differed according to the levels of seniority within the company. From the responses it became obvious that an attitudinal study of a particular organisation would have to take into account inputs from the following groups at least:

i the managers;
ii the supervisors;
iii general staff.
Inputs from the last two groups were, however, not sought in the current study since the research was seeking perceptions of managers in various types of industry about the effectiveness of the training systems in their organisations. Managers have been found to be more suited for such a strategic type of research since they have a broader perception of industry needs (Mintzberg: 1973). Therefore in this study only the managerial category was selected as the sample group.

The interviews also suggested that perceptions of training could vary according to the climate and the environmental complexity of the organisation. To explore this further, a second questionnaire seeking responses to the following four issues was mailed separately (see Appendix B):

1. overall organisational effectiveness
2. overall training system effectiveness
3. organisational climate
4. state of the immediate organisational environment.

3.5.3 Questionnaires

The questionnaires formed the basis on which this thesis was developed. The strategy adopted in this research method was to evaluate the training policies and the impact the training system had on the overall training system effectiveness. Two separate sets of questionnaires were administered to a target population. The first questionnaire was administered to managers across industries. (For details of Questionnaire 1 see Appendix A.) The chosen population was past and present Deakin University Off Campus Masters in Business Administration (MBA) students. This population was found to be ideal for an exploratory study of managerial perceptions of the effectiveness of training systems on a cross industry basis. The total population was 447 and Questionnaire 1 was posted out to the total population. 286 respondents returned the questionnaire, a return rate of 64 per cent. Of the 286 returns, 135 were rejected on the ground that the organisations in which the respondents were
employed did not have a training function. The rate of usable returns to total returns was 53 per cent. Eleven industrial categories, encompassing respondents' organisations were identified, and correlational studies of the criteria of training systems effectiveness based on these categories were computed and the results are shown in the Findings. The eleven categories identified were:

1. Government, other than defence and education
2. Defence
3. Mining
4. Manufacture
5. Services
6. Retail
7. Education
8. Professional
9. Insurance and finance
10. Computer
11. Other.

The eleventh type 'other' was included where respondents were not too sure of the industry category of their organisation. Some of the responses were reclassified into one of the other ten industry types if the researcher was able to accurately ascertain their classification.

The other demographic variables which are of importance to the study are organisational size, formalisation of the training department, formalisation of the position of training manager and the importance of the training function in the organisation.

The organisational size is defined by the total number of employees in the organisation, formalisation is defined as the degree to which jobs within the organisation are standardised (Robbins: 1987, p.498) and the industry type is the eleven categories of industries identified above. The three structural factors of size, formalisation and industry type are considered as having strong influences on the overall effectiveness of the training systems. The research considers in detail their impact on the training systems in the organisations.
The second questionnaire was only developed after receiving some feedback from the first questionnaire and it became quite evident that there were other organisational and environmental factors that need to be studied. It is now quite obvious that examining organisational effectiveness without consideration of the influence of the environment would not be a study in open systems theory.

The second questionnaire with only four questions seeking responses to perceptions of the overall effects of organisational effectiveness, training systems effectiveness, organisational climate and the environmental complexity were posted out to the one hundred and fifty one respondents whose first questionnaire was found suitable for the research. One hundred and twenty two replied and all the questionnaires returned were found suitable for the research. The response rate was 80.1 per cent. The response to the second questionnaire was then added to the existing data file created by the first questionnaire and codes matched in both questionnaires.

3.6 The Philosophy of Measurement Objectives

The purpose for which any system is usually evaluated is to measure its output performance, and more precisely its economic performance in terms of efficiency and effectiveness. This task is an ambitious one even in circumstances where there is an output from the system that is quantifiable and of a clearly defined nature. Such an ideal, worthy though it may be in theoretical terms, becomes impractical when attempted in the context of the performance of almost any complex organisation system that deals in products other than material goods or measurable services.

This thesis attempts to explore the dimensions that relate to the effectiveness of a system which trains people to make an effective contribution to the functioning of an organisation. The productive output of such a system is not measurable on a quantifiable level at present, unless one wishes to make the criteria of measurement absurdly simplistic.
Consequently, to explore the dimensions that relate to the effectiveness of training systems, as attempted in this thesis, must be preceded by a value shift away from rigorous quantification as an ideal form of measurement and from attempting any singular measures of effectiveness.

In a comprehensive review of the problem in the measurement of organisational effectiveness, Steers has surveyed 17 multivariate models that have been used to measure effectiveness in organisations. Steers' findings were that there was very little overlap in criteria used between the models. In all there were 14 criteria of interest used across the models. With respect to the range of criteria, Steers observed that:

Of the various criteria, adaptability-flexibility was mentioned most often, followed by productivity and satisfaction. Only adaptability-flexibility was mentioned in more than half the models. It could be argued, based on these findings, that attempts to measure organisational effectiveness are fruitless. A more likely conclusion, however, is that the effectiveness construct is so complex as to defy simple attempts at model development. (Steers: 1975, p.549)

The model that has been developed in Figure 3.3 is not intended to be simple. The intention has been, however, to give it a logical and coherent structure to offset its complexity. The task of studying the relationships among variables that relate to the effectiveness of training systems is the prime objective of the development of the model. To reach this objective entailed several conceptual stages. The first of these stages involved defining the criteria on which the system is to be judged as effective. Secondly those universal criteria have been 'mapped' onto the systems model to produce a set of assumptions with which to explore the systems effectiveness. These assumptions were then translated into hypotheses which would either confirm or reject the objectives of this thesis.
3.7 Questionnaire Development

The measurement instrument of the questionnaires is based on the Likert five point scale, varying from number one, representing low or minimum amounts to number five representing high or maximum amounts. The questionnaire was adapted with modifications from the set of index points developed by Paddison, S.G. (1978). The questionnaire was further developed using input from the works of authors such as Mott (1972), Cameron (1978), Campbell (1977), and Mackay (1984).

3.8 Pilot Study

After developing the pilot questionnaire, it was given to three academics at Deakin University to evaluate the construction of the instrument and its appropriateness to the research (see Appendix C for Pilot Questionnaire). Some changes were made and the instrument was then tested with two groups of people. The first group comprised Deakin University Master of Business Administration students. Twenty postgraduate students were randomly selected and the pilot questionnaire was administered personally by the author in May 1987 at a Residential School in Geelong. The second pilot study was also conducted during the same period in a class of seventeen postgraduate students of the Corporate Policy class of the Institute of Chartered Secretaries and Administrators in Melbourne. Both samples consisted of managers and were considered relevant to the study since Questionnaires 1 and 2 were administered to MBA students both past and present of Deakin University, who were employed in a managerial capacity in organisations distributed around Australia (see Figure 3.5).
Figure 3.5: Geographical Distribution of Respondents
As a result of the pilot study a number of changes was made. The questionnaires were simplified to make them understandable by a wider population. Additional questions relating to adaptability and flexibility were also added.

3.9 Measurement Instruments

The research has been designed to study the relationships specified in the research objectives. In this context testing of hypothesis and the prediction of the accuracy of the relationships are of importance. All statistical analysis in this research was performed using the SPSS/PC+ package.

In choosing the research instruments careful consideration was given to the relevance of the study and the methods of measurement. It was decided that the use of statistical measures should be limited to descriptive statistics, crosstabulation of results and correlation studies. It was not found necessary to go beyond this, to more complex statistical measures, in view of the overall nature of the research.

The two main instruments of importance to this research are Chi Square statistics and correlation statistics. Both these instruments are discussed and their relevance to this research is explained.

3.9.1 Chi-square statistics

The chi-square test determines the goodness-of-fit (Norusis; 1986) test which describes how well a frequency distribution of a sample fits a distribution predicted by the null hypothesis. The null hypotheses in this research predict a specific type of distribution for the population from which the data is drawn. If the goodness-of-fit is poor (discrepancy between the sample data and the hypothesised data) this would result in the rejection of the null hypothesis.
The use of the chi-square test hypotheses about the form and shape of frequency distributions. To test an hypothesis that deals with groups and categories of people, the chi-square test is the most satisfactory.

For example, in this research if we are to study the relationship of the perceived responses from the different industry categories with their perceptions of a particular effectiveness measure, the chi-square statistic will determine how well the sample data fits the prediction. Every respondent is categorised according to an industry type and the type of response made. There is a frequency distribution for each perceived relationship, consisting of the number of respondents in each industry type who responded to different questions.

In this study, the chi-square statistics are employed to test the goodness of fit between the perceptions of the structural variables and the perceptions of training systems effectiveness.

The chi-square formula for the study of the goodness-of-fit of the sample to the null hypothesis is:

\[ x^2 = \sum \frac{(fo - fe)^2}{fe} \]

where fo is the observed frequency and fe is the expected frequency for each category. The fo-fe relationship measures how well the data in our study fo fits the hypothesis fe. The fo-fe relationship is squared \((fo-fe)^2\) to eliminate the net effect of a positive or negative difference. The \((fo-fe)^2\) is also divided by the expected frequency fe to avoid the possibility of having a large or small fe which might distort the results. This is explained at length by Gravetter and Wallan (p.644).

In understanding the distribution of the chi-square it becomes clear when the equation of the chi-square is studied closely that \(x^2 = 0\) if there is a perfect match between the sample data and the
hypothesised data. It is also not possible to have a chi-square value of less than zero because the fo-fo differences are squared. If the null hypothesis (Ho) is to be true, the $X^2$ value will be relatively small (Gravetter and Wallen, p.644). From this we can see that the $X^2$ values will form a positively skewed distribution, beginning at zero, showing a peak for $X^2$ close to or at zero and then tapering off so that large extreme values are unlikely (see Figure 3.6).

![Chi-square Distribution](image)

**Figure 3.6 Chi-square distribution**

The null hypothesis is said to be true if the sample data obtained yields a $X^2$ value falling between zero and .5. The hypothesis is rejected if it falls in the critical region (that is if the probability of the event happening is greater than $X = .05$). Therefore if the chi-square value falls in the extreme tail of the distribution indicated by the critical region in diagram 2, the sample data is said to be outside the frequencies fit predicted by the null hypothesis.

Chi-square values are affected by the number of categories used in the study. If the number of categories are increased in the study the possibility of increasing the discrepancies to the compiled $X^2$ is also greater. This is because, even when the hypothesis is true, there can be a small amount of error between observed frequency (fo)
and expected frequency (fe). This is increased as the number of categories are increased. To consider this effect of the influence of varying categories on \( x^2 \), the observable shape of each distribution depending on the number of categories used in the study can be located in a table of \( x^2 \) distribution.

Therefore in studying chi-square statistics the number of categories employed in the study is important. Instead of applying the categories, degree of freedom (df) is used to identify a specific \( x^2 \) distribution. df is always the number of categories - 1 (C - 1). The actual \( x^2 \) can then be computed by observing in a chi-square distribution table, the df compared against a selected Alpha level (significance level).

The null hypothesis is said to have been rejected if it falls within the selected Alpha level (for example 0.05 level) of the critical region defined by the degree of freedom (df).

3.9.2 Correlation statistics

Correlation is a statistical technique that is used to measure the relationship between two variables. For the purpose of this research correlation has been used for the following applications:

Correlation has been used to predict the influence of the independent variable in a systematic manner on the dependent variables. For example, in this research an effort has been made to demonstrate that a number of dependent variables in the study are correlated with the independent variables such as the size of the organisation, the nature of the industry and the formalisation of the training department among others.

The second application of correlation in this research is to demonstrate validity of the measure. In this capacity correlation is a technique employed to show that the test measures what it claims to measure. Correlation is the most common technique used by researchers
to demonstrate validity (Gravetter and Wallnau: 1985, p.527). For example, in this research validity will be used to show if the size of the industry is related to the identified training system's effectiveness criteria, is common to all variables and is not an isolated incident (see Table 6.1 Pearson’s Product Movement Correlation Coefficient: size).

Correlation is also used to verify theory prediction. In this capacity correlation is employed to predict a definite relationship between the variables that have been identified in relation to the initial research objectives. In other words, can the test verify the predictions we have stated as observable in the theory building section? The theory verification is tested in this research by determining the correlation between the two variables under study at any one instant.

**Pearson Correlation**

In defining the correlation in this research, Pearson correlations (Pearson product-movement correlations) will be used. This is by far the most common correlation technique employed by researchers. The Pearson correlation measures the degree and direction of linear relationships between two variables (Gravetter and Wallnau, p.532). The formula for Pearson’s correlation is:

\[
I = \frac{SP}{SSxSSy}
\]

**Formula 2**

where SP is the sum of the products which measure the amount of covariability between two variables and SSx and SSy are measures of the sum of squared deviations (SS) of the amount of variability of variable X and variable Y respectively. X and Y are the two variables being measured.
Figure 3.7 illustrates various values for linear correlations.

- Relatively poor positive correlation, approximately +.3000 to +.5000
- Perfect positive correlation +.1000
- Perfect negative correlation -1
- Good positive correlation approximately +.8000 to +.9000
- Good negative correlation approximately -.8000 to -.9000
- Relatively poor negative correlation, approximately -.3000 to -.5000
No linear trend 0.00000

Figure 3.7 Linear correlations

Coefficient of determination

In interpreting and understanding correlations the concept of the strength of relationship is important. The correlation (r) does not itself tell anything about how good a fit the relationship is. It describes a relationship but does not give any information on how variables are related. Therefore it should never be used as proof of a cause and effect relationship between two variables (Gravetter and Wallnau, p.540). A correlation does not indicate that a certain percentage or proportion of the relationship establishes a 'fit'. This notion of a correlation predicting a relationship between two variables though might be true when a correlation is 1.000 and there is a 100% perfectly predictable relationship between the two variables. However the same cannot be said e.g. of a .7000 correlation as having a 70% prediction of accuracy of a fit between two variables.

The prescribing of a goodness of fit relationship based on a correlation r is affected by the range of scores represented in the data. In any study it is often not possible to cover the complete range of values to indicate the exact cause and effect relationship. Therefore it is not within the scope of this study to generalise from any correlation beyond the range of data represented in the two sample surveys. However it is possible to say that the study shows an accurate description of the relationships based on the correlations of the variables.
To overcome the prediction problem and to describe how accurately one variable predicts the other the coefficient of determination $r^2$ is used. The $r^2$ is derived by squaring the correlation $r$. Therefore if the correlation of $r$ in one of our studies shows $r = .7000$ then the square of it is $.49$. This then tells us that the accuracy of one variable predicting the other is 49% accurate. (For further discussion on $r^2$ see Gravetter and Wallnau, pp. 540-544.)
CHAPTER 4

CHARACTERISTICS OF SAMPLE ORGANISATIONS AND RESPONDENTS

4.1 Introduction

In this chapter the demographic variables which will be used in the research are analysed as independent variables to study their influence on the dependent variables. The two questionnaires administered to the two sample populations are:

Questionnaire 1: Managers Across Industries Questionnaire
Questionnaire 2: Environmental Conditions Questionnaire.

4.2 Rationale for questionnaire development

To explore dimensions that relate to the effectiveness of training systems across a number of industries the two Questionnaires were developed. Student-managers have been used in a number of examples of management and organisation behaviour research in the past (Heller and Porter: 1966; Thiruchelvam: 1982). In the New Zealand study, the researcher (Thiruchelvam) administered a modified questionnaire previously developed by Heller and Porter (1966) to off campus students at Massey University. He found the choice of respondents ideal as the respondents were practising student managers and as such would be a good sample to respond to questions relating to work situations and their perceptions of the needs and extent of satisfaction experienced within their work situation. Heller and Porter also reported similar benefits. Therefore, Deakin University’s MBA students were chosen as the total target population. The total population was 447 and Questionnaire 1 (Appendix A) was posted out to them. This was followed up with a telephone conversation if the response to the questionnaire was not clear or unambiguous. A return rate of 64 per cent was found acceptable for a mail questionnaire. The rate of usable returns to total returns was 53 per cent. The total population for Questionnaire 2 was derived from the usable
responses to Questionnaire 1. One hundred and twenty two respondents replied and they were all usable returns. The return rate of the second questionnaire was 80.1 per cent.

4.3 Characteristics of companies and respondents in Questionnaire 1

A total of 151 respondents participated in this survey, employed by companies or government departments across all states (see Fig. 3.5). The majority of them were in Victoria (58 respondents) followed by New South Wales (34 respondents). Australian Capital Territory had 20 respondents and Queensland 17 respondents. South Australia had 12, Northern Territories 6, Western Australia 3 and Tasmania 1. Figure 4.1 shows the sample distribution as compared to the total distribution in each of the Australian states. Responses from students overseas were excluded from the study, as the response was too small to be statistically meaningful for this research.

![Geographic distribution of Deakin's MBA graduates compared to the sample (sample per cent in brackets)](image)

Figure 4.1: Geographic distribution of Deakin's MBA graduates compared to the sample (sample per cent in brackets)

4.3.1 Age of respondents

47.7 per cent of the respondents were between 36 and 45 years old. 42 per cent were between 26-35 years of age. Only 2 per cent were below 25 years old and 7 per cent were over 45 years old (see Table 4.1).

Table 4.1 Age of respondents

<table>
<thead>
<tr>
<th>Age Group</th>
<th>f</th>
<th>f%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>26-35</td>
<td>69</td>
<td>42.4</td>
</tr>
<tr>
<td>36-45</td>
<td>72</td>
<td>47.7</td>
</tr>
<tr>
<td>&gt;45</td>
<td>12</td>
<td>7.9</td>
</tr>
<tr>
<td></td>
<td>151</td>
<td>100</td>
</tr>
</tbody>
</table>

The sample age distribution seems to reflect well the total target population age groups. (See Figure 4.2)

Figure 4.2: Age distribution of Deakin MBA students

In Leggatt's (1970) studies 42 per cent of managers in Britain were under 45 and 37 per cent over 50. The difference of age group in this sample in the 45 years and above being only 7.5 per cent of the total can be attributed to two factors. Firstly only those who see the benefit of time consuming MBA studies for their career are likely to choose to enrol in such a course. It is unlikely that this would benefit older managers, getting closer to retirement. Secondly, as Clements' (1958) and Clark studies (1966) suggest, there is a definite trend for managers to be getting younger as a group.

The managers in this survey are mature age students with at least a first degree from a tertiary institution. The minimum Graduate Management Admission Test (GMAT) score of each respondent is above 550 points. There is no research significance attached to the GMAT scores of the respondents. However, the intellectual aptitude of the respondents can only contribute to better quality responses.

4.2.2 Sex of respondents

The number of women in management in Australia (Still: 1985) is reflected in this survey. Still found that women managers represented only 9.8 per cent (p.8) of the total management group (17,311 managers). This figure is very similar to the 9.3 per cent of women among the total respondent sample in this survey (see Table 4.2).

Table 4.2 Sex

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>f%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>137</td>
<td>.907</td>
</tr>
<tr>
<td>Female</td>
<td>14</td>
<td>.  93</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>151</th>
<th>100</th>
</tr>
</thead>
</table>

0 40 80 120 160 200
Histogram Frequency
In the total population however the sex distribution is larger than the sample population. This variance to some extent can be explained due to a larger number of women in the survey being rejected from the study because they were in organisations that did not have a training function either attached to the training department or the personnel department.

Fig. 4.3 Distribution by Sex of MBA Deakin Students

4.2.3 Length of employment with current employer

40.4 per cent of the respondents had been with their organisations for less than five years and 61.6 per cent had been with their organisation for less than ten years (Table 4.3).

Table 4.3 Number of years with current employer

<table>
<thead>
<tr>
<th>Years</th>
<th>f</th>
<th>f%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>61</td>
<td>40.4</td>
</tr>
<tr>
<td>6-10</td>
<td>32</td>
<td>21.2</td>
</tr>
<tr>
<td>11-15</td>
<td>28</td>
<td>18.5</td>
</tr>
<tr>
<td>&gt;20</td>
<td>11</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td>151</td>
<td>100</td>
</tr>
</tbody>
</table>
In comparing the sex of the respondents to length of employment with current employer (Table 4.4) it becomes quite evident that women in management were a rare sight more than 20 years ago. 28.6 per cent of the female respondents had been with their employer for periods between 16-20 years compared to 17.5 per cent of men.

Table 4.4 Length of employment with current employer by sex of respondent

Crosstabulation: Q1.2 SEX
By Q1.3 TERM WITH EMPLOYER

<table>
<thead>
<tr>
<th></th>
<th>Col Pct</th>
<th>Count</th>
<th>Row Pct</th>
<th>Row %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Exp Val</td>
<td>0-5</td>
<td>6-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Q1.3D&gt;</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MALE</td>
<td></td>
<td>55.3</td>
<td>29.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40.1%</td>
<td>21.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>90.2%</td>
<td>90.6%</td>
</tr>
<tr>
<td></td>
<td>FEMALE</td>
<td></td>
<td>5.7</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>42.9%</td>
<td>21.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9.8%</td>
<td>9.4%</td>
</tr>
<tr>
<td></td>
<td>Column</td>
<td>61</td>
<td>32</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>40.4%</td>
<td>21.2%</td>
<td>18.5%</td>
</tr>
</tbody>
</table>

Overall women seem to stay longer with their employer than men according to this survey (see Figure 4.4). If this has any significance it will have a definite bearing on the training effort and career development of both sexes.
Figure 4.4 Graphic presentation of Table 4.5.

The results of Still's study also showed that size of the organisation had a bearing on the opportunities given to women managers. Her study showed 76.6 per cent of the women managers came from organisations employing over 1,000 people. This survey shows that 64.3 per cent of the women respondents came from organisations employing over 1,000 people compared to 59.1 per cent for men (see Table 4.5).

Table 4.5 Crosstabulation of sex of respondents by size of organisation

<table>
<thead>
<tr>
<th>Crosstabulation:</th>
<th>Q1.2</th>
<th>SEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Q1.8</td>
<td>EMPLOYERS</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q1.8D&gt;</th>
<th>Count</th>
<th>Exp Val</th>
<th>Row Pct</th>
<th>Col Pct</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&gt;1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>81</td>
<td>137</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>81.7</td>
<td>90.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>59.1%</td>
<td></td>
<td>90.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.3%</td>
<td>9.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>64.3%</td>
<td></td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column</td>
<td>90</td>
<td>151</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>59.6%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Management positions have been dominated by men, but now more women are beginning to move into senior management positions. The changes are, however, slow. Even in the USA, where affirmative action legislation of a strong variety had been in operation for over a decade, only an estimated 5.6 per cent of women held management positions in 1976 compared with 12.9 per cent of men, according to ILO figures (Place: 1981, p. 38). Mansfield (1980: p. 18) reports that British studies show that less than 2 per cent of the respondents in those studies were women.

4.3.4 Length of employment in current position

The majority of the respondents had been in their current position for less than 2 years (66.7 per cent). In fact 90.7 per cent had been in their present position for less than five years (see Table 4.6). 90 per cent of the respondents who had been in their current positions for under two years were between 26 and 45 years of age (Table 4.7).

Table 4.6 Length of employment in current position

\[ n = 151 \]

<table>
<thead>
<tr>
<th>Time (years)</th>
<th>Frequency (f)</th>
<th>Percent (f%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>100</td>
<td>66.7</td>
</tr>
<tr>
<td>3-5</td>
<td>36</td>
<td>24.0</td>
</tr>
<tr>
<td>6-10</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>11-15</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>&gt;15</td>
<td></td>
<td>.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Histogram Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 20 40 60 80 100</td>
</tr>
</tbody>
</table>

\[ 151 100 \]
Table 4.7  Comparison of length of employment in current position with the age of respondents (only 2 periods: 0-2 and 3-5 shown on table).

Crosstabulation: Q1.4
By Q1.1

<table>
<thead>
<tr>
<th>Exp Val</th>
<th>&lt;25</th>
<th>26-35</th>
<th>36-45</th>
<th>45</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Col Pct</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q1.4</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>0-2</td>
<td></td>
<td>3</td>
<td>51</td>
<td>43</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Row Pct</td>
<td>2.0</td>
<td>42.0</td>
<td>48.0</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0%</td>
<td>51.0%</td>
<td>43.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>81.0%</td>
<td>59.7%</td>
<td>25.0%</td>
</tr>
<tr>
<td>3-5</td>
<td></td>
<td>2</td>
<td>11</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Row Pct</td>
<td>.7</td>
<td>15.3</td>
<td>17.3</td>
<td>2.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>30.6%</td>
<td>63.9%</td>
<td>5.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>17.5%</td>
<td>31.9%</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

The 'other' category accounted for 26.8 per cent of the total respondents. The positions of the 'others' in the survey is found in Appendix D.

4.3.5  Level of seniority within the organisation

62.4 per cent of the respondents are of the managerial category (see Table 4.9). Managers in this research are employees who perform managerial functions, for example, head of a department or division in the organisation and designated as being in the managerial category by their organisations. A General Manager is the person who is responsible for a range of functions within an organisation (Lawrence: 1984, p.9). In large organisations the General Manager can be in charge of a range of managerial functions, with functional managers reporting to him.
Table 4.8 Level of seniority within the organisation

n = 149

<table>
<thead>
<tr>
<th>Level</th>
<th>f</th>
<th>f%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen Mgr</td>
<td>16</td>
<td>10.7</td>
</tr>
<tr>
<td>Manager</td>
<td>93</td>
<td>62.4</td>
</tr>
<tr>
<td>Other</td>
<td>40</td>
<td>26.8</td>
</tr>
</tbody>
</table>

The number of respondents who were categorised as General Managers was 10.7 per cent. The 'others' category was made up of employees who did not belong to the managerial or General Manager categories. In a number of cases the job performed by the 'others' warranted a managerial classification but this was not done to avoid ambiguity. The research sought clearly defined classifications for the managerial and general manager categories.

It is interesting to note that women were not represented in the General Manager category at all (see Table 4.9).
Table 4.9  Comparison of the sex of respondents to seniority of the position

Crosstabulation:  Q1.5
By Q1.2

<table>
<thead>
<tr>
<th>Q1.2</th>
<th>Exp Val (Row)</th>
<th>MALE (Col)</th>
<th>FEMALE (Col)</th>
<th>Row Pct</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Q1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>GEN.MGR</td>
<td>2</td>
<td>16</td>
<td>0</td>
<td>10.7%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14.5</td>
<td>1.5</td>
<td>0</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>11.9%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGR</td>
<td>3</td>
<td>83</td>
<td>10</td>
<td>93</td>
<td>62.4%</td>
</tr>
<tr>
<td></td>
<td>84.3</td>
<td>8.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>89.2%</td>
<td>10.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>61.5%</td>
<td>71.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>4</td>
<td>36</td>
<td>4</td>
<td>40</td>
<td>26.8%</td>
</tr>
<tr>
<td></td>
<td>36.2</td>
<td>3.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>90.0%</td>
<td>10.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.7%</td>
<td>28.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.3.6  Industry category of the respondents organisation

The industrial category adopted in this survey was chosen to give a clear representation of the employment categories of the respondents. In this classification 11 industrial categories were adopted (see Table 4.10).
Table 4.10  **Industry category of the respondents organisations**

\[ n = 150 \]

<table>
<thead>
<tr>
<th>Industry Category</th>
<th>( f )</th>
<th>( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt</td>
<td>44</td>
<td>29.3</td>
</tr>
<tr>
<td>Defence</td>
<td>14</td>
<td>9.3</td>
</tr>
<tr>
<td>Explor</td>
<td>14</td>
<td>9.3</td>
</tr>
<tr>
<td>Manuf</td>
<td>30</td>
<td>20.0</td>
</tr>
<tr>
<td>Service</td>
<td>4</td>
<td>2.7</td>
</tr>
<tr>
<td>Retail</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>Tertiary</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>Profess.</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>Ins-Fin</td>
<td>13</td>
<td>8.7</td>
</tr>
<tr>
<td>Computer</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>2.0</td>
</tr>
</tbody>
</table>

\[ \text{Histogram Frequency} \]

\[ 150 \quad 100 \]

The Government category was made up of Local, State and Federal Government employees, excluding defence personnel and tertiary education employees. The Defence category includes the personnel of the Royal Australian Airforce (RAAF), the Royal Australian Navy (RAN) and the Royal Australian Armed Forces (RAA). The Exploration category included those respondents who were employed by mining industry. In this category the classification comprised of companies whose business was the exploration and supply of iron, petroleum, uranium, gas, coal, lead and other minerals.

The manufacturing industry category includes organisations of respondents engaged in food processing, steel manufacturing, chemical manufacturing, aluminium fabrication, plastics and products manufacturing, sugar refining and processing, paper manufacturing, timber processing, pharmaceutical production, container manufacturing, explosives manufacturing, cement and concrete manufacturing, petrochemical production, beer brewing, non-ferrous metal manufacturing, dairy products processing and builder’s hardware manufacturing.
The service industry category was not well represented in the survey. The four firms identified were engaged in overseas aid work, airlines, hotel and security and payroll servicing. The retail industry category comprised firms engaged in the retailing of products directly to consumers. The firms included in this category were large supermarkets like Target, Coles and Myer.

The tertiary education category comprised of institutions engaged in the teaching of students at technical schools and in higher degree institutions like Colleges of Advanced Education and Universities. The professional category included those respondents who were employed by organisations engaged in giving professional service to their customers. The organisations identified in this survey included provision of the following services: trusteehip and executorship, legal, management consulting, engineering consulting, and executive selection and search. Organisations in the professional industry category were the smallest of those surveyed. 42.9 per cent of these organisations had fewer than 100 employees and the total sample were engaged in firms that did not employ more than 200 people. All other industrial categories were reasonably large in size (see Table 4.11).
Table 4.11 Size of the Industry Category

Crosstabulation: Q1.7 Industry by Q1.8 Size

<table>
<thead>
<tr>
<th>Q1.8 &gt;</th>
<th>Q1.7</th>
<th>Count</th>
<th>50-100</th>
<th>100-200</th>
<th>200-500</th>
<th>500-1000</th>
<th>&gt;1000</th>
<th>Row</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Row Pct</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Col Pct</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>1</td>
<td>1</td>
<td>1.2</td>
<td>2.7</td>
<td>7.1</td>
<td>6.5</td>
<td>26.5</td>
<td>29.7%</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3%</td>
<td>0.0%</td>
<td>13.6%</td>
<td>13.6%</td>
<td>70.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>0.0%</td>
<td>25.0%</td>
<td>27.3%</td>
<td>34.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFENCE</td>
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<td>0</td>
<td>.4</td>
<td>.9</td>
<td>2.3</td>
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<td>8.4</td>
<td>9.5%</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>7.1%</td>
<td>7.1%</td>
<td>0.0%</td>
<td>85.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>11.1%</td>
<td>4.2%</td>
<td>0.0%</td>
<td>13.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLOR</td>
<td>3</td>
<td>0</td>
<td>.4</td>
<td>.3</td>
<td>3.6</td>
<td>2.1</td>
<td>8.4</td>
<td>9.5%</td>
<td>14</td>
</tr>
<tr>
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<td>0.0%</td>
<td>21.4%</td>
<td>7.1%</td>
<td>71.4%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>12.5%</td>
<td>4.5%</td>
<td>11.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANUF</td>
<td>4</td>
<td>0</td>
<td>.8</td>
<td>1.8</td>
<td>4.9</td>
<td>4.5</td>
<td>18.0</td>
<td>20.3%</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>10.0%</td>
<td>30.0%</td>
<td>16.7%</td>
<td>43.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>33.3%</td>
<td>37.5%</td>
<td>22.7%</td>
<td>14.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SERVICE</td>
<td>5</td>
<td>0</td>
<td>.1</td>
<td>.2</td>
<td>.6</td>
<td>.6</td>
<td>2.4</td>
<td>2.7%</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>25.0%</td>
<td>0.0%</td>
<td>25.0%</td>
<td>50.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>11.1%</td>
<td>0.0%</td>
<td>4.5%</td>
<td>2.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAIL</td>
<td>6</td>
<td>0</td>
<td>.2</td>
<td>.5</td>
<td>1.3</td>
<td>1.2</td>
<td>4.8</td>
<td>5.4%</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>12.5%</td>
<td>0.0%</td>
<td>87.5%</td>
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<td></td>
</tr>
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<td></td>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>4.2%</td>
<td>0.0%</td>
<td>7.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TERTIARY</td>
<td>7</td>
<td>0</td>
<td>.2</td>
<td>.4</td>
<td>1.1</td>
<td>1.0</td>
<td>4.2</td>
<td>4.7%</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>57.1%</td>
<td>42.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>18.2%</td>
<td>3.4%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PROFESS</td>
<td>8</td>
<td>3</td>
<td>.2</td>
<td>.4</td>
<td>1.1</td>
<td>1.0</td>
<td>4.2</td>
<td>4.7%</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42.9%</td>
<td>57.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
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<tr>
<td></td>
<td></td>
<td>75.0%</td>
<td>44.4%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
The insurance and finance industry category covers all the firms that are engaged in life and general insurance, investment, banking and financial services. The computer industry as the name suggests, includes computer manufacturers and/or dealers in computer equipment. The last category, which is considered insignificant for the purpose of this research, is labelled 'other'. The three organisations identified in this category are engaged in construction of buildings, contracting and medical diagnostic work (see Appendix E).

4.3.7  Size of the organisations

60.4 per cent of the organisations in the survey had more than 1000 employees (see Table 4.12). Size of an organisation seems to bear a close relationship to the percentage of women employed in an organisation (see Table 4.3) and the industrial category of the respondents’ organisations (Table 4.11). Size is also expected to influence organisational structure and functions in various ways (Stoner et al: 1985, p.302; Mintzberg: 1983; Robbins: 1987; and Thompson: 1967). This will be considered in the research findings.
Table 4.12 Size of the organisations

\[ n = 149 \]

<table>
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<tr>
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<tr>
<td>100-200</td>
<td>9</td>
<td>6.0</td>
</tr>
<tr>
<td>200-500</td>
<td>24</td>
<td>16.1</td>
</tr>
<tr>
<td>500-1000</td>
<td>22</td>
<td>14.8</td>
</tr>
<tr>
<td>&gt;1000</td>
<td>90</td>
<td>60.4</td>
</tr>
</tbody>
</table>

**Histogram Frequency**

4.3.8 Training Department

In the current research only respondents who said that their organisation had some form of training were included in the survey. This restriction was further imposed to admit into the results only respondents whose organisations conducted training either through the training department or the personnel department (or related human resource departments). Of the one hundred and fifty one respondents, one hundred and three respondents' organisations had formalised training departments while forty eight did not (see Table 4.13).
Table 4.13  Training department

\[ n = 151 \]

<table>
<thead>
<tr>
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<th>( f% )</th>
</tr>
</thead>
<tbody>
<tr>
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<td>103</td>
<td>68.2</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
<td>31.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>( f )</th>
<th>( f% )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>151</td>
<td>100</td>
</tr>
</tbody>
</table>

4.3.9  Training Manager

The second variable in the formalisation measure is the position of the training manager. One hundred and eleven respondents in the survey said that their organisations had a training manager and thirty eight said they did not. The majority of the organisations that had formalised training departments also had training managers; that is ninety two of the training departments had training managers (see Table 4.14).

Table 4.14  Number of training managers compared to the number of training departments

Crosstabulation:

<table>
<thead>
<tr>
<th>Training DEPT</th>
<th>Q1.10</th>
<th>TRAINING MANAGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Q1.12</td>
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<td>NO</td>
</tr>
<tr>
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<td>Count</td>
<td>Row Pct</td>
</tr>
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<td></td>
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</tr>
<tr>
<td>Q1.10</td>
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<td>92</td>
</tr>
<tr>
<td>YES</td>
<td>91.1</td>
<td>8.9</td>
</tr>
<tr>
<td>NO</td>
<td>39.6</td>
<td>60.4</td>
</tr>
</tbody>
</table>

Column 111 38 149
Total 74.5 25.5 100.0
4.3.10 Training Function

The purpose of question 1.14 was to gather information from respondents on the importance given to the training function in their organisation. 52% of respondents believed that training was a major function in their organisation while 45.7% did not (see Table 4.15).

Table 4.15 Training function

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>f%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>79</td>
<td>53.4</td>
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<tr>
<td>No</td>
<td>69</td>
<td>46.6</td>
</tr>
<tr>
<td></td>
<td>148</td>
<td>100</td>
</tr>
</tbody>
</table>

The importance given to the training function is also seen as a measure of formalisation of training in the organisation.

4.4 Research Implications

The character of the survey had important implications for the current research. In studying any correlation it is important that the independent variables of the research be understood so that proper relationships between variables can be established.

A number of characteristics have been highlighted in the analysis of the demographic variables. The following are some which may influence the study of the training system.

1. The industry type
2. The size of the organisation
3. The extent of formalisation of training as shown by the existence of
   - a training department
   - a training manager and
   - the importance of the training function in the organisation.

The overall contribution of this chapter in the study of the dimensions that relate to training systems effectiveness was to provide an understanding of the variables that may influence the structural and functional aspects of the systems model. This was also referred to in the theoretical studies in Part 1 and is the subject of analysis in later chapters.
PART 3

FINDINGS

Relationship of Structural Variables to Training System Performance Criteria

Chapter 5: Industry type

Chapter 6: Size of the organisation

Chapter 7: Formalisation of the training system

A. The Training Department
B. The Training Manager
C. The Training Function
Introduction

The Framework of Analysis

The purpose of studying the various aspects and practices of the training systems in different industry categories is initially to have an overview of the current emphasis of training, its needs and support within organisations in Australia. This has not been done to date.

This is an exploratory study and it should provide future researchers with some understanding of the multitude of influences upon the training system and perhaps also the importance of formalising training as a useful function within the organisational system.

The theoretical models illustrated in Figures 3.2 and 3.3 provided the major framework for the analysis of this research. Conceptual models of this kind help in structuring the research strategy and the data for analysing and identifying the variables within and outside the organisation that are related to the effectiveness of training systems.

The emphasis of this part of the research is on the study of the relationship between the training systems effectiveness criteria and the structural variables. The training system criteria are the measures of the functional aspects of the training system as perceived by the respondents in the survey.

The organisational variables structural relationship to the nature, aspects and practices of training within the organisation will be covered in Chapters 5 to 7. The factors considered are:

1. Industry types and their relationship to the effectiveness of the training system.
2. Size of the organisation and its relationship to training system effectiveness.
3. Formalisation of training and its relationship to the effectiveness of the training system.

The industry type and its relationship to training system effectiveness will be discussed in Chapter 5. The training system effectiveness variables will be the dependent variables and the industry type the independent or predictor variable. Another structural variable, size of the organisation constitutes the independent variable in Chapter 6 and its relationship to the training system effectiveness criteria will be considered. Chapter 7 will cover the formalisation variables and will study their relationship to training systems effectiveness criteria measures.

The system effectiveness criteria will be considered as dependent variables while the structural variables will be held constant and studied as independent variables. The relationship of the structural variables with the system effectiveness criteria will be the main thesis of this part of the research. The main factors considered in the training system effectiveness criteria can be grouped as follows:

1. Systematic Planning
2. Communication
3. Resource Acquisition and Utilisation
4. Internal Coordination and Integration
5. External Coordination and Integration
6. Maximisation of efficient output
7. Identity and status
8. Conflict resolution and internal cohesion

The purpose of this part is to identify the structural factors that relate to training system effectiveness. In the first instance, the objectives were to show:

1. that there are relationships between the type of industry and the training system.
2. that the size of the organisation is related to perceptions of various aspects of the training system in organisations.
3. that formalisation of the training system is perceived as positively related to the organisation.

To be able to research and analyse the data the objectives of this survey were translated into null hypotheses and were tested as specified in Chapter 3.

The null hypotheses

The null hypotheses to be tested in this part are:

H1 - that there is no predictable relationship between the type of industry, in this instance the independent variable, and the dependent variables governing the perceptions of the respondents, of the training system in their organisations.

H2 - that there is no predictable relationship between the size of the organisation, in this instance the independent variable, and the dependent variables governing the perceptions of the respondents, of the training system in their organisation.

H3 - that there is no predictable relationship between the formalisation of the training system within the organisation and the perceptions of the respondents of training systems effectiveness.

In accordance with the concept of a null hypothesis, a rejection of it would draw the findings closer to the stated objectives and show evidence of a relationship between the sample data and the hypothesised data.

The structural variable instrument of measure

The Likert 5 point interval scale has been adopted in measuring all the functional and environmental factors. The following is a representation of the measure on which 1 measures a low response, 2 below satisfactory, 3 satisfactory or average, 4 above satisfactory, and 5 a high response.

(Low) 1 2 3 4 5 (High)
CHAPTER 5

RELATIONSHIP OF THE INDUSTRY CATEGORY TO TRAINING SYSTEM EFFECTIVENESS

5.1 Introduction

Studies have shown that industry categories influence the type of strategies that an organisation in a particular industry will choose (Miles and Snow: 1981). This relationship is shown below in Figure 5.1.

Industry \(\longrightarrow\) Strategy \(\longrightarrow\) Structure

Figure 5.1 Industry-structure relationship

Therefore organisations within a given industry tend to have similar characteristics and these characteristics will influence the type and methods of training seen as important in these organisations as opposed to organisations belonging to a different industry category.

5.2 The Industry Type

The following are the descriptions of the 10 significant effectiveness criteria that have predictable relationships with the industry nature of the organisations.

Q2.1.2 Written training department policy
Q2.3.2 Long-range planning of training services
Q2.4.4 Existence of a database
Q2.5.1 Adequate finance for training activities
Q2.8.1 Reactive planning based on evaluative feedback
Q2.8.2 Proactive planning based on new developments
Q2.10.1 A conflict monitoring mechanism between the training system and other areas of the organisation
Q2.11.2 Quality of training program
Q2.13.1 Professional standards
Q2.15.2 Formality of rewards and sanctions.

In the analysis of the industry category's relationship to the training effectiveness variables, the industry category was taken as the predictor variable and the training effectiveness criteria as the dependent variables.

Of the 69 dependent variables in the effectiveness category, 10 are considered to have a strong relationship with the nature of the industry and therefore have relevance to this study.

As stated earlier, the chi-square test for goodness of fit determines how well the data \((f_0)\) fit the null hypotheses \((f_e)\). If there is a large discrepancy between \(f_0\) and \(f_e\) the null hypothesis will be rejected.

5.2.1 Measures of association

Since chi square by itself is not a good measure of the degree of association between two variables, some of the measures of association based upon the chi-square need to be examined. Specifically for the purpose of this research the Pearson Coefficient of contingency \((C)\) and Cramer's \(V\) will be employed. These two measures attempt to modify the chi square statistics to restrict the range of values measured to those between 0 and 1 and to minimise the influence of sample size and the degree of freedom. The adjustments are necessary to make comparison of chi square values from tables with varying categories and sample size (Norusis: 1986, p.100).

Another alternative to measures based on the chi-square that was used is Goodman and Kruskal's lambda \((\lambda)\) which measures the predicted variables outcome as a reduction of error in measuring the value of one variable against another.
The following are descriptions of the ten training system effectiveness criteria that are found to have a significant relationship with the industry type. Table 5.1 shows the statistical configurations.

5.3 **Written training department policy**

In the crosstabulation table 5.2, the defence, exploration, retail, and computer industry respondents have indicated positive responses to the existence of a written training department policy defining specific training missions and objectives. This is quite understandable in these professional categories where regularisation of skills is an important part of organisational performance. These categories have over 75% in the high response cells of 4 and 5.

Little emphasis seems to be placed on the importance of a written training department policy in tertiary institutions (75% average and below response) manufacturing (59% below satisfaction) and the professional category (71.5% average and below average satisfactory response). The insurance and finance categories have a positively skewed response with a spread across the five interval scales.

The lambda outcome is .178, indicating that a 17.8% reduction in error is obtained when written training department policy is used to predict the outcome in the industry category. The contingency coefficient ($C = 0.525$), which is a measure of variability between the dependent and predictor variable, is 53%. There is an observable variance between the two data.
Table 5.1 Statistical configurations of industry type to the training systems effectiveness criteria

<table>
<thead>
<tr>
<th></th>
<th>X²</th>
<th>df</th>
<th>significance</th>
<th>C</th>
</tr>
</thead>
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<td>0.0590</td>
<td>0.178</td>
</tr>
<tr>
<td>2. Long range planning</td>
<td>55.86</td>
<td>40</td>
<td>0.0490</td>
<td>0.147</td>
</tr>
<tr>
<td>3. Database</td>
<td>71.06</td>
<td>40</td>
<td>0.0018</td>
<td>0.125</td>
</tr>
<tr>
<td>4. Adequate funds for training</td>
<td>53.80</td>
<td>40</td>
<td>0.0310</td>
<td>0.16</td>
</tr>
<tr>
<td>5. Reactive planning based on evaluation feedback</td>
<td>69.51</td>
<td>40</td>
<td>0.0026</td>
<td>0.129</td>
</tr>
<tr>
<td>6. Proactive planning based on new developments</td>
<td>64.63</td>
<td>40</td>
<td>0.0081</td>
<td>0.1531</td>
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<tr>
<td>7. Conflict monitoring mechanism between the training system and other areas of the organisation</td>
<td>57.30</td>
<td>40</td>
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<td>0.159</td>
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<tr>
<td>8. Quality of training program</td>
<td>58.80</td>
<td>40</td>
<td>0.0279</td>
<td>0.093</td>
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<tr>
<td>9. Professional standards</td>
<td>65.10</td>
<td>40</td>
<td>0.0073</td>
<td>0.163</td>
</tr>
<tr>
<td>10. Rewards and sanctions</td>
<td>60.18</td>
<td>40</td>
<td>0.0211</td>
<td>0.205</td>
</tr>
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</table>
Table 5.2 Industry type by written training department policy

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<tr>
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<td>4</td>
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<td>8</td>
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<td>13.3</td>
<td>25.9</td>
<td>29.4</td>
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</tr>
</tbody>
</table>

Chi-square | D.F. | Significance
54.80539 | 40 | .0595
Cramer's V | .30954
Contingency Coefficient | .52637
Lambda Outcome | .17822
5.4 Long range planning

In the crosstabulation tables (see Table 5.3), the computer industry rated highly in terms of perceptions of the existence of long range planning activities for future development of training services. This suggests a high technology component in the industry and the need for changes in the technology applications at short notice. A response of 75% in the above satisfactory and high response levels indicates this requirement for strong exposure to training needs in a very competitive industry. This is followed by a 50% perception in the above satisfactory response by the service industry and the insurance and finance industry perceiving a 46.2% above satisfactory level for the existence of long range planning for future development. The data for the service industry could be biased due to its small sample size. The survey then reflects the opinion that the need for long range planning of training activities is more of a concern in industries like computers, insurance and finance, where there is high exposure to changing environmental needs and applications of technology.

The tertiary education and the manufacturing industries' responses indicated little long range planning in training activities at 75% and 55.1% respectively, below the satisfactory level. It is noteworthy that the defence category responses were 53.9% below the satisfactory level. However, the defence category's responses concerning the existence of training department policy, 76.9% rated above satisfactory. This finding tends to suggest that the existence of department training policy need not be any indication of long-range planning activities in training.
Table 5.3 Industry type by long range planning

<table>
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<tr>
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<td>44</td>
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Chi-square | D.F. | Significance
55.86721 | 40 | .0490

Cramer's V | .31036
Contingency Coefficient | .52738
Lambda outcome | .14706
Situational factors could be a deciding factor. The Defence Departments comprising of the RAN, RAAF and RAA are highly bureaucratised. However, they are operating in an environment that is not dynamic and expected outcomes are occurring on a regular basis without much change required. This is, in fact borne out when we consider the responses of the defence category respondents on the rating of their immediate environment (see Table 7.6).

The insurance and finance industry has a slightly positive skew, with very little clear pattern in the responses. The professional category has a definite negative skew, with 57.2% indicating a below satisfactory response.

5.5 Database

As expected the crosstabulation tables (Table 5.4) show the computer industry again having the highest response of 60% at the high response rating. However overall for most of the industries there was a lower response rate, indicating a perception that a database of regularly updated training information was below average for these industries. Exploration industry responses indicated a 66.7% above satisfactory level.

The nature of the industry again seems to have an influence on this criterion. The tertiary category seems to be notorious in its perceptions of the lack of a database, according to responses received, with a 71.5% below satisfactory level. This is followed by the manufacturing industry with 70.3%. The government and defence categories are also low at 50.1% and 53.9% respectively. The overall implication is that the creation of a database of training information in most Australian industries is a low priority in managerial resource allocation.
Table 5.4 Industry type by database

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Chi-square  | D.F.  | Significance
71.06970    | 40    | .0018
Cramer's V   | .35373|
Contingency Coefficient | .57754|
Lambda outcome | .12500|
5.6 Adequate funds for training

Availability of funds for training purposes seems to be of little concern to respondents from the computer industry and the exploration industry, which appear to be quite well endowed in this respect (see Table 5.5). Their responses showed an 80% and 75% above satisfactory rating respectively.

One would have expected a higher response in the defence category but in fact there was a very large response (61.6%) below satisfactory rate. The response expected here was high in terms of funding of training activities, as the major activity of the three defence forces, RAN, RAAF and RAA in peace time, is maintaining alert and ever-ready defence personnel. That funding is in fact, perceived to be poor can be attributed to the Federal Government’s funding policy. Thus, the perceptions of respondents have, no doubt been influenced by the Government’s general cutback in funding.

The professional category also seems to also suffer the problem of inadequate funds for training. In this instance, funding can be linked to the size of firms in the industry (see Table 5.6). 42.9% of the respondents in the professional category come from organisations with fewer than 100 employees and the total professional category sample work in organisations with fewer than 200 employees. This stark comparison becomes evident when one recalls that 60.1% of the total survey sample are from organisations with over 1000 employees.
Table 5.5 Industry type by adequate finance

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Chi-square | D.F. | Significance |
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58.25561   | 40   | .0310        |

Cramer's V | Contingency Coefficient | Lambda Outcome |
------------|--------------------------|----------------|
.31476      | .53275                   | .16038         |
Table 5.6 Industry type by size

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Chi-square: 119.70304, D.F.: 40, Significance: .0000
5.7 Reactive planning based on evaluative feedback

Lack of reactive planning of training, based on needs and demands of the trainees in training programmes, seems to be a weakness in the overall Australian system (see Table 5.7). Most of the industrial categories are positively skewed, meaning that the respondents have indicated that there is very little evidence of reactive planning of training based on evaluation feedback from training programmes.

In Table 5.8, 56.9% of respondents from the government sector, 53% of those from the defence, 60% from manufacturing, 37.5% from retail and 30.8% from the insurance and finance industry have indicated below satisfactory ratings for competent evaluation of training programmes. 63.4% of the government respondents, 76.9% of those from defence, 78.3% from manufacturing, 50% from retailing and 61.6% from insurance and finance, have rated reactive planning of training from evaluation of training programmes as below satisfactory (see Table 5.7). This suggests that, in many industries, the implementation of reactive planning, based on evaluative feedback, lags behind competent evaluation of training performance.

The computer industry responses indicated 60% support for reactive planning in the highly satisfactory cell in Table 5.7, but 40% below satisfaction for competent evaluation, (Table 5.8). This response is perhaps due to the nature of the industry, having to react to changes fast to ensure its survival in the short term. Evaluation perhaps is not as sound as it could be. The same reasoning can be applied to tertiary institutions. They are not competent evaluators of programmes (Selvarajah: 1987; Weeke: 1987), but react to feedback from evaluation, perhaps as a justification of the nature of the industry. This is evidenced by the current general dissatisfaction that the education industry is slow to respond to changes required by the Australian economy (Frazer: 1987). Perhaps this is another reason why changes are being implemented in the Australian tertiary system. The present indications are that the system is 'under overhaul' due to the
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Cramer's V    | Value
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Contingency Coefficient | .56924
Lambda outcome | .12903
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Cramer’s V: .28443
Contingency Coefficient: .49445
Lambda Outcome: .15842
breakdown of the binary system which has existed in Australia since the mid 1960's. A change of Minister was the political tactic to effect a fast change over, with as little embarrassment as possible to the current government. However no competent evaluation has taken place of the most appropriate structure that should replace the binary system. It seems likely that Australian tertiary education is still going to have a binary system with a difference (Universities of Technology and traditional universities).

It is not within the scope of this thesis to discuss the education issue in depth but the current situation does reflect the lack of competent evaluation where staff (the main resource of tertiary institutions) have not been involved, but swift actions are being taken to solve a 'problem'.

5.8 Proactive planning based on new development

Proactive planning has been indicated by the responses from the computer (80%), retail (50%) and exploration (48.5%) categories as being above satisfactory importance in these industries (see Table 5.9). Proactive planning based on the development of new training techniques and company development is again a high priority in the computer industry because of the very competitive technology component. Retailing, being a service industry, is very customer-related and the current growth of mega supermarkets emphasises the battle for market share by providing 'total' consumer satisfaction under one roof. This again entails a competitive edge that is enhanced by reacting to satisfaction of consumer demands and needs by training all staff to meet the new challenges. 57% of the respondents have stated that their industry is in a relatively dynamic environment.

The same view is not evident in the industrial categories of defence (46.2%), manufacturing (73.3%), tertiary education (50.0%) and insurance and finance (61.6%). The lack of support for reactive and proactive aspects of training activities in the manufacturing industry will not be beneficial to the industry if it is to become
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more export oriented. Productivity is based on output, which is influenced by the quality of performance of its resources. Of all the resources, the manpower component is the most subjective in nature and one in respect of which training can have an impact on performance.

The insurance and finance industry's commitment to proactive and reactive planning of its training activities appears to be lacking and yet 58.3% of respondents (see Table 5.10) indicated that training was a major function of their organisation. Of those who disagreed that training was a major function in their organisation, 66.7% indicated that training should be a major function of the organisation (see Table 5.11).
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Cramer's V  
Contingency Coefficient  
Lambda outcome  

Value  
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.36623  
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5.9 Conflict Monitoring Mechanisms between the Training system and other areas of the organisation

The survey indicates that there is perceived to be a lack of structure for proper monitoring of differences that can often take place between the training system and other parts of the organisation (p < .037) (see Table 5.12). Dissatisfaction with the training system's performance may exist and there is no proper conflict monitoring mechanism. Dissatisfaction is then not 'aired' and the only mechanism for this purpose is the evaluation after training programs. This evaluation however does not allow the 'airing' of overall dissatisfaction. Conflict here is not seen as a negative phenomenon (March and Simon: 1958; Thompson: 1960) but a function that is creative in nature if proper conflict monitoring devices are installed.

The statistics that support this relationship between the two variables are Lambda outcome = .159 indicating a reduction in error of 15.9% between the predictor variable, mechanism for monitoring conflict and the outcome within the industry category. C = .539 predicting a 54% variability between the two data.

5.10 Quality of training program

Most of the respondents in the different industrial categories have indicated a perception that the quality of the training programmes conducted in their organisation are above satisfactory level (see Table 5.13). The computer and manufacturing industry respondents have rated 80% above satisfactory level. The tertiary institution respondents have also assessed very favourably their quality of programs (71.4%, above satisfactory).

The implication from this study is that the quality of the program might not by itself indicate the overall effectiveness of the training system. This has been the traditional approach to assessing training effectiveness. While this criterion shows high or positive support for training effectiveness, there are other variables, some of which we have analysed, which can influence a training system's measure of effectiveness.
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**Lambda outcome**

| Lambda outcome | 0.09302 |
The following statistics support the above analysis, relating industry category to the quality of training program. The lambda outcome is equal to .093, indicating a reduction in error between the two predictor data of 9.3% and the outcome within the industry category. C is equal to .538, predicting a 54% variability between the two sample data.

5.11 Professional standards

Except for exploration (92.3%) and the computer industry (80%) where the respondents have indicated above satisfactory professional standards in the training department, there is a much lower level of approval shown in the other industrial categories (Table 5.14). The government, manufacturing, retail and the insurance and finance industries have indicated perceptions of average professional standards being maintained in their respective areas. The tertiary institutions have rated at 57.1% above satisfaction, indicating that standards are seen as reasonably professional in the teaching arena.

The statistics that lend support to the findings are a Lambda outcome equal to .163, predicting a 16.3% reduction in error between the predictor variable, professional standards and the outcome within the industrial category. The contingency coefficient C is equal to .566, reflecting a 57% variability between the two variables.

5.12 Reward and sanctions

The computer industry has an overall 80% above satisfactory level in the respondents' approval rating of a system that is formally designed to handle rewards for good performance and correction procedures for lack of, or poor performance, (see Table 5.15). Again, the highly competitive nature of the industry is reflected in this outcome. The exploration (54.6%) and defence (50%) industries' responses suggest the existence of a formal rewards and sanctions system but with approvals running at a lower level. Again the industry setting is important in interpreting the results. The environmental impact will be considered in Chapter 9.
Table 5.14 Industry type by professional standards

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Cramer's V

Contingency Coefficient

Lambda outcome
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5.13 Summary

Robbins (1987: p.98) has drawn attention to the nature of the industry having an impact on the structure of organisations. This section of the research does support the view that industry structure has some relationship to the training systems effectiveness. Miletì et al (1977, pp.208-217) also argue that there are differentiating characteristics of industries that have an influence on the strategies that organisations choose within particular industries.

Montanari (1976) recommends that the examination of an organisational system should also involve some study of the industry within which it is embedded. This allows insight into the operational aspects and the industry norms which have a definite bearing on the variables influencing the behaviour of the parts within the system or systems. This has been a major driving force in the current study of operationalising Montanari’s philosophy, by considering the nature of the industry within which the organisation is found before undertaking any study of systems effectiveness.

We have been able to identify specifically ten predictor variables that are related to the industrial categories and have related them to the study of training systems effectiveness (see Table 5.1).

Robbins Industry-Structure relationship model (see Figure 5.1) is modified in Figure 5.2 to suggest that there are predictor variables which may determine the structure of the industry. In this survey there are 10 such predictor variables. This relationship is shown in Figure 5.2.
Chandler in an earlier study (1962, p.13) concludes that, of nearly 100 of the U.S.A.'s largest business firms which he studied, the proposition that structure follows strategy is supported widely. Robbins cautions against global acceptance of this view and argues that there are limitations in Chandler's research which restrict generalisation (p.100). According to Robbins, the state of the immediate environment may influence strategy rather than strategy determining structure.

This survey implies that there are conditions in the immediate environment which may have some influence on the structure of the organisation. For example the defence category shows more of a structure - strategy relationship, which, it is suggested, is the result of operating in a 'static' peace-time environment when compared to the computer industry, which is placed in a very competitive high technology environment with a strategy - structure relationship.
CHAPTER 6

RELATIONSHIP OF SIZE OF ORGANISATION TO TRAINING

SYSTEM EFFECTIVENESS

6.1 Introduction

The issue of size as a determinant of structure has been the subject of an ongoing debate among organisational theorists for some time. There are as many supporters of size as a determinant of structure as critics. The supporters of the size imperative have argued that size influences structure in a number of ways. Blau (1970) found that increasing size promotes structural differentiation but at a decreasing rate. Pugh et al (1972) found in their study of forty-six organisations that increased size was associated with greater specialisation and formalisation. These findings of Pugh et al. were further supported by the research of John Child (1973) who extended the support for the findings. Child found that organisational size was related positively to formalisation, specialisation and vertical span of control, and negatively to centralisation. Meyer (1972) in his research found evidence of support for the size imperative on a longitudinal basis rather than as a causal relationship. His findings showed that size caused structure rather than structure causing size.

The critics of size as a determinant of structure have challenged the findings on methodological grounds or have argued that size is a consequence rather than a cause of structure (Argyris: 1972; Mayhew et al: 1972; Aldrich: 1972; Hall et al: 1967; Geeraerts: 1984).

The relationship of size and structure is not clear (Ford and Slocum: 1977) but size is 'important in predicting some dimensions of structure' (Robbins: 1987, p.110).
The following three training system effectiveness criteria were found to have a strong relationship with the size of organisations, and are of significance to the study. They are also highly correlated with each other. Pearson's $r = .0001$ (see Table 6.1).

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At this point it is also interesting to note that the three predictor variables identified here are also the same three that are found among the 10 predictor variables of the industry category study. A number of studies (Miles, et al: 1981; Robbins: 1987; Miner: 1982 to name a few) have argued for relationships between size to industry and structure. This view will be considered at the end of this section in relation to the training system under consideration.

6.2 Defining size

In this thesis references to the size of organisations are based on the number of employees in the organisation. Most of the studies on size are based on numbers of employees as compared to any other variable. Kimberly (1976) noted that 80% of studies of size of organisation have used the number of employees as the defining variable. This is also confirmed by Robbins (1987, p.104). Though there are other measures of size, Gupta (1980, p.761) argues that the use of employees as a measure of size is as good as any other measure, since it is related to many other measures of size, for example net assets to number of employees (Pugh et al: 1972) and number of hospital patients or school students to employees (Anderson and Warkov: 1961, p.25; Hawley et al: 1965, p.253).
Table 6.1  *Pearson product moment correlation coefficient: size*

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<td>$r = 0.6127$</td>
</tr>
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<td>$P = .000$</td>
<td>$P = .000$</td>
<td>$P = .000$</td>
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</tr>
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<td>$r = 0.6127$</td>
<td>$r = 1.0000$</td>
</tr>
<tr>
<td>$P = .000$</td>
<td>$P = .000$</td>
<td>$P = .000$</td>
<td></td>
</tr>
</tbody>
</table>

$n = 134$ (1-tailed significance)

" . " is printed if a coefficient cannot be computed.

6.3 *Size: written training policy*

In Table 6.2 the link between size of organisation and a written training department policy suggests a strong relationship. Written training policy is what Campbell et al (1967) described as structuring variables as opposed to structure. Structure is quantifiable and can be classified as an objective variable. Structuring variables are subjective but give form to the items under question. Structuring variables are items that give scope for form or structure, for example the perception of the existence of a written department policy or the perception that the training manager is authoritarian. A written training policy can be described as a formalisation of training policy, which is structuring of the system, and the authoritarian nature of the training manager can be perceived as centralisation of the training system, which is also structuring of the system.

The causal relationship between size and formalisation (the existence of a written training department policy) has been of interest to many management theorists (for example Pugh: 1969; Blau: 1970; Child and Mansfield: 1972). The Aston Group of Birmingham University over a number of years studied the dimensions that influence
organisation structure and found that increased size was associated with greater specialisation and formalisation (Hickson et al: 1969).

In the current research this trend is also recognised. Table 6.2 shows that respondents in organisations with over 1000 employees have expressed a high rating (65.1%) of above satisfactory level for the existence of a formal (written) training department policy. The two size levels of 200 to 500 and 500 to 1000 show somewhat similar responses (47.8% and 47.6% respectively). 75% of the respondents in organisations with 100 to 200 employees have indicated that training department policy is largely unwritten in their organisations. The sample data for organisations with between 50 and 100 employees are too small to draw any conclusions from.
Table 6.2 Size by written training policy

<table>
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<td>13.4</td>
<td>26.1</td>
<td>29.6</td>
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</table>

Chi-Square D.P. Significance
34.25302 16 .0050

Value
Cramer’s V .24557
Contingency Coefficient .44084
Lambda .07000

6.4 Size: Quality of training program

This study indicates that the quality of the training programs in organisations do not necessarily depend on size. 60.9% of the respondents in the size category of 200 to 500 employees have given an above satisfactory rating of the quality of the training programs, compared to 45% in the 500 to 1000 employee size organisations, and 57% in organisations with over 1000 employees. 62% of respondents from organisations with between 100 to 200 employees have rated quality of training programs 62.5% below the average (see Table 6.3).
Table 6.3  Size by quality of training programs

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<th>Q2.11.2-+</th>
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<td>Q1.8</td>
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<td>4</td>
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<td></td>
<td>75.0</td>
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<td></td>
<td>2.8</td>
</tr>
<tr>
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<td>8</td>
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<td>37.5</td>
<td>25.0</td>
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</table>

Chi-Square  D.F. Significance

Value

Cramer’s V  .22249
Contingency Coefficient  .40655
Lambda  .09302

The statistics supporting this study are a Lambda outcome equal to .0930, indicating that a 9.3% reduction in error is obtained when quality of training program is used to predict the outcome in the size of the organisation. C is equal to .4065, which indicates a variability of 40.7% between the two samples.

6.5 Size: professional standards

This study again indicates that large size need not indicate the better maintenance of professional training standards in the training departments of the organisation under study (see Table 6.4). 47.6% of
the respondents in organisation with between 200 and 500 employees have rated maintenance of professional standards being maintained in their training departments as above satisfactory compared to 30% in the 500 to 1000 employees size range and 41% in organisations with more than 1000 employees. 56.2% of respondents from organisations with between 100 and 200 employees have rated maintenance of professional standards as below average.

The relevant statistics for this study are a lambda outcome equal to .0870, indicating that an 8.7% reduction in error is obtained when the predictor variable, professional standards, is used to predict the outcome in the size of the organisation. The contingency coefficient is C is equal to .4388, predicting a 44% variability between the predictor variable and the size of the organisation.

Table 6.4 Size by professional standards

<table>
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<th>Count</th>
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<td>500-1000</td>
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<td>32.1</td>
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<td>11.7</td>
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</tbody>
</table>

Chi-Square D.F. Significance
32.65926 16 .0082

Value
Cramer's V .24413
Contingency Coefficient .43875
Lambda .08696
6.6 Summary

The demonstration of a relationship between size and other organisational variables has not enjoyed the empirical research support one would have expected. Mott has tried to relate size to organisation effectiveness and to subsystem effectiveness with limited success.

Many studies (eg. Ford and Slocum: 1977; Milet et al: 1977) have produced contradictory results about the impact of size on structure and strategy. Robbins (1987) summarises the evidence thus:

'A review of the evidence indicates that size has a significant influence on vertical differentiation. The effect of size on spatial differentiation is unclear.' (p.119)

This suggests then that there is no conclusive evidence on spatial differentiation relating to formalisation, decentralization and ownership of organisations (Robbins: 1987, p.119).

The results of this survey seem to indicate a lack of support for a relationship between organisation size and training systems effectiveness. However there is some evidence that there might be an optimal size where training system effectiveness is best realised. In this study, organisations in the 200-500 employee range seem to be the optimal size for an organisation where the performance of the training system can be maximised. Similar trends are indicated by Blau (1970). Evidence also seems to suggest that size and effective functional units within organisations do not show a linear relationship; that is, as the organisation grows, less absolute numbers of supportive personnel are required (Robbins: 1987, p.115); or as the organisation grows, there is a positive correlation according to Parkinson’s Law, that is size and administrative components show a positive relationship. A number of earlier researchers (eg. Tsouderos: 1955; Haas et al: 1963) have also suggested that there is a curvilinear relationship between size and functional units in organisations. The economies of scale have the influence of benefiting organisations of a moderate size where they can enjoy the gains of medium size without the loss of coordination.
and control. This is often a problem in very large organisations. Small organisations, on the other hand, tend to suffer from lack of economies of scale.
CHAPTER 7

FORMALISATION OF THE TRAINING SYSTEM

7.1 Introduction

In this thesis the reference to formalisation of the training system is based on three structural variables; the formalisation of the training department, the existence of the position of training manager and the training function.

Theoretical studies examining formalisation refer to the degree to which jobs within organisations are standardised (Robbins, 1986, p.331). In the current study the standardisation of the training function is related to the three identified predictor variables as indicated above. The three variables embody and also centralise the concepts of the ‘extent to which rules, procedures, instructions, and communications, are written’ (Szilagyi: 1983, p.504).

Formalisation has been related to a number of constructs such as size, centralisation, complexity, etc. Mansfield (1973) reported a correlation of 0.58 between formalisation and size. Robbins (1986) suggests that the degree of formalisation can also vary widely between organisations and within organisations. The earlier studies on formalisation concentrated on manifestations of bureaucracy (Walsh and Dewar: 1987, p.216). This early development is quite easy to understand in terms of Weber’s ‘hallmarks of bureaucracy’ (Weber, 1978, p.973) – where bureaucracy relies on the concept of formalisation (though Weber never actually mentioned the word) to regulate the bureaucratic qualities of ‘precision, speed, unambiguity, knowledge of the files, continuity, discretion, strict subordination, reduction of friction and of material and personal cost’ (Weber: 1978, p.973).

According to Walsh and Dewar (1987: p.216) most organisational theorists have concerned themselves with rules in relation to organisational efficiency. Formalisation was seen as a static
condition with little relationship with effectiveness. It was theorists like Gouldner (1950) and Blau (1956) who considered 'formalisation' as a concept involving rules in a broader social context. (The closest Blau came to using the word formalisation was in reference to formal and informal organisations.) In the 1960’s the word formalisation started appearing in studies of organisational structures (Hall: 1962; Blau: 1964). Hall distinctly identified a number of bureaucratic dimensions in organisations. The two dimensions of relevance, which have become the pillars of the concept of formalisation as we know them today are:

1. Formalisation is a system of rules covering the rights and duties of positional incumbents; and
2. Formalisation is a system of procedures for dealing with work situations.

The study by the Aston Group of Birmingham University gave emphasis to two further dimensions of formalisation. Basically this gave rise to a concept of formalisation not purely as a set of rules and procedures but structuring of activities and centralisation of authority (Pugh and Hickson: 1976, p.3). Blau and Schoenherr (1971, p.113) defined formalisation as 'the standardisation of decision-making in organisations on the basis of a detailed system of formalised procedures'. Research into formalisation as a structural construct has thus been extended to include not only the efficiency aspect of organisations, where procedures and rules are the measurement instruments, but also to include effective measures of activities and authority structure of the system. According to Walsh and Dewar (p.221), efficiency in administration also produces effectiveness, especially in an organisation’s early life cycle. Formalisation contributes to economies of scale and efficient use of organisational resources. They also suggest that, when formalisation leads to centralisation of power for status sake, neglecting the true organisational missions or compromising on them, formalisation can ultimately lead to ineffectiveness and decline.

In the current study, formalisation as a structural construct, measures the extent of the relationship of the formalisation of the
training department, the position of the training manager and the formalisation of the training function, with the training systems' effectiveness criteria. This study then adds to the current development in organisational studies, formalisation as a measure of efficiency and effectiveness in organisational systems.

7.2 Formalisation of the Training System

Formalisation has been found to be highly correlated with centralisation (Cook: 1974) and is negatively associated in other studies with rates of innovation and the organisational adaptability to change (Burns and Stalker: 1961; Hage and Aiken: 1970; Hage and Dewar: 1973; Thompson: 1967).

In the current research, respondents employed in organisations with a training department have rated training more highly than those employed in organisations without a training department, suggesting that the existence of such a department in their organisation contributes to perceptions of an effective training system. Likewise respondents employed in organisations which do not have a training department have rated their training system to be less effective even though training is conducted through the personnel department.

It should be re-emphasised that only the respondents from the postal questionnaire who stated that their company conducted training for their employees were included in this survey. Also, only the responses suggesting the existence of a training department or a training function attached to the personnel department, were processed. Therefore of the one hundred and fifty one questionnaire respondents included in the industry sample, 68 per cent said that their organisations had a training department and 32 per cent said that the training function was attached to the personnel department.
7.3 Formalisation Variables

In the study of the relationship between formalisation and the training systems effectiveness criteria, the following structural (independent) variables were identified as measures of formalisation of the training system in the current study.

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<th>Variable</th>
<th>Label</th>
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<tr>
<td>Q1.12</td>
<td>Formalisation of the position of Training Manager</td>
</tr>
<tr>
<td>Q1.14</td>
<td>Formalisation of the Training Function</td>
</tr>
</tbody>
</table>

Each of the independent variables were correlated to the training system effectiveness criteria separately as shown in Table 7.1. In the study relative to the formalisation of the training department, 64 of the 69 training systems effectiveness criteria were found to be significantly related (p < .05, r ≥ 0.16).

Table 7.1 Correlation of the training system with training system effectiveness criteria

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<th>TM***</th>
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<td>.0016</td>
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<td>Q2.1.3 Involvement of line management in</td>
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<td></td>
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<tr>
<td>training policy</td>
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<td>.0001</td>
<td>.0214</td>
</tr>
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<td>Q2.2.3 Line feedback on training evaluation</td>
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<td>Q2.4.1 Communication between T staff and line</td>
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<tr>
<td>management</td>
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<td>.0008</td>
<td>.0023</td>
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<td>Q2.4.2 Communication between TD and personnel department</td>
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<td>.0114</td>
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<td>.0044</td>
<td>.0193</td>
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<td>Q2.5.2 Appropriate training staff</td>
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<td>.0070</td>
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<td>Q2.5.4 Access to specialised external training</td>
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Q2.6.1 Analysis of training tasks based on education .0000 .0002 .0435
Q2.6.2 Competent preparation of training courses .0000 .0018 .0038
Q2.6.3 Company wide meeting to determine training needs .0040 .0004 NS
Q2.6.4 Competent evaluation of training performance .0000 .0001 .0001
Q2.7.1 Company-wide analysis of training needs .0000 .0000 .0079
Q2.7.2 Regular survey of specialised training needs .0000 .0004 .0073
Q2.8.1 Reactive planning .0000 .0001 .0090
Q2.8.2 Proactive planning .0000 .001 .0037
Q2.9.1 Review mechanism for integration .0014 .0005 .0122
Q2.9.2 Channels of coordination .0086 .0005 .0020
Q2.10.1 Monitoring mechanisms of potential conflict .0003 .0050 .0152
Q2.10.2 Conflict resolution mechanism .0124 NS NS
Q2.11.1 Training staff performance .0000 .0015 NS
Q2.11.2 Quality of training programmes .0000 .0015 NS
Q2.11.3 Training staff productivity .0002 .0285 NS
Q2.12.1 Worker participation encouraged by TM .0220 .0435 NS
Q2.12.2 TM encourages decision making .0282 .0073 NS
Q2.12.3 TM exhibits communication skills .0004 .0404 .0358
Q2.12.4 TM exhibits dogmatism and authoritarianism NS .0108 NS
Q2.12.5 TM encourages problem-solving orientation .0000 .0173 .0040
Q2.12.6 TM supports social needs of employees .0263 NS NS
Q2.13.1 Professional standards .0062 .0025 NS
Q2.13.2 TM upholds professional standards .0015 .0055 NS
Q2.13.3 Flexibility of professional standards .0096 NS .0377
Q2.14.1 Formal system for monitoring performance .0000 .0000 .0049
Q2.14.2 Assessment of trainees in training programs .0000 .0002 .0077
Q2.14.3 Immediate feedback from training programs .0000 .0019 .0020
Q2.15.1 Motivation for performance in the training system .0002 .0000 .0053
Q2.15.2 Formality of rewards and sanctions .0003 .0000 .0156
Q2.16.1 Qualified training staff .0253 .0296 .0291
Q2.16.2 Experience of training staff .0255 NS NS
Q2.16.3 Opportunities for training staff to upgrade skills .0001 .0006 .0058
Q2.16.4 Cooperation of training staff and other staff .0008 .0119 .0232
Q2.17.1 Cooperation between training staff in team operations .0000 .0002 .0001
Q2.17.2 Problem-solving orientation of training staff .0023 .0039 .0490
Q2.17.3 Conceptual flexibility of training staff .0074 NS .0195
Q2.17.4 Cohesiveness of training staff in group decision-making .0142 NS NS
Q2.18.1 Openness and flexibility of training staff communication .0232 NS NS
Q2.18.2 Channels of communication between geographically separate training staff .0110 .0116 NS
Q2.18.3 Access of training staff to group information  NS  .0132  NS
Q2.19.1 TM integrate training staff efforts  .0051  .0099  NS
Q2.19.2 Perceived equity of TM's allocation of resources  .0062  .0059  NS
Q2.19.3 Staff inputs to planning  .0043  .0388  NS
Q2.19.4 Training in group efficiency for problem solving  NS  NS  NS
Q2.20.1 Training staff relationship is satisfactory  .0076  .0170  NS
Q2.20.2 Mechanism for conflict resolution  NS  NS  NS
Q2.21.1 TD and training staff reputation  .0000  .0018  NS
Q2.21.2 Interest of training staff represented at top management  .0006  .0001  .0073
Q2.21.3 Perceived importance of training  .0083  .0000  NS
Q2.21.4 Training staff competency  .0001  .0011  NS
Q2.22.1 T staff's ability to anticipate changes  .0003  .0035  .0023
Q2.22.2 T staff's ability to adapt to change  .0019  .0317  .0028

**Notation**
* Training Department
** Training Function
*** Training Manager

59 of the 69 training system effectiveness criteria were highly correlated with the formalisation of the training function. The training manager's characteristics, to a lesser degree, showed significant relationships with 42 of the training systems effectiveness criteria.

This seems to suggest that formalisation has a strong correlation with the training system's effectiveness criteria. This, in turn, suggests that formalisation of the training department, the training function and the position of the training manager may be related to perceptions of effectiveness of the training system in an organisation.

The findings also suggest that, of the three formalisation factors considered, the formalisation of the training department is perceived to have a stronger relationship to measurement of the training system's effectiveness than the other two factors. The position of training manager is perceived as the least important of the three formalisation factors.
It should also be noted that the formalisation of the training department may have different relationships to perceptions of the training systems effectiveness when compared with either the training function or the training manager. For example Q2.6.3, a company-wide meeting to determine training needs, is perceived to be of significance in organisations with training departments and organisations where training is a major function. However the position of training manager is not seen as an important factor in determining company-wide meetings to formulate training needs. Likewise Q2.11.1, training staff performance, and Q2.11.2, quality of training programs, are not seen to be of importance to the formalisation of the training manager's position but does show a significant relationship with the formalisation of the training department and the importance of the training function.

The study also shows that formalisation may have some relationship with the environmental conditions as measured by Q3.1, overall organisational effectiveness and Q3.4 state of organisation's environment. The perceived importance of the training function in organisations seems to have some relationship with overall organisational effectiveness (see Table 7.2). 72 per cent of the respondents who stated that training is an important function in their organisation have rated above average on overall organisational effectiveness, while only 49.2 per cent of the respondents who believe that training is an important function in their organisation have stated their perceptions of the overall training system effectiveness as being above average.

Table 7.2 Relationship of training function to overall organisational effectiveness

<table>
<thead>
<tr>
<th>Q3.1.1&gt;</th>
<th>Count</th>
<th>Low</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>High</th>
<th>5</th>
<th>Row Total</th>
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<tbody>
<tr>
<td>Q1.1.7</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63</td>
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<tr>
<td></td>
<td></td>
<td>4</td>
<td>13</td>
<td>39</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.3</td>
<td>20.6</td>
<td>61.9</td>
<td>11.1</td>
<td></td>
<td></td>
<td></td>
<td>52.5</td>
</tr>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td>57</td>
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<td></td>
<td></td>
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<td>6</td>
<td>22</td>
<td>23</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8</td>
<td>10.5</td>
<td>38.6</td>
<td>40.4</td>
<td></td>
<td></td>
<td></td>
<td>47.5</td>
</tr>
<tr>
<td>Column Total</td>
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<td>10</td>
<td>35</td>
<td>62</td>
<td>12</td>
<td>120</td>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
<td>8.3</td>
<td>29.2</td>
<td>51.7</td>
<td>10.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td>100.0</td>
</tr>
</tbody>
</table>

P = .0108
It is also of interest to note, as indicated in Table 7.3, that of the respondents who stated that their organisations have formalised the training department, 71.3 per cent believe that their organisations operate in a dynamic environment. In organisations where there is no training department only 52.4 per cent perceive that their organisation's operation is in a dynamic environment.

Table 7.3 Relationship of training department to the state of the organisations environment

<table>
<thead>
<tr>
<th>Q3.4&gt;</th>
<th>Count Static</th>
<th>Static Pct</th>
<th>Row 1</th>
<th>Row 2</th>
<th>Row 3</th>
<th>Row 4</th>
<th>Row 5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>12</td>
<td>10</td>
<td>28</td>
<td>29</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>15.0</td>
<td>12.5</td>
<td>35.0</td>
<td>36.3</td>
<td>65.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>8</td>
<td>12</td>
<td>15</td>
<td>7</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19.0</td>
<td>28.6</td>
<td>35.7</td>
<td>16.7</td>
<td>34.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column Total</td>
<td></td>
<td>20</td>
<td>22</td>
<td>43</td>
<td>36</td>
<td>122</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.8</td>
<td>16.4</td>
<td>18.0</td>
<td>35.2</td>
<td>29.5</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P = .0253

All three factors of formalisation are found to be correlated to the overall training system effectiveness measure. The formalisation of the training department and the training function are highly significant (P = .0000) while the formalisation of the training manager position is somewhat weaker in association (P = .0329). This seems to reflect the correlation measures with the training systems effectiveness criteria discussed earlier.

The rest of this chapter will be devoted to a discussion of the formalisation of the training system, controlling for the influence of size and industry type in terms of some of the training systems effectiveness criteria. The purpose of this is to establish that, though formalisation seems to have a strong and significant relationship with training systems effectiveness criteria, size and industry type it may be an intervening moderator.

The object of this chapter is not to explain the relationship of the formalisation factors to all the training system effectiveness
criteria, but to only some selected ones, to explain the nature of the intervening relationship of size and industry type to organisational effectiveness.

For this purpose the following four training systems effectiveness criteria have been chosen to explain the intervening relationship of the size of the organisation and the type of industry in which it is located in the study of training systems effectiveness.

Q2.1.1 Written top management policy defining training objectives
Q2.1.2 Written training department policy
Q2.2.2 Development of training programs associated with new technology
Q2.2.3 Evaluation feedback of training courses.

7.4 Training policies and objectives

The respondents perceived that the existence of training policies and the involvement of line management in the development of training policy, were associated with the formalisation of the training system measured by the three formalisation components: the existence of the training department, the position of training manager and the importance of the training function in organisations. Formalisation of the training department ($r = -0.41$), and the formalisation of the training function ($r = -0.48$) show strong associations with the training system effectiveness criterion Q2.1.1, the existence of a written top management policy defining company wide training missions and objectives. Formalisation of the position of the training manager shows a weaker but still highly significant association ($r = -0.24$, $p < 0.0016$) with written top management policy defining company wide training missions and objectives. This supports the findings of studies referred to, and in particular the work of Child (1972) and Pugh et al (1969), where policies and rules have been referred to as structuring variables of the formalisation components in organisations.
However the findings have to be qualified in the context of other intervening variables, that may have an indirect influence on formalisation variables. In the current study, size was found to have an influence on the perceptions of formalisation by the respondents. When the independent variable, the existence of a training department, is correlated with the dependent variable, the existence of a top management policy defining company wide training missions and objectives, and controlled for size, the results indicate that organisations of a certain size seem to have better correlations with the dependent variables than others (see table 7.4).

Table 7.4 Relationship between training department and top management training policy controlling for size

<table>
<thead>
<tr>
<th>Size</th>
<th>r</th>
<th>r²</th>
<th>p*</th>
<th>X²</th>
<th>df</th>
<th>p**</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-100</td>
<td>.90</td>
<td>.81</td>
<td>0.0477</td>
<td>4</td>
<td>2</td>
<td>NS</td>
<td>4</td>
</tr>
<tr>
<td>100-200</td>
<td>-.85</td>
<td>.74</td>
<td>0.0032</td>
<td>8</td>
<td>2</td>
<td>0.0183</td>
<td>8</td>
</tr>
<tr>
<td>200-500</td>
<td>-.46</td>
<td>.22</td>
<td>0.0127</td>
<td>7.4</td>
<td>4</td>
<td>NS</td>
<td>23</td>
</tr>
<tr>
<td>500-1000</td>
<td>-.39</td>
<td>.15</td>
<td>0.0421</td>
<td>9.2</td>
<td>4</td>
<td>NS</td>
<td>21</td>
</tr>
<tr>
<td>&gt; 1000</td>
<td>-.35</td>
<td>.12</td>
<td>0.0004</td>
<td>12.2</td>
<td>4</td>
<td>0.0159</td>
<td>87</td>
</tr>
</tbody>
</table>

*exact Pearson's 2 tail probability
**exact 2 tail chi-square probability

In analysing the study, it becomes apparent that the respondents in companies with 50 to 100 people indicated a high and positive correlation in their response to written top management training policy and the formalisation component, the existence of a training department. In other words, the respondents in the 50 to 100 employee companies indicated that, with or without the formalisation of the training department, they believe that there is little evidence of the existence of a written top management policy defining company-wide training missions and objectives (see Figure 7.5). The statistic $r^2 = .81$ suggests an 81 per cent accuracy in predicting the correlation between the formalisation variable and the dependent variable, controlling for size category 50-100 employees.
Table 7.5 Training department and written training management policy controlling for size 50-100 employees

Q2.1.2> Low 1 2 3 4 High
Q1.10 Yes 1 1 50% 50% n = 4
NO 2 100%

All the other size categories are negatively correlated (p < 0.05) but this is only significant at the Chi-square level in two of the categories, those of 100-200 employees and over 1000 employees. This suggests that the respondents in organisations with training departments believe that there is evidence of a written top management policy defining training missions and objectives, compared to respondents in organisations without training departments, who perceive that there is less evidence of the existence of top management training policies and objectives (see Table 7.6).

Table 7.6 Formalisation of training department and written training management policy controlling for size

<table>
<thead>
<tr>
<th>Size categories</th>
<th>Below satisfaction %</th>
<th>Above satisfaction %</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-100 employees n = 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=2)</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>No training department (n=2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-200 employees n = 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=3)</td>
<td>33.3</td>
<td>66.7</td>
</tr>
<tr>
<td>No training department (n=5)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>200-500 employees n = 23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=9)</td>
<td>22.2</td>
<td>66.7</td>
</tr>
<tr>
<td>No training department (n=14)</td>
<td>64.3</td>
<td>7.1</td>
</tr>
<tr>
<td>500 - 1000 employees n = 21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=14)</td>
<td>35.7</td>
<td>35.7</td>
</tr>
<tr>
<td>No training department (n=7)</td>
<td>71.4</td>
<td>28.6</td>
</tr>
<tr>
<td>&gt; 1000 employees n = 87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=71)</td>
<td>29.6</td>
<td>57.7</td>
</tr>
<tr>
<td>No training department (n=16)</td>
<td>62.6</td>
<td>18.8</td>
</tr>
</tbody>
</table>
In the category of organisations with 500-1000 employees the table shows that the response to the question of the existence of the training department is evenly balanced and there is little evidence of a relationship between the variables. However in the same category where there is no training department the response is less favourable.

A similar control for size was applied to the study of the relationship between the importance of the training function and the dependent variable, written top management policy defining company wide training missions and objectives. The results are shown in Table 7.7.

<table>
<thead>
<tr>
<th>Size</th>
<th>r</th>
<th>$r^2$</th>
<th>p*</th>
<th>$x^2$</th>
<th>df</th>
<th>p**</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-100</td>
<td>.51</td>
<td>26</td>
<td>NS</td>
<td>4</td>
<td>3</td>
<td>NS</td>
<td>4</td>
</tr>
<tr>
<td>100-200</td>
<td>.21</td>
<td>4</td>
<td>NS</td>
<td>0.47</td>
<td>2</td>
<td>NS</td>
<td>7</td>
</tr>
<tr>
<td>200-500</td>
<td>-.20</td>
<td>4</td>
<td>NS</td>
<td>2.51</td>
<td>4</td>
<td>NS</td>
<td>23</td>
</tr>
<tr>
<td>500-1000</td>
<td>-.32</td>
<td>10</td>
<td>NS</td>
<td>2.92</td>
<td>4</td>
<td>NS</td>
<td>21</td>
</tr>
<tr>
<td>&gt; 1000</td>
<td>-.47</td>
<td>22</td>
<td>0.0001</td>
<td>23.46</td>
<td>4</td>
<td>0.0001</td>
<td>84</td>
</tr>
</tbody>
</table>

* exact Pearson's 2 tail probability  
** exact 2 tail chi square probability  

The table shows a negative correlation, emphasising that the respondents perceive that the importance of the training function is correlated to the existence of a top management policy defining training missions and objectives. Respondents in organisations that emphasise the training function less, perceive that there is little evidence of the existence of top management training policies and objectives.

Size again is seen as the intervening variable influencing the responses of employees in the organisation (see Table 7.8). Organisations employing more than 200 people, where training is considered a major function, have been rated highly in terms of the
existence of top management training policies and objectives. The opposite is true in organisations where training is not considered to be a major function.

Table 7.8 Formalisation of training function and written training management policy, controlling for size

<table>
<thead>
<tr>
<th>Size categories</th>
<th>Below satisfaction</th>
<th>Satisfaction</th>
<th>Above satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>50-100 employees n = 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=2)</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>No training department (n=2)</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>100-200 employees n = 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=1)</td>
<td>100</td>
<td>50</td>
<td>16.7</td>
</tr>
<tr>
<td>No training department (n=6)</td>
<td>83.4</td>
<td>16.7</td>
<td></td>
</tr>
<tr>
<td>200-500 employees n = 23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=6)</td>
<td>41.2</td>
<td>66.6</td>
<td>41.1</td>
</tr>
<tr>
<td>No training department (n=17)</td>
<td>15.7</td>
<td>17.6</td>
<td></td>
</tr>
<tr>
<td>500 - 1000 employees n = 21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=9)</td>
<td>22.2</td>
<td>66.6</td>
<td></td>
</tr>
<tr>
<td>No training department (n=12)</td>
<td>50.0</td>
<td>16.7</td>
<td>33.4</td>
</tr>
<tr>
<td>&gt; 1000 employees n = 84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training department (n=57)</td>
<td>12.3</td>
<td>75.4</td>
<td></td>
</tr>
<tr>
<td>No training department (n=27)</td>
<td>44.4</td>
<td>14.8</td>
<td>40.7</td>
</tr>
</tbody>
</table>

7.5 Technology

Studies have shown that there is a strong relationship between technology and formalisation (Gerwin: 1979; Hage and Aiken: 1967). Most of the studies of technology describe the processes that organisations use to transform inputs to outputs, and research in this area has largely been restricted to the degree of routininess of activities (Woodward: 1965; Perrow: 1967; Thompson: 1967). Gerwin (1981) reports that studies in technology-formalisation relationships consistently show routininess to be associated with the presence of 'rule manuals, job descriptions, and other formalised documentation' (Robbins: 1986, p.341).
Formalisation is also associated with the technology-centralisation relationship (Robbins: 1986). Robbins believes that formalisation has a moderating effect on the technology-centralisation relationship. This is also supported in other studies (Hage and Aiken: 1967). The technology-centralisation relationship is founded on the basis that decision making in routine technologies will be associated with centralised structures, while non-routine technologies will be associated with decentralised organisational structures (Van De Ven et al: 1976). Robbins predicts that routine technology will lead to centralisation, only if formalisation is low (1986: p.341). His prediction follows from his rationale that 'formal regulations and centralised decision making are both control mechanisms and management can substitute them for each other' (p.341).

Table 7.9 Relationship of formalisation variables with development of training programs associated with technology and controlling for size

<table>
<thead>
<tr>
<th>Training program</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p**</th>
<th>( r^2 )</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training department controlling for size &gt; 1000</td>
<td>8.76</td>
<td>4</td>
<td>NS</td>
<td>.09</td>
<td>0.0024</td>
</tr>
<tr>
<td>Training manager controlling for size &gt; 1000</td>
<td>10.10</td>
<td>4</td>
<td>0.04</td>
<td>-.10</td>
<td>0.0014</td>
</tr>
<tr>
<td>Training function controlling for size</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-200</td>
<td>8</td>
<td>4</td>
<td>0.04</td>
<td>.42</td>
<td>0.04</td>
</tr>
<tr>
<td>200-500</td>
<td>6.6</td>
<td>4</td>
<td>NS</td>
<td>.22</td>
<td>0.0103</td>
</tr>
<tr>
<td>&gt; 1000</td>
<td>13.59</td>
<td>4</td>
<td>NS</td>
<td>.07</td>
<td>0.0082</td>
</tr>
</tbody>
</table>

* Pearson's exact 2 tail significance
** Exact 2 tail chi square significance

The above table 7.9 indicates that the development of training programs associated with new technology is more obvious in companies with more than 1000 employees. Size seems to be a determining factor in the relationship.
In Table 7.10 in the retailing, computers and manufacturing industries there seems to be a high correlation between the importance of technology and their training programs. Responses from all three industries have indicated high correlations between the importance of technology and the formalisation of the training function. Retail and computer industry respondents have also indicated a high correlation between the formalisation of the training department and the development of training programs associated with new technology. The importance of the training manager position, and its relationship with the implementation of training programs based on new technology, was only found to be significant in the retail industry. Fisher’s exact test was applied to the computer industry since the total sample size and the expected values are small.

Table 7.10 Relationship of the formalisation variables with the development of training programs associated with technology, controlling for industry category.

<table>
<thead>
<tr>
<th>Training department controlling for industry category:</th>
<th>( x^2 )</th>
<th>df</th>
<th>p**</th>
<th>( r^2 )</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>retail</td>
<td>8</td>
<td>4</td>
<td>NS</td>
<td>.81</td>
<td>0.0014</td>
</tr>
<tr>
<td>computer</td>
<td>Fisher’s Exact Test</td>
<td>.100</td>
<td>0.0001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training manager controlling for industry category:</th>
<th>( x^2 )</th>
<th>df</th>
<th>p**</th>
<th>( r^2 )</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>retail</td>
<td>8</td>
<td>4</td>
<td>NS</td>
<td>.76</td>
<td>0.0024</td>
</tr>
</tbody>
</table>

Training function controlling for industry category:

<table>
<thead>
<tr>
<th>( x^2 )</th>
<th>df</th>
<th>p**</th>
<th>( r^2 )</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>retail</td>
<td>8</td>
<td>4</td>
<td>NS</td>
<td>.79</td>
</tr>
<tr>
<td>computer</td>
<td>Fisher’s Exact Test</td>
<td>.100</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>manufacturing</td>
<td>4.4</td>
<td>4</td>
<td>NS</td>
<td>13</td>
</tr>
</tbody>
</table>

* Pearson’s exact 2 tail significance
** Exact 2 tail chi square significance
7.6 Evaluation feedback

Szilagyi (1983, p.360) defines performance evaluation 'as the process by which an organisation obtains feedback about the effectiveness of its employees'. Evaluation feedback is seen as an important process of the training system in generating information about the performance of trainees and the system generally. It also encourages the auditing of performance standards and control.

The communication of performance evaluation results is considered as the most important aspect of performance evaluation (Daniel and Esser: 1980). Feedback from performance evaluation is important if employees are expected to change their attitude to work and improve their work performance.

In many organisations this important process is neglected, for various reasons. The following are some of the reasons for the lack of emphasis on performance evaluation feedback in organisations:

1. Negative or corrective feedback is often unpleasant and if not handled properly can be counter-productive (De Chams: 1968; Deci: 1971).
2. The trainers are not sufficiently skilled to provide meaningful feedback (Daniel and Esser: 1980).
3. The nature of the feedback process is complex and organisations know very little about it (Mahoney: 1979).

The problems stated by the authorities are organisational problems and can be overcome by proper corrective measures. Feedback on performance appraisal in training situations is too important a process to be neglected by shy or unskilled training officers, or by the lack of understanding of the feedback process within the training system. If employees are expected to maintain and improve their performance effectiveness, evaluation feedback is crucial to the overall effectiveness of the organisation and the training system.
Rummel (1977) suggests that for the analysis of organisation performance problems and specifically for correcting them, there is a need for some organisational entity. His reference is to the formalisation of the training function. He says that 'the training function should become the foundation for the performance-engineering department' (p.53).

Table 7.11 Relationship of the formalisation variables with training feedback to line management of training courses and individual training, controlling for industry type

<table>
<thead>
<tr>
<th>Training department controlling for industry category:</th>
<th>( x^2 )</th>
<th>df</th>
<th>p**</th>
<th>( r^2 )</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>manufacturing</td>
<td>7.64</td>
<td>4</td>
<td>NS</td>
<td>.22</td>
<td>.0041</td>
</tr>
<tr>
<td>retail</td>
<td>5.16</td>
<td>3</td>
<td>NS</td>
<td>.55</td>
<td>.0183</td>
</tr>
<tr>
<td>professional</td>
<td>7.00</td>
<td>4</td>
<td>NS</td>
<td>.77</td>
<td>.0041</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training manager controlling for industry category:</th>
<th>( x^2 )</th>
<th>df</th>
<th>p**</th>
<th>( r^2 )</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>exploration</td>
<td>6.0</td>
<td>3</td>
<td>NS</td>
<td>.31</td>
<td>.0071</td>
</tr>
<tr>
<td>manufacturing</td>
<td>5.85</td>
<td>4</td>
<td>NS</td>
<td>.13</td>
<td>.0263</td>
</tr>
<tr>
<td>retail</td>
<td>4.44</td>
<td>3</td>
<td>NS</td>
<td>.50</td>
<td>.0249</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training function controlling for industry category:</th>
<th>( x^2 )</th>
<th>df</th>
<th>p**</th>
<th>( r^2 )</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>exploration</td>
<td>6.0</td>
<td>3</td>
<td>NS</td>
<td>.46</td>
<td>.0071</td>
</tr>
<tr>
<td>manufacturing</td>
<td>8.58</td>
<td>4</td>
<td>NS</td>
<td>.22</td>
<td>.0054</td>
</tr>
<tr>
<td>retail</td>
<td>5.16</td>
<td>3</td>
<td>NS</td>
<td>.55</td>
<td>.0183</td>
</tr>
</tbody>
</table>

* Pearson's exact 2 tail significance  
** Exact 2 tail chi square significance

In studying the effect of formalisation on training feedback, the above Table 7.11 indicates that there are strong correlations between a number of industry categories and formalisation variables. Feedback on training programs is more important in the manufacturing and retail industries, where training is a significant function with a training manager and a training department. The exploration industry respondents perceive feedback as important and support the importance of the training function and the position of the training manager.
Table 7.12 Relationship of the formalisation variables with training feedback to line management of training courses and individual training, controlling for size

<table>
<thead>
<tr>
<th>Training department controlling for size</th>
<th>x²</th>
<th>df</th>
<th>p**</th>
<th>r²</th>
<th>p*</th>
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</thead>
<tbody>
<tr>
<td>50-100</td>
<td>4</td>
<td>2</td>
<td>NS</td>
<td>.81</td>
<td>.0477</td>
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<tr>
<td>100-200</td>
<td>6.74</td>
<td>4</td>
<td>NS</td>
<td>.62</td>
<td>.0056</td>
</tr>
<tr>
<td>500-1000</td>
<td>13.69</td>
<td>4</td>
<td>.0084</td>
<td>.46</td>
<td>.0004</td>
</tr>
<tr>
<td>&gt; 1000</td>
<td>15.73</td>
<td>4</td>
<td>.0034</td>
<td>.16</td>
<td>.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training manager controlling for size</th>
<th>x²</th>
<th>df</th>
<th>p**</th>
<th>r²</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>500-1000</td>
<td>11.20</td>
<td>4</td>
<td>.0244</td>
<td>.36</td>
<td>.0018</td>
</tr>
<tr>
<td>&gt; 1000</td>
<td>12.96</td>
<td>4</td>
<td>.0115</td>
<td>.03</td>
<td>.0013</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Training function controlling for size</th>
<th>x²</th>
<th>df</th>
<th>p**</th>
<th>r²</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>500-1000</td>
<td>11.20</td>
<td>4</td>
<td>.0244</td>
<td>.36</td>
<td>.0018</td>
</tr>
<tr>
<td>&gt; 1000</td>
<td>12.96</td>
<td>4</td>
<td>.0115</td>
<td>.10</td>
<td>.0013</td>
</tr>
</tbody>
</table>

* Pearson’s exact 2 tail significance
** Exact 2 tail chi square significance

When formalisation is controlled for size, feedback from training courses and individual training is seen as more important in the larger organisations (Table 7.12). Respondents from smaller organisations with a formalised training department also see feedback of training programs to the line management as an important function.

7.7 Summary

Formalisation is the third structural variable examined in this research. Three factors, namely training department, training function and the existence of the position of training manager formed the formalisation component.

All three factors of formalisation were found to have significant influences on the training systems effectiveness criteria. 64 out of the 69 training systems effectiveness criteria were highly correlated with perceptions of the formalisation of the training department. 59
of the 69 variables were highly correlated with the training function and 42 variables were correlated with the position of the training manager.

The present research indicates that formalisation of the training system is negatively associated with perceptions of the training systems effectiveness criteria. This is to be expected, since respondents in organisations with formalised training systems have rated more positively the measures of training systems effectiveness criteria than respondents in organisations where the training system is not formalised.

Formalisation of the training department was correlated with the state of the organisational environment, suggesting that the degree of formalisation of a department may be linked to the state of the organisational environment. Organisations in dynamic environments seem to have more formalised training departments. Likewise, formalisation of the training function may have an association with overall organisation effectiveness.

Intervening variables, like size of organisation and the type of industry the organisation is in, may be related to the formalisation aspects of the training system and indirectly related to training systems effectiveness.
PART 4

FINDINGS

Training System Effectiveness and the Environmental Variables

Chapter 8: Training Systems Effectiveness

Chapter 9: An Exploration of the Relationships Between Perceived Training Systems Effectiveness and the Perceived Environmental Variables
FINDINGS

CHAPTER 8

TRAINING SYSTEM EFFECTIVENESS

8.1 Introduction

Organisations are becoming more complex in the modern day setting. They tend to include a multitude of internal and external relationships, involving a number of sub-units and individuals. Kerr (1973) concludes that the nature of the formal organisation structure is so complex that the patterns of authority, responsibility and power are difficult to define. This is mainly due to the complex nature of the environment in which these organisational units operate.

The purpose of this chapter is to relate the theoretical studies of organisational effectiveness to the findings in the training systems effectiveness construct. As stated earlier, the study of systems effectiveness is futile without reference to all the factors that relate to the effectiveness of training systems. In the current research, reference has already been made to the structural relationship to effectiveness. This was covered in Chapters 5, 6 and 7. In this chapter overall training system effectiveness is related to the training subsystems. The four categories of training subsystems are: the control, the socio-technical, the psycho-social and the external interface subsystems. The training system effectiveness factors that are related to the four categories of the training subsystems are shown in Figure 8.1 at the end of this chapter.
8.2 Organisational effectiveness

The concept of organisational effectiveness is a persistent theme in the study of organisations (Jobson and Schneck: 1982, p.25). The study of effectiveness is a basic construct in all organisations and yet there is little evidence of relationships between organisational characteristics and effectiveness (Hannan and Freeman: 1977, p.106).

Researchers in the study of organisational effectiveness have adopted different perspectives regarding criteria of effectiveness. The following are some of the perspectives as noted by various researchers. Effectiveness:
- is an enigma (Cameron: 1981b)
- is an important but problem topic (Hirobaia: 1978)
- is an untidy construct (Campbell: 1977)
- is a topic with little convergence between measurement criteria (Molnar and Rogers: 1976)
- has conceptual relevance rather than empirical relevance and as such is not researchable (Hannan and Freeman: 1977)

Cameron (1978), on the other hand, claims to have identified one hundred and thirty different effectiveness criteria.

The central purpose of organisational evaluation is the evaluation of effectiveness (Mackay: 1984, p.3). Though the concept of effectiveness is central to evaluation, there is little agreement as to the criteria of measurement. Cameron (1978) examined 17 models of effectiveness and found little agreement among the models as to the criteria, and whether the models were absolute or relative in nature.

Yuchtman and Seashore (1967) on the other hand focus on the inputs into the organisation, thereby measuring effectiveness as it relates to the ability of the organisation to interact with its environment to obtain scarce and valued resources.

Other researchers (Argyris: 1964; Beckhard: 1969; Bennis: 1966; Likert: 1967; Schein: 1969) are more concerned with the internal processes of an organisation, and measure effectiveness according to those patterns. A number of researchers have focussed on the ability of the organisation to meet the needs and constraints of critical individuals in the environment in order to measure effectiveness (Barnard: 1938; Connolly et al: 1980; Cyert and March: 1963; Kelley: 1978; Pickle and Friedlander: 1967).

Cameron (1978) notes that though there is a diversity of approaches to the measurement of effectiveness in organisations, all the researchers have started from the assumption that there is a universal set of criteria for organisational studies. She believes that this, in itself, is a shortcoming since research has either focussed on finding the universal set of criteria or has defined the criteria a priori and then applied them to organisational studies. This failure to agree on a universal set of criteria has led to studies about the utility of the organisational effectiveness construct (Campbell: 1977; Hannan and Freeman: 1977; Hrebnjak: 1978; Molnar and Rogers: 1976).

Mackay (1984, p.7) suggests that researchers first need to carefully define what they understand as the basis of organisational effectiveness. A multidimensional approach is indicated as the most appropriate in dealing with the divergence of criteria (Steers: 1975; Mackay: 1984). Cameron and Whetton (1983), though they support this view, are against the use of universal models of effectiveness.

8.2.1 A strategic constituent perspective on organisations

Connolly et al (1980) suggest that merely prescribing effectiveness criteria is not appropriate, whether single or
multidimensional criteria are utilised. The methodology suggested is
to examine effectiveness from the perspective of the organisation's
strategic constituents or sub-units. They say that the criteria of
effectiveness of the strategic constituent must be satisfied if the
organisation is to be effective. Connolly et al. draw a relationship
between subsystems effectiveness and overall organisational
effectiveness.

The study of constituents' effectiveness has been of interest to
other researchers in organisation theory in the past (Barnard: 1938;
Cyert and March: 1963; Katz and Kahn: 1966; Koolely: 1978; Pickle and
Friedlander: 1967). According to this approach, organisation members
must establish a match between the criteria of effectiveness used in
the organisation and the criteria valued by strategic constituents.

Goodman (1979) supports Cameron and Whetton's view that there is
no universal model of effectiveness, and that models of effectiveness
will be different in different types of organisations. He goes
further to say that appropriate models may even differ among
organisational subunits. This suggests that measures of success in an
organisation should not be made universal under one effectiveness
domain, but may be influenced by different structural characteristics
within an organisation and should be measured as such. Penning (1975,
p.403) agrees and adds that organisations and sub-units may be
effective according to some criteria and ineffective according to
others. Perrow (1961) notes that, for example, in organisations where
technology is routine, the organisations may be effective in making
profits, though job satisfaction and employee morale may be low.

In attempting to develop a set of criteria for exploring the
dimensions that relate to the effectiveness of training systems, it
was found necessary to consider the variables that have been
identified by theorists of organisational effectiveness studies.
Organisational analysts have broken systems down into a multitude of
characteristics using various classifications. The task of
successfully resolving this plethora of characteristics is a
difficult one - especially in trying to isolate in any definitive way the dichotomy between perceived elements of structure and process. Most researchers (Seiler: 1967; Katz and Kahn: 1966; Johnson, Kast and Rosenzweig: 1973; Melcher: 1973; Buckley: 1968; De Greene: 1970; French and Bell: 1973; Leavitt: 1965) have attempted to isolate within their research schemes major variables that influence organisational effectiveness. In this research it is not the aim of the study to pursue the impossible task of creating definitive and predictive variables, but rather to establish the factors that may influence overall training systems effectiveness. The current research also attempts to identify major predictive variables that are related to the perceptions of overall training system effectiveness and to perceived environmental conditions. In so doing, structural factors like industry type, size and formalisation of the training system have been isolated as objective structural variables that may have some relationship to perceptions of training systems effectiveness.

In the following few paragraphs, some of the more important theorists who have laid the foundations for ways of measuring effectiveness are considered, as their findings and classification of the major dependent variables are used in the framework of this research.

Seiler (1967) has developed a model based on systems concepts for the diagnostic analysis of organisational functioning. He identifies four major variables in his framework. These are human, technological, organisational and social inputs to the organisational system. Human inputs are the personnel of the system and the unique personal qualities they bring to the system. Technological inputs include the nature of the technical tasks executed within the system and the constraints these technical dimensions impose on the system. Organisational inputs are the administrative and procedural forms of the system. Social inputs are the particular social patterns, values and norms developed by the personnel of the system within the framework established by the technological and organisational forms of the system. By resolving the four main variables of Seiler's model
into the bipartite division between structure and process one can view technological and organisational variables as structural elements and the human and social variables as processual elements.

De Greene (1970) differentiates between three systems elements. First are determinants, which are usually outside the system but which determine its form, nature and limits. They include mission or goal definitions, performance requirements, inputs and constraints and are essentially control-oriented. Second are components which are internal to the system and include subsystems consisting of men, mechanisms and facilities. They are essentially structure-oriented. Third are integrators which include task operations, communications, organisation and decision structures. They are essentially coordination oriented. As can be seen, De Greene does not acknowledge the human-social process elements of the system in a definitive way. Process elements as such would seem to best be included under the integrator findings.

French and Bell (1973) have developed an organisational systems model which is an elaboration of two other models – Seiler’s model as described above and that of Leavitt (1965). Leavitt sees organisations as complex systems comprised of four major interactive variables; task, structural, technological and human. French and Bell’s model has six components:

(a) The technological subsystem – which consists of tools, machines, procedures, methods and technical knowledge. In essence, the artifacts and knowledge necessary to produce the end product that has been defined by the goal subsystem.

(b) The task subsystem – which consists of the subdivisions of the work necessary to produce the end product.

(c) The structural subsystem – which is strongly influenced by the nature of the technology and task divisions such as departments and project teams etc. It also includes work flow, work rules, authority and sanctioning patterns, procedures and practices relative to communication, planning, coordination, control and decision-making. Obviously these first three subsystems have a highly interdependent relationship.
(d) Human-social subsystem - which consists of four elements, the skills and abilities of members of the system, the leadership philosophy and style, a formal element incorporating staffing, remuneration, appraisal, bargaining and justice and an informal element incorporating social actions of a non-programmed nature such as coalition and competition, group norms, feelings, values and status.

(e) The external interface subsystem - which consists of data-sensing, resource procurement, including recruiting and selection, output placement or output resource exchange, environment influencing and responses to external demands.

(f) The goal subsystem - which consists of one or more superordinate goals or objectives and stemming from this a hierarchy of operationally defined subordinate objectives (French and Bell: 1973, pp.77-79).

A review of systems models of organisations is a task which could be continued for some considerable period of time. In the survey done by Cameron and Whetton (1983) the findings show that there have been eight major books in the last two decades which form the main source of literature for this research. They are works by Cameron and Whetton (1983); Ghorpade (1970); Goodman and Penning (1977); Mott (1972); Price (1968); Spray (1976); Steers (1977) and Zammuto (1982). These books are further supported by several hundred articles in major journals (Cameron and Whetton: 1983, p.1).

The systems approach developed in this research is derived from general models of organisational systems as presented above, but modified for present purposes. Most of the works mentioned are aimed at describing a whole organisation. The present study describes and analyses a system within an organisation. Methodologically, this is not an entirely valid adaptation, but it is made necessary because of the dearth of material relating models of total organisations, to the structure and functioning of smaller units within the total organisation. It is also a practice which can claim support on the basis of the relatively autonomous structure of many organisational sub-units, which makes them structurally close to being self-contained systems.
This is deemed to be so with the training system, especially where it is functioning in a consultative role with respect to branch and divisional groups within a large corporation. French and Bell (1973) note:

What is a 'system' or a 'subsystem' is purely relative and depends on what level of abstraction or level of complexity at which one is focusing his analysis. (p.77)

Some modifications in the research were aimed at compensating for this problem, in particular the emphasis placed on the external interface between the subsystem under examination and its wider organisational system, giving acknowledgement to the increased dependency and restrictive constraints that such a relationship implies.

8.3 Training Systems Effectiveness

It is appropriate to consider the training system in an organisation as a strategic constituent, since training systems, like other systems in an organisation, contribute to the overall effectiveness of the organisation. Mahajan (1986) defines the strategic constituency approach to the evaluation of performance in an organisation as the extent to which all the organisation's constituents are minimally satisfied. Strategic constituents in this sense refers to any group of individuals who have some stake in the organisation, such as the members of the training group in an organisation.

The measure of training effectiveness in an organisation is a function of many predisposing conditions (Peterson: 1977, p.153). The following are some of the conditions identified by Peterson:

- training needs
- qualified and competent training staff
- performance evaluation mechanisms
- effective management of the training function.
In this part of the research the various conditions are specified in the training system effectiveness criteria and are correlated to Q3.2 the overall training system effectiveness measure. As observed earlier, a multi-dimensional approach to examining the effectiveness of training systems is employed.

In Table 8.1, all the sixty nine training system effectiveness criteria are ranked in their order of importance to the overall training system effectiveness measure (Q3.2) according to Pearson's coefficient (r). Of the sixty nine variables, forty are significant to the study and have a Pearson correlation significance of \( p < .05 \) and \( r > .28 \).

In seeking to analyse the relationship of the dependent variables (training system effectiveness criteria) to the independent variable (overall training system effectiveness criterion (see Q3.2 in Appendix B)), the dependent variables have been grouped into four categories. This grouping is similar to that described by French and Bell (1973). The four categories are:

The control subsystem
The socio-technical subsystem
The psycho-social subsystem
The external interface subsystem.

8.3.1 The control subsystem

In this subsystem the control variables are goal-oriented and they determine the form, nature and limits of the training system.
Table 8.1  *Priority listing of training systems effectiveness criteria in the measurement of overall training systems effectiveness (Q3.2)*

<table>
<thead>
<tr>
<th>Training systems effectiveness criteria</th>
<th>Pearson’s r</th>
<th>Exact* probability (p)</th>
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<tr>
<td>Q2.11.1 Training staff performance</td>
<td>.61</td>
<td>.000</td>
</tr>
<tr>
<td>Q2.11.2 Quality of training programs</td>
<td>.57</td>
<td>.000</td>
</tr>
<tr>
<td>Q2.19.3 Staff inputs to planning</td>
<td>.56</td>
<td>.000</td>
</tr>
<tr>
<td>Q2.21.1 Department and staff reputation</td>
<td>.53</td>
<td>.000</td>
</tr>
<tr>
<td>Q2.17.4 Cohesiveness in decision making</td>
<td>.53</td>
<td>.000</td>
</tr>
<tr>
<td>Q2.21.3 Training importance in the organisation</td>
<td>.50</td>
<td>.000</td>
</tr>
<tr>
<td>Q2.7.1 Company-wide training needs analysis</td>
<td>.47</td>
<td>.000</td>
</tr>
<tr>
<td>Q2.11.3 Productivity of training staff</td>
<td>.46</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.1.2 Written training department policy</td>
<td>.46</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.19.2 Equity of training managers (TM) allocation of resources</td>
<td>.45</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.22.1 Anticipating training issues and needs</td>
<td>.45</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.8.1 Reactive planning</td>
<td>.45</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.14.1 Formal system for monitoring performance</td>
<td>.43</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.7.2 Regular survey of needs for specialised training</td>
<td>.43</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.1.1 Written top management policy</td>
<td>.42</td>
<td>.002</td>
</tr>
</tbody>
</table>
Q2.6.4
Competent evaluation of training performance

Q2.16.1
Qualification of training staff

Q2.14.2
Assessment of performance in training programs

Q2.15.2
Formality in application of rewards and sanctions

Q2.22.2
Training staff are good at adapting to changes

Q2.8.2
Proactive planning

Q2.16.2
Training staff have appropriate experience

Q2.4.3
Communication between training department (TD) and external agencies

Q2.2.2
Programs associated with new technology

Q2.12.5
Problem-solving orientation of TM

Q2.17.2
Problem-solving orientation of training staff (T staff)

Q2.17.1
Cooperation between training staff

Q2.3.2
Long-range planning

Q2.21.4
Competency of T staff

Q2.4.1
Communication between T staff and line management

Q2.4.4
Existence of database

Q2.15.1
Individual and group motivation
Q2.6.1  
Training task analysis based on educational input  

Q2.13.1  
Established standards of professional competence  

Q2.21.2  
Interests of T staff represented at top management  

Q2.3.3  
Integration of company planning units  

Q2.18.1  
Openness and flexibility of communication among T staff  

Q2.3.1  
Training resource allocation and utilisation  

Q2.20.2  
Mechanisms for conflict resolution  

Q2.14.3  
Feedback of training performance evaluation  

Q2.5.2  
Appropriate staff to conduct training  

Q2.6.2  
Competent preparation of training programs  

Q2.10.2  
Conflict resolution by means of confrontation of issues and joint consultation  

Q2.6.3  
Frequent meetings among company staff to decide training needs  

Q2.19.4  
Training in group efficiency  

Q2.5.1  
Adequate finance for training purposes  

Q2.17.3  
Conceptual flexibility of training staff  

Q2.9.2  
Channels of coordination

<p>| | |</p>
<table>
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<td>.033</td>
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<td>.037</td>
</tr>
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<td>.26</td>
<td>.055 (N.S)</td>
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<tr>
<td>.26</td>
<td>.057 (N.S)</td>
</tr>
<tr>
<td>.26</td>
<td>.058 (N.S)</td>
</tr>
<tr>
<td>.26</td>
<td>.063 (N.S)</td>
</tr>
<tr>
<td>.25</td>
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<td>Q2.12.3</td>
<td>Communication skills of TM</td>
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<tr>
<td>Q2.2.3</td>
<td>Line feedback on training evaluation</td>
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<td>Q2.13.2</td>
<td>Established standards are upheld by TM</td>
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<td>Worker participation encouraged by TM</td>
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<td>Training staff relationship</td>
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<td>Q2.12.6</td>
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<td>Q2.9.1</td>
<td>Integration of TD with other areas</td>
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<tr>
<td>Q2.10.1</td>
<td>Mechanism for monitoring potential conflict</td>
</tr>
<tr>
<td>Q2.12.2</td>
<td>TM encourages delegation of decision making</td>
</tr>
<tr>
<td>Q2.12.4</td>
<td>TM's personality</td>
</tr>
<tr>
<td>Q2.4.2</td>
<td>Communication between TD and personnel department</td>
</tr>
</tbody>
</table>
Q2.5.4
Access to appropriate external training .02 .904(N.S)

Q2.2.1
Employee request for specific training .01 .920(N.S)

Q2.5.3
Adequate specialist training material .07 .615(N.S)

Q2.1.3
Line management involvement in development of training material .08 .577(N.S)

* exact Pearson's two-tail significance
(N.S) - not significant

8.3.1.1 Training policy

The control and the directional aspects of these variables are typically expressed through management and training department policies, which may or may not be written. Written policies are formalised aspects of training control and directives. Training policies also govern the overall mission of the training function within the organisation and guide the training department in the procurement of resources. The control function also imposes limits on the activities of the training system and its staff. Training policies derive their importance when they are implicitly acknowledged by top management as defining company wide training missions and objectives (Q2.1.2: r = .46, p = .001). These policies allow a number of controls to be imposed on the activities of the training department. Specifically these include:

(a) A statement of the extent and scope of the organisation's commitment to training, by providing rules and procedures which direct the standard and nature of training within the organisation.

(b) A statement defining more or less explicitly the contribution that the top management want the training department to make to the achievement of organisational objectives.

(c) Provision for guidelines directing the planning and implementing of training.
(d) Guidelines that allow the allocation of training resources on a priority basis.

(e) Guidelines that document the opportunity available to organisation members for training.

Table 8.2 shows the relationship of training policy to the dependent variable as perceived by the respondents. The mean (X) for the dependent variable (Q3.2) is 3.04. Q2.1.1 and Q2.1.2 are rated above the dependent variable, indicating that the respondents in the survey perceive that there is a written top management policy (X = 3.13) and a written training department policy (X = 3.52), more so than their perception of the overall effectiveness of the training system (X = 3.04).

| Q2.1.1 | A written top management policy defining company wide training missions and objectives | 3.13 | 1.56 |
| Q2.1.2 | A written training department policy defining specific training missions and objectives | 3.52 | 1.40 |

Table 8.2 Training policy and training system effectiveness

8.3.1.2 Strategic and operational planning

Deriving from the policy level are two further levels of activity. These are two categories of planning behaviour - strategic and operating planning. These two levels of planning encompass the operational details of the general philosophies established in the policy statement. Policies usually contain a highly idealised or generalised statement of the form training activities should assume within the organisation. It is at the planning level that these ideals are integrated into the functional reality of the organisation. Strategic planning or long-range planning is an activity of top management and this is seen as being significant and
highly correlated with overall training system effectiveness (Q2.3.2: \( r = .37, p = .007 \)). Strategic planning is the major channel for determining the resources (capital, staff, facilities) available for training needs and allocating these resources on a priority basis.

In addition to being shaped and limited by policies, strategic planning for training is often based on an initial investigation that specifies the details of training, both existing and required, across the organisation – what could be called a 'macrolevel' training needs analysis, or training 'audit'.

A company wide analysis of training needs was supported by the survey respondents (Q2.7.1: \( r = .47, p = .000 \)) but they did not favour frequent meetings among company staff to decide training needs (Q2.6.3: \( r = .26, p = .063 \)) as a contributing factor to overall training system effectiveness.

Ideally the company wide training need analysis should be closely related to the manpower planning of the personnel department. This is an ideal situation but rarely does this happen in organisations. Manpower planning is defined as the strategy for the acquisition, utilisation, improvement and preservation of an organisation's human resources (Fiji Training Council: 1983). A comprehensive manpower policy coordinates recruitment, training, retraining, staff appraisal and other related personnel functions, thus enabling a coordinated, timely and appropriate supply of trained staff (Ross: 1982). The survey respondents supported establishment of clear priorities for training resource allocation and utilisation as a measure of training systems effectiveness (Q2.3.1: \( r = .29, p = .033 \)).

The second level of planning is operational planning which involves either immediate action planning (reactive) or forward planning (proactive). Immediate action planning based on evaluative feedback from previous training programs (Q2.8.1: \( r = .45, p = .001 \)) and forward planning based on the development of new training techniques and company development (Q2.8.2: \( r = .41, p = .002 \)) are perceived to be important in determining training systems effectiveness.
In Table 8.3 the overall perceptions of strategic and operational planning are compared with the perceptions of the overall training system effectiveness measure. Long range planning \((X = 2.72)\), need for company wide training need analysis \((X = 2.62)\), immediate action plan \((X = 2.60)\) and forward planning \((X = 2.55)\) have been rated well below the satisfactory level \((X = 3)\). The mean for the overall training system effectiveness is 3.04. The rating for a clear priority for training resource allocation is only just above the sample mean \((X = 3.09)\). This indicates that the respondents do not believe that much attention is given to planning aspects in the training system.

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2.3.1</td>
<td>3.09</td>
<td>1.33</td>
</tr>
<tr>
<td>Q2.3.2</td>
<td>2.72</td>
<td>1.12</td>
</tr>
<tr>
<td>Q2.7.1</td>
<td>2.62</td>
<td>1.20</td>
</tr>
<tr>
<td>Q2.8.1</td>
<td>2.60</td>
<td>1.17</td>
</tr>
<tr>
<td>Q2.8.2</td>
<td>2.55</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Table 8.3 Strategic and operational planning, and training system effectiveness

The operational planning involves some form of job training analysis and this type of planning integrates closely with the task activities of the next segment of this analysis - the socio-technical variables.
8.3.2 The socio-technical subsystem

This subsystem covers the complete technical aspects of the training system, including the training tasks, the technology employed in executing these tasks and the organisational nature of the training department.

(a) The training tasks – these break down into four major groups:

(i) assessing specific training needs.
(ii) preparing training courses and activities.
(iii) conducting training or organising for training to be undergone.
(iv) evaluation and review of both techniques for training and results from training.

The training task is not only a reactive one (i.e. where there is a response to the need to train for existing jobs) but is, or should be, also a proactive task whereby inventions and innovations within the job situation are synthesised into the training program.

8.3.2.1 Training tasks

Figure 4.1 is an idealised presentation of the development and operation of a training program in schematic form. The schematic model emphasises that the learner is integrated into a real-life situation and that there must be feedback between the actual training situation and the course development, providing a mechanism that oversees the maintenance of relevance (Q2.14.3: r = .28, p = .044). It can also be noted that within the diagram there are a number of feedback loops. The functioning of such channels is essential in ensuring that the training program is integrated into the organisational context within which the training is being conducted and to maintain the relevance, appropriateness and acceptability of the training activities to the trainees and the department within which the trainees are to work. The feedback to the training system should also be based on individual, group and intergroup performance
in training programs ($Q2.14.2: r = .42, p = .002$). The perceived importance of individual and group performance can be a motivating factor for the trainees.

The last task category of the four noted above is that of evaluation and review of training ($Q2.6.4: r = .42, p = .002$). Evaluation is often not attempted because of the legion of difficulties surrounding the task. The difficulty is not, however, so great that the value of evaluation does not exceed it. This is demonstrated by the respondents giving a high rating to the need for competent evaluation of training performance.

The respondents have also supported the need for training task analysis based on educational input ($Q2.6.1: r = .34, p = .014$). The implication of this is that skill and knowledge training should also be based on the educational content of programs as opposed to basic mechanical skills.

These findings are of importance in the planning, implementing and controlling of training tasks within organisations. It should be noted that, though the respondents have perceived the importance of competent evaluation of training performance ($r = .42, p = .002$), they have not seen the significance of competent preparation of training courses ($Q2.6.2: r = .26, p = .057$). This perception could be due to the fact that the level of performance of the training staff is seen as good, ($Q2.11.1: r = .61, p = .000$), that their programs are viewed as of high quality, ($Q2.11.2: r = .57, p = .000$) and their productivity level is seen as high, ($Q2.11.3: r = .46, p = .001$). The mean for the quality of training programs conducted by the training staff is 3.36 (see Figure 8.9).

Figure 8.4 shows the perceived importance of the training task variables in relation to the overall training systems effectiveness criterion ($X = 3.04$). Among the five training task variables only competent preparation of training courses is rated highly by the respondents ($X = 3.42$), (though this does not have a significant correlation to the overall training system effectiveness criterion ($r = .26, p = .057$)).
The population surveyed have responded with pessimism to the analysis of the task based on educational inputs (\(X = 2.68\)), assessment of individual, group and intergroup performance (\(X = 2.94\)), feedback of evaluation in training programs (\(X = 2.87\)) and competent evaluation of training performance (\(X = 2.51\)).

\[
\begin{array}{ll}
\text{Q2.6.1} & X \\
\text{Analysis of the training tasks based on educational input} & 2.68 \\
\text{Q2.6.2} & z \\
\text{Competent preparation of training courses*} & 3.42 \\
\text{Q2.14.2} & X \\
\text{There is assessment of individual, group and intergroup performance in training programs} & 2.94 \\
\text{Q2.14.3} & z \\
\text{There is immediate feedback of the evaluation of training performance} & 2.87 \\
\text{Q2.6.4} & X \\
\text{Competent evaluation of training performance} & 2.51 \\
\end{array}
\]

* not significant \(p > .05\)

Table 8.4 Training tasks and overall training system effectiveness

Among the advantages of evaluation are that it:

- enables an assessment of the cost-benefit functions of an organisation's investment in training.
- provides developmental feedback about training techniques and trainees, thus improving the efficiency of the training process.
- identifies areas for future modification within the training program.
- measures the extent to which training objectives are being met.
- aids in developing methods and data for justification of training expenditure in terms of cost-effective contributions to the organisation.
The research seems to indicate that the respondents in the sample were doubtful that organisations in Australia are involved in the analysis, evaluation and feedback of training tasks. The success of the training programs seems to hinge on the competency of the training staff, in the view of the respondents.

8.3.2.2 Technology

The development of training programs associated with new technology is especially important in an industry operating in a dynamic environment. Training methodologies and the emphasis on skills have to reflect the changes in the environment. Technology is seen in chapter 5 as an important factor in the computer and the insurance and finance industries in assessing training systems effectiveness. The respondents in this study have perceived strongly the importance of developing training programs to reflect technological changes in the environment (Q2.2.2: $r = .40$, $p = .003$). Table 8.5 shows that the respondents have also rated highly the need for their organisations to react to changes in new technologies in their training programs ($X = 3.60$).

<table>
<thead>
<tr>
<th>X</th>
<th>s</th>
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<tr>
<td>3.60</td>
<td>1.18</td>
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</table>

Table 8.5 Technology and training system effectiveness

Training technology includes the logistics elements of the training system and the procedures and techniques of educational technology. To be effective and efficient the training system must have appropriate facilities such as training areas, technical aids to education, information resources (including access to external resources), and any other material aids necessary for the training process. The possible range of training and education technology available to training departments is extensive and ranges from simple lecture instruction through degrees of sophistication, utilising such devices as programmed instruction, closed circuit television,
management games, simulations, to the ultimate extreme in sophistication of CAI (computer aided instruction) and interactive video.

Obviously certain technologies are appropriate for certain training tasks and the task facing the training department is to select the most appropriate method in terms of its cost-effectiveness. Often facilities or training resources are best found in external sources, or training is best conducted in consort with other industry groups. This finds expression in such activities as Group Training Schemes, public sector, tertiary education services and, in the case of sophisticated management training, use of professional associations or consultant services.

Also important in functioning within this area is a knowledge of the psychological structure of learning behaviour, for across a diversity of training tasks there is also a considerable variation in the necessary sophistication of understanding of the psychological features of the learning task. Obviously the features of the training technology employed within any given training system are going to vary and this implies a corresponding range of professional skills on the part of the training personnel.

8.3.2.3 Organisational nature of the training system

The organisational nature of the training system is to a large extent considered as not significant in the measurement of overall training system effectiveness as related below. In analysing the makeup of the training system, two essential subdivisions can be made. The first is the primary structural variables that underlie the operational aspects of the training system and secondly the mediating structural variables that underlie strategic decision making and control in the system.

The primary structural variables are:

1. Appropriate numbers of training staff
2. Competent preparation of training courses
3. Geographical dispersion of the members of the training group
The three variables measured the appropriateness of the staff size (Q2.5.2: $r = .26$, $p = .055$), the manner in which the workflow was ordered (Q2.6.2, $r = .26$, $p = .057$), and the degree of cooperation between members of the training group, concentrated or dispersed geographically (Q2.18.2: $r = .15$, $p = .297$). In all three instances there was no significant correlation with the overall training system effectiveness criterion.

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<td>1.11</td>
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* not significant $p > .05$

Table 8.6 Primary structural variables and training system effectiveness

The general perception of the respondents is that the competent preparation of training programs by the existing training staff (who are qualified and trained) compensates for the lack of appropriate training staff to conduct training in their organisations. In Table 8.6 they have rated highly the competent preparation of the training programs ($X = 3.42$) and clear communication links between geographically separate training staff ($X = 3.32$) while they rated availability of appropriate staff to conduct training poorly ($X = 2.83$).

The moderating structural variables are:

1. The expressed nature of authority.
2. The control variables of the training system.
3. Information variables.
In an organisation where the training department and the position of training manager have been formalised, the expressed nature of training authority is vested in the training manager. When the formalisation of the training manager is correlated with the measure of overall training system effectiveness, there is a weak negative correlation \((r = -0.17, p = .03)\) as shown in Table 8.7.

**Table 8.7 Crosstabulation: Training manager by overall training effectiveness**

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**Chi-Square**

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The implication of this finding is that the existence of the position of training manager does not necessarily increase the perception of overall training system effectiveness in the organisation. In many organisations, the formalisation of strategic units with the appointment of a managerial position leads to perceived importance in formal authority relations (Walsh and Dewar: 1987). This relationship is particularly important as expressed via the formal rights to make decisions and the extent to which decisions are delegated. This does not seem to be the case in this research.

The control variables of the training system are either instructional or individualised structures to:
motivate performance
- establish performance standards for individuals
- establish a formal system for measuring individual performance
- establish a formal system for the differentiation of rewards and sanctions for good and poor individual performance.

The respondents in the sample believe that the following control variables are correlated significantly with the overall training systems effectiveness:

1. There is motivation for individual and group performance in the training system (Q2.15.1: \( r = .34, p = .010 \)),

2. There are established standards of professional competence at both individual and group levels of the training department (Q2.13.1: \( r = .32, p = .018 \)),

3. There exists a formal system for monitoring performance within the training system (Q2.14.1: \( r = .43, p = .001 \)) and;

4. There is a degree of formality in application of rewards and sanctions to the training staff (Q2.15.2: \( r = .41, p = .002 \))

Though control variables are perceived to be highly correlated with the overall training system effectiveness criterion, this is not so with the formalisation of the position of the training manager. Here, the training manager, who is the authority figure responsible for control of the training system, does not have any significant relationship to the overall training effectiveness criterion.

Table 8.8 shows the perceived importance of all the control variables. Only one control variable (Q2.13.1), that there are established standards of professional competence, at both individual and group levels of the training department, is above the mean of the overall training systems effectiveness criterion (\( X = 3.04 \)).
Q2.15.1
Motivation for individual and group performance in the training system 2.98 1.10

Q2.13.1
Established standards of professional competence exists at both individual and group levels of the training department 3.23 1.12

Q2.14.1
Exists a formal system for monitoring performance within the training system 2.72 1.29

Q2.15.2
A degree of formality in application of rewards and sanctions to the training staff 2.51 1.22

Table 8.8 Control variables and the overall training systems effectiveness

Information variables define the formal structure for handling, gathering and storage of data for training purposes. The respondents have perceived positively the existence of a database of regularly updated training information (Q2.4.4: \( r = .35, p = .010 \)) but do not share the same optimism in respect of the importance of access by individual training staff to group information sources (Q2.18.3: \( r = .19, p = .174 \)).

Q2.4.4
Existence of a database of regularly updated training information 2.57 1.31

Q2.18.3
Access by individual training staff to group information sources 3.30 0.97

Table 8.9 Information variables and the overall training system effectiveness

Table 8.9 shows that the respondents in the survey perceive that the existence of a database of regularly updated information is lacking in their organisation (\( X = 2.57 \)) and whilst there is no significant correlation with overall training system effectiveness they believe that the training staff have access to group information
sources (X = 3.30). Therefore training staff access to group information sources is not seen as being as significant to the overall training system effectiveness relationship (r = .35, p = .010) as the existence of a training information database (r = .19, p = .174).

The nature of the socio-technical variables listed above, including as they do the more formal aspects of the training system, naturally blend into and sometimes become hard to differentiate from, the informal social structure of the next component of the study - the psycho-social variables.

8.3.3 The psycho-social subsystem

The principal feature is the nature of the interpersonal dynamics of the system's social environment of which the major determinant is the personality and leadership style of the training manager, or his managerial equivalent in charge of the training function. There is a host of dimensions on which such interpersonal interactions can be assessed including:

1. The representation of the interests of the training department to top management and any other relevant groups, particularly in reference to issues such as job-related problems, resources, image building, professional rights and rule enforcement. There is a strong correlation between the interests of the training staff being effectively represented at top management level and the overall training system effectiveness criterion (Q2.21.2: r = .31, p = .025).

2. The interaction among members of the training department, notably problem-solving and performance-setting and assessing related activities. Cooperation between training staff members in team operations is seen to be significantly related to the measure of overall training system effectiveness (Q2.17.1: r = .37, p = .006).

3. The nature of the standards assumed or established in the training department and the role of the training manager in upholding these standards either tacitly or explicitly. This covers features such as the goal emphasis, including the
placement of responsibility and balancing of individual, group and intergroup goals. It also covers the issues of whether enforcement of standards and rules is flexible or dictated by policies and procedural guides, and the degree of emphasis on technical qualifications and methods.

The study shows that there is no significant relationship between the perception of standards being upheld by the training manager (Q2.13.2: \( r = .20, p = .152 \)) or that there is room for negotiations for the changing of standards if necessary (Q2.13.3: \( r = .21, p = .132 \)) on the one hand, and the independent variable; overall training system effectiveness, on the other.

4. The extent of participation, particularly the degree to which those affected by proposed decisions are consulted and involved in the decision processes.

In the survey the respondents did not think that the training manager's encouragement of worker participation in decision making (Q2.12.1: \( r = .18, p = .202 \)) or a satisfactory relationship among the training staff (Q2.20.1: \( r = .17, p = .214 \)) contributed much to the overall effectiveness of the training system. The research however showed that openness and flexibility of communication among the training staff was seen as contributing positively to the overall training system effectiveness (Q2.18.1: \( r = .29, p = .031 \)).

This seems to suggest that it is not the extent of participation within the training department that is seen to make the training system effective, but how they relate to each other, especially in terms of being open and flexible in their attitudes.

5. The extent to which the training manager directs activities, specifies ends to be achieved and gives the details of how these ends are to be met. Included in this is the amount of checking on progress and domination of the problem solving process.

The leadership style of the training manager is not generally perceived to contribute to the overall effectiveness of the training system (Q2.12.4: \( r = -.05, p = .718 \)). A negative coefficient calculated from the responses does suggest that, though there is no statistical significance, an authoritarian
training manager can have a negative relationship to the effectiveness of the overall training system.

The respondents in the sample do not perceive as important the TM's delegation of decision-making (Q2.12.2: $r = .13$, $p = .350$), whether the TM exhibits communication skills (Q2.12.3: $r = .22$, $p = .116$) and whether the TM supports the social needs of the employees (Q2.12.6: $r = .15$, $p = .300$).

There is however definite support for the TM's emphasis on a problem-solving orientation (Q2.12.5: $r = .40$, $p = .003$) and his perceived equity in the allocation of resources (Q2.19.2: $r = .45$, $p = .001$) as contributing to overall training systems effectiveness.

6. The emphasis on action and problem-solving, especially the support given to the intellectual orientations associated with problem-solving such as reasoning skills, problem perception and conceptual flexibility (this refers to the training staff's intellectual depth of understanding and flexibility in interpreting training needs).

The problem-solving orientation of training staff is given support as a contributing factor to the measure of overall training system effectiveness (Q2.17.2: $r = .39$, $p = .004$), but the conceptual flexibility of individual training staff in relation to problem-solving is not supported (Q2.17.3: $r = .25$, $p = .068$).

This finding suggests that the respondents are more concerned about the action orientation aspects of problem-solving rather than intellectual rigour or intellectual flexibility in problem-solving.

\[ X \quad \delta \]

| Q2.17.1 | Cooperation between training staff members in team operations | 3.58 | 0.93 |
| Q2.21.2 | The interests of training staff is effectively represented at the top management | 3.00 | 1.14 |
| Q2.13.2 | That the established standards are upheld by TM* | 3.42 | 1.01 |
| Q2.13.3 | There is room for negotiations for the changing of standards if necessary* | 3.23 | 1.10 |
Q2.18.1  
Openness and flexibility of communication among the training staff  

<p>| | | |</p>
<table>
<thead>
<tr>
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<tr>
<td>3.43</td>
<td>0.97</td>
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</table>

Q2.20.1  
That the staff relationship among the training staff is satisfactory*  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>3.35</td>
<td>0.92</td>
<td></td>
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</tbody>
</table>

Q2.12.1  
In the organisation worker participation in decision making is encouraged specifically by the training manager (TM)*  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.30</td>
<td>1.28</td>
<td></td>
</tr>
</tbody>
</table>

Q2.12.2  
The TM encourages delegation of decision-making*  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.51</td>
<td>1.17</td>
<td></td>
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</tbody>
</table>

Q2.12.3  
Communication skills are exhibited by TM*  

<p>| | | |</p>
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<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>3.13</td>
<td>1.18</td>
<td></td>
</tr>
</tbody>
</table>

Q2.12.4  
There is a degree of dogmatism and authoritarianism exhibited by TM*  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.32</td>
<td>1.14</td>
<td></td>
</tr>
</tbody>
</table>

Q2.12.5  
There is emphasis given to problem-solving/action oriented by TM  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>3.21</td>
<td>1.18</td>
<td></td>
</tr>
</tbody>
</table>

Q2.12.6  
The TM supports the social needs of the employees*  

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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>2.98</td>
<td>1.22</td>
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</tbody>
</table>

Q2.19.1  
The TM is successful in integrating efforts of individual staff*  

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<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>0.92</td>
<td></td>
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</tbody>
</table>

Q2.19.2  
In the perceived equity of TM's allocation of resources  

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<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.23</td>
<td>0.99</td>
<td></td>
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</table>

Q2.17.2  
Problem-solving/action orientation of training staff  

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<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.19</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

Q2.17.3  
Conceptual flexibility of individual training staff members*  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.92</td>
<td>1.14</td>
<td></td>
</tr>
</tbody>
</table>

* not significant p > .05

Table 8.10 Qualities of training personnel and the overall training system effectiveness
In Table 8.10, the sample means and the standard deviations of the variables measuring the qualities of training personnel are displayed. The mean of the overall training effectiveness criterion is \( X = 3.04 \). The IM's support of worker participation (\( X = 2.98 \)) and integrating efforts of individual staff (\( X = 3 \)) is below the perceived sample mean of the overall training system effectiveness criterion. The respondents also do not believe that the training managers in their organisations are dogmatic or authoritarian (\( X = 2.32 \)). The survey shows that the majority of the respondents believe that the conceptual flexibility (\( X = 2.92 \)) and the interests of training staff are not effectively represented at the top management level (\( X = 3 \)) as compared to the overall training effectiveness measure (\( X = 3.04 \)).

The nature of the psycho-social variables is not only determined by the internal qualities of its personnel. Also of considerable relevance are the roles that the training staff are called upon to perform within the organisation. Rogers, Morgan and Guest (1971) have shown that the training staff may perform many roles and that these roles are principally determined by the following factors:

1. The status and perceived importance of the training department as expressed by top management's interest and support (Q2.21.2: \( r = .31, p = .025 \)). This is probably the most important variable and is usually a reflection of the degree to which training is recognised as an important contributor to effective management.
2. The extent to which there is a requirement and demand for training in the organisation. This can vary with company size and complexity of operation. It also depends upon the natural development of training in a firm which can change the training role drastically over time.

Perceived importance of training within the organisation is significantly correlated with the overall training system effectiveness (Q2.21.3: \( r = .50, p = .000 \)). There is also support for the identification of training needs and activities through regular communication between training staff and line management (Q2.4.1: \( r = .35, p = .009 \)).
3. The managerial calibre of the training staff, their seniority in the management hierarchy and their acceptance by other management groups.

The influence of the managerial calibre of the training staff on the overall effectiveness of the training system is well supported in the study. The performance of the training staff (Q2.11.1: $r = .61, p = .000$), the quality of the training programs conducted by the training staff (Q2.11.2: $r = .57, p = .000$), the efficient use of resources (Q2.11.3: $r = .46, p = .001$), qualification of the training staff (Q2.16.1: $r = .42, p = .002$) and their appropriate experience (Q2.16.2: $r = .41, p = .002$) are found to be highly significant to the measure of overall training system effectiveness.

The training staff status in Table 8.11 suggests that they are perceived by the respondents as being a highly effective group. Generally they have rated above average and higher than the mean for the overall training effectiveness measure. Only regular communication between training staff and line management on training activities and needs ($X = 3$), and the interest of the training staff being represented at the top management level ($X = 3$) are below the effectiveness criterion mean ($X = 3.04$).

<table>
<thead>
<tr>
<th>Q2.21.2</th>
<th>The interest of training staff is effectively represented at the top management</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>3.00</td>
</tr>
<tr>
<td>S</td>
<td>1.14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.4.1</th>
<th>Regular communication between training staff and line management on training activities and needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>3.00</td>
</tr>
<tr>
<td>S</td>
<td>1.24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.21.3</th>
<th>There is perceived importance of training within the organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>3.28</td>
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<tr>
<td>S</td>
<td>1.29</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.21.4</th>
<th>The training staff is generally perceived within the company to be competent</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>3.28</td>
</tr>
<tr>
<td>S</td>
<td>1.12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.11.1</th>
<th>The training staff are performing well in my company</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>3.17</td>
</tr>
<tr>
<td>S</td>
<td>1.07</td>
</tr>
</tbody>
</table>
Q2.11.2
The quality of the training programs conducted by the training staff are good

Q2.11.3
The training staff get the maximum output from the resource inputs (money, people, equipment, etc.)

Q2.16.1
Training staff are well qualified for the job they perform

Q2.16.2
Training staff have appropriate experience (independent of Q2.16.2 above)

Table 8.11 Training staff status and the overall training system effectiveness

The role and status factors noted here obviously do not affect only the psychosocial variable. They have an interactive effect on the functioning of all other variables, but most notably the control variables and the external interface variables.

8.3.4 The external interface subsystem

One of the major propositions of this study is that not only is the perception of the effectiveness of the training system a function of its operations and the training it carries out, but is also a function of the degree and appropriateness of the integrative processes between the training system and the greater organisational system. The external interface is the critical area with regard to integrative functioning. It is also via the external interface that the training system interacts with the organisational environment, receives resource inputs and makes productive outputs which ultimately determines the effectiveness, and hence indirectly the survival, of the training function.

The external interface operates on two levels:
- interface with other departments of the organisation
- interface with the outside environment of the organisation.
Two principal groups within organisations interact with the training department. The first group is the personnel department and related staff services. In the interface with the other departments of the organisation, regular communication interchange between the training department and the personnel department was not found to be significant to the overall training system criterion measure (Q2.4.2: \( r = .02, p = .891 \)). The study did not support either the existence of mechanisms for reviewing and facilitating the integration of the training department with other areas of the organisation (Q2.9.1: \( r = .14, p = .329 \)) or the existence of channels of coordination between the training department and other departments, notably the personnel department and the company's long-range planning unit (Q2.9.2: \( r = .24, p = .087 \)) as having any significance to the overall training effectiveness criterion. There was however a significant relationship between integration of company development planning, manpower planning, personnel planning and training planning (Q2.3.3: \( r = .30, p = .030 \)) and the training system effectiveness criterion.

The second group consists of the line management and its involvement with the training department. In the survey, line involvement in the development of training policy was not found to be significantly related to the training system's effectiveness criterion (Q2.1.3: \( r = .08, p = .577 \)).

Among the features of line management - training system interaction are requests for specific training from line management, regular communication with the training staff on training activities and needs (Q2.4.1: \( r = .35, p = .009 \)), the advent of new technology with implications for development of complementary training programs (Q2.2.2: \( r = .40, p = .003 \)), and feedback to the training system on the perceived effectiveness and appropriateness of particular training efforts (Q2.14.3: \( r = .28, p = .044 \)). Other features are the involvement of superiors in subordinates' training, and support for trainees when they return to the job situation. These general features plus a number of situation specific details form the nature of the interchange between line management and the training department.
Q2.1.3  
Involvement of line management in the development of training policy*  

3.09  
1.34  

Q2.4.2  
Regular communication interchange between the training department and the personnel department*  

3.25  
1.41  

Q2.4.3  
Regular communication interchange between the training department and external training agencies  

3.06  
1.29  

Q2.9.1  
Mechanisms for reviewing and facilitating the integration of the training department with other areas of the organisation*  

2.51  
1.12  

Q2.9.2  
Channels for coordination between the training department and the other departments of the organisation. Notably the personnel department and company long-range planning unit (or equivalent)*  

2.96  
1.21  

Q2.3.3  
Integration of company development planning, manpower planning, personnel planning and training planning  

2.51  
1.25  

Q2.5.4  
Access to appropriate specialised external training and educational agencies*  

3.68  
1.08  

Q2.22.1  
The training staff in my company are good at anticipating training issues and needs that may come up in the future and planning for training so as to minimise their effects  

2.60  
1.06  

Q2.22.2  
The training staff are quick to accept and adjust to changes required in the training programs when changes occur in the organisational environment (eg. technological change)  

2.85  
1.13  

Q2.4.1  
Regular communication between training staff and line management on training activities and needs  

3.00  
1.24  

* not significant, p > .05  

Table 8.12 External interface variables and the training effectiveness criterion
The interchange between the personnel department and the training department has a somewhat different character. Usually the training department is an offshoot of the personnel department and in the Australian context, separate training departments are found mainly in larger organisations. Consequently, training functions are often closely integrated with personnel activities. There is a need for close integration between personnel and training activities under any structural conditions because the two functions are so inextricably interrelated. Such a relationship however is not reflected in the research findings (Q2.4.2). Training makes a vital contribution to manpower development and where an organisation has a manpower plan, training needs and activities form a major planning input. The existence of this situation is suggested in Australia by the research findings stated above (Q2.3.3).

In Table 8.12, the general perception is that in the organisation in which the respondents are employed, coordinating functions such as reviewing mechanisms for facilitating integration (X = 2.41) and channels of coordination (X = 2.96) between the training department and other areas of the organisation, and overall integration of company development planning, manpower planning, personnel planning and training planning (X = 2.51) are below satisfaction and also below the overall training system effectiveness mean measure (X = 3.04). The training staff's ability to anticipate changes (X = 2.60) and adapt to changes (X = 2.85) are also below satisfaction and are both highly correlated to the overall effectiveness of the training system.

Training can be a major element in personnel records. Credit for undergoing training is a part of many employees' service records. Training may have a reciprocal interaction with promotion or succession strategies. It is possible for performance rating to have a direct bearing on selection for further training. The whole process of staff appraisal and succession planning can be related to training. In a similar, way feedback between the recruitment, selection and induction processes and the training function can be very beneficial. It is a major decision as to whether an organisation
recruits people to be trained internally or recruits personnel who are already trained.

The success of the particular strategy chosen, of either recruiting people to be trained or recruiting trained personnel, is, to a certain degree, contingent on the training system and under both alternatives feedback between recruitment, training and line utilisation is necessary for total effectiveness. Within the manpower plan or equivalent, the personal career path strategies of staff is a factor for careful consideration. Training is a major element of career development, and given the acknowledged importance of motivational factors in learning, it is risky for management to ignore personal training preferences. Ideally career path counselling and training decisions should be closely allied.

The organisation's training system may have considerable contact with outside agencies especially since from such sources can come major information about new innovations in industry, in training practices, and group training schemes including the organisation of collective training schemes. Regular communication interchange between the training department and external training agencies is seen to have a significant relationship to the effectiveness criterion (Q2.4.3: r = .41, p = .002). Specifically having access to appropriate specialised external training and educational agencies is not, however, seen to be of significance to the study (Q2.5.4: r = .02, p = .904).

In regard to the external interface, the research found a significant relationship between the ability of the training staff to anticipate training issues and needs that may arise in the future, and planning for training, and the overall training systems effectiveness criterion (Q2.12.1: r = .45, p = .001). There was also a strong correlation between the effectiveness criterion and the ability of the training staff to quickly adapt the training program when changes occur in the organisational environment (Q2.22.2: r = .41, p = .002).
8.3.5 Relationship of the overall training system effectiveness to the structural variables: industry type, size and formalisation

In the concluding part of this chapter the structural variables identified in chapters 5, 6 and 7 are related to the overall training system effectiveness criterion.

Table 8.14 shows the Pearson’s Product Movement Correlation Matrix. When the matrix is studied closely, it can be observed that industry type and the size of the organisation has no significant correlation with the overall effectiveness of the training system. Formalisation of the training department \((p = .000)\) and the formalisation of the training function \((p = .000)\) in the organisation shows a strong negative relationship with the overall training system effectiveness. This tends to indicate that respondents in organisations with training departments perceive that there is overall a more effective training system than respondents who have stated that their organisations do not have a training department (see Table 8.13).

Table 8.13 Relationship of the overall training system effectiveness to the formalisation of the training department

<table>
<thead>
<tr>
<th>Q1.10</th>
<th>Count</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3</td>
<td>4</td>
</tr>
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<td>11.3</td>
<td>46.3</td>
<td>37.5</td>
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<td>14.6</td>
<td>36.6</td>
<td>36.6</td>
<td>12.2</td>
</tr>
</tbody>
</table>

Column Total: 8.6 24.8 43.0 28.9 1.7 100.0
Table 8.14 Relation of the overall training system effectiveness to the structural variable: industry type, size and formalisation

<table>
<thead>
<tr>
<th>Correlations: Q3.2</th>
<th>Q1.7</th>
<th>Q1.8</th>
<th>Q1.10</th>
<th>Q1.12</th>
<th>Q1.14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3.2</td>
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<td>r = .0094</td>
<td>r = .0448</td>
<td>r = .4124</td>
<td>r = .1532</td>
</tr>
<tr>
<td></td>
<td>P = .</td>
<td>P = .920</td>
<td>P = .633</td>
<td>P = .000</td>
<td>P = .101</td>
</tr>
<tr>
<td>Q1.7</td>
<td>r = .0094</td>
<td>r = 1.0000</td>
<td>r = .1993</td>
<td>r = .1581</td>
<td>r = .1421</td>
</tr>
<tr>
<td></td>
<td>P = .920</td>
<td>P = .</td>
<td>P = .032</td>
<td>P = .090</td>
<td>P = .128</td>
</tr>
<tr>
<td>Q1.8</td>
<td>r = .0448</td>
<td>r = .1993</td>
<td>r = 1.0000</td>
<td>r = -.3272</td>
<td>r = -.2186</td>
</tr>
<tr>
<td></td>
<td>P = .633</td>
<td>P = .032</td>
<td>P = .</td>
<td>P = .000</td>
<td>P = .018</td>
</tr>
<tr>
<td>Q1.10</td>
<td>r = -.4124</td>
<td>r = .1581</td>
<td>r = -.3272</td>
<td>r = 1.0000</td>
<td>r = .4927</td>
</tr>
<tr>
<td></td>
<td>P = .000</td>
<td>P = .090</td>
<td>P = .000</td>
<td>P = .</td>
<td>P = .000</td>
</tr>
<tr>
<td>Q1.12</td>
<td>r = -.1532</td>
<td>r = .1421</td>
<td>r = -.2186</td>
<td>r = .4927</td>
<td>r = 1.0000</td>
</tr>
<tr>
<td></td>
<td>P = .101</td>
<td>P = .128</td>
<td>P = .018</td>
<td>P = .000</td>
<td>P = .</td>
</tr>
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<td>r = -.0149</td>
<td>r = -.3439</td>
<td>r = .4937</td>
<td>r = .3590</td>
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<td>P = .874</td>
<td>P = .000</td>
<td>P = .000</td>
<td>P = .000</td>
</tr>
</tbody>
</table>

n = 116
(2-tailed Significance)
"." is printed if a coefficient cannot be computed

**Notation**
- Q3.2 = overall training system effectiveness criterion
- Q1.7 = industry type
- Q1.8 = size of organisation
- Q1.10 = training department
- Q1.12 = training manager
- Q1.14 = training function

This perception is also strong among the respondents who have stated that, in their organisations, training is a major function. In the respondents' organisations where training is not a major function, perceptions of the overall training system show that it is not viewed as being highly effective (see Table 8.15).
Table 8.15 Relationship of the overall training system effectiveness to the formalisation of the training function

<table>
<thead>
<tr>
<th>Q3.2</th>
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<th>Low</th>
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<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
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<td>49.2</td>
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<tr>
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<td>33.9</td>
<td>17.9</td>
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<td></td>
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<td>35</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>6.7</td>
<td>20.2</td>
<td>42.0</td>
<td>29.4</td>
<td>1.7</td>
<td></td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is of interest to note that the respondents in the sample do not believe that the formalisation of the position of training manager improves overall training systems effectiveness. In fact as shown in Table 8.16, 67.2 per cent of the respondents employed in organisations where the position of the training manager has been formalised, believe that the overall effectiveness of the training system is average or below average. Of the respondents who are employed in organisations without training managers this perception is even stronger (74 per cent).

Table 8.16 Relationship of the overall training system effectiveness to the formalisation of the training manager

<table>
<thead>
<tr>
<th>Q3.2</th>
<th>Count</th>
<th>Low</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>High</th>
<th>5</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1.12</td>
<td>Row Pct</td>
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<td>4</td>
<td>17</td>
<td>41</td>
<td>28</td>
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</tr>
<tr>
<td></td>
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<td>4.3</td>
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<tr>
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<td>51</td>
<td>35</td>
<td>2</td>
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<td></td>
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<td>Total</td>
<td>6.7</td>
<td>20.0</td>
<td>42.5</td>
<td>29.2</td>
<td>1.7</td>
<td></td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The study also shows (Table 8.14) that the size of the organisation, though not significant, is weakly related to the formalisation of the training department \( (p = .090) \). The nature of the industry is significantly related to the size of the organisation \( (p = .032) \), the formalisation of the training department \( (p = .000) \) and the formalisation of the training function \( (p = .000) \).

The overall implications from these findings are that size and industry type are not significantly related to the overall training system effectiveness criterion. Size and industry type may have some predictable relationship to training systems effectiveness criteria as shown in Chapters 5 and 6 where industry type is found to have a significant relationship with ten of the training system effectiveness criteria and size is found to have a significant relationship to three of the training system effectiveness criteria.

Formalisation of the training department and the formalisation of the training function are significantly related to overall training effectiveness. This result is supported in Chapter 7 where sixty four out of the sixty nine criteria (93 per cent) are found to be significantly related to the formalisation of the training department \( (p < .05) \). In the relationship between the training function and the training system effectiveness criteria, fifty nine (86 per cent) of the criteria were found to have high correlational significance \( (p < .05) \). However only 42 (61%) of the training system’s effectiveness criteria were found to be significantly correlated to the formalisation of the position of training manager.

The conclusion of this research then is that the formalisation of the training department and the training function are the two main structural factors of formalisation that have a strong relationship with the training effectiveness of the system. Size of organisation, industry type and even the degree of formalisation of the training manager’s position are not seen to have a direct relationship to the training systems’ effectiveness.
8.4 Summary

Numerous elements of the training system effectiveness criteria have been identified. The list is by no means exhaustive but should give a clear indication of the scope of activities operating within a training system.

In this chapter, which brings together the major empirical findings of this research, the sixty-nine dependent variables that formed the index of training systems effectiveness criteria were correlated with the single independent variable, namely the overall training system effectiveness criterion. Of the sixty-nine variables, forty were found to be significantly related to the overall training effectiveness criterion. The importance of these variables in a rank order is shown in Table 8.1. The exact two-tailed probability of the Pearson's Product Moment Correlation coefficient was chosen and the level of significance acceptable was at \( p < .05 \).

This correlational statistic was also supported by the use of arithmetic means (\( X \)) to indicate the importance of the respondents' perceptions of the training system effectiveness criteria compared to the overall training system criterion. Since the overall training system criterion mean was 3.04, this was taken as being satisfactory, since it was close enough to the Likert scale of 3.0, which is taken in this research to mean a satisfactory level. This supporting statistical interpretation was seen to be important since correlation studies only show relationships, as stated in chapter 3, but cannot prove any cause and effect relations.

It was not the intention of this research to prove cause and effect relationships (although ultimately some cause and effect relationships are suggested) but to explore the variables or combinations of variables that may influence the effectiveness of training systems, and to interpret these findings.
The Subsystems of the Training Department

Operational planning
- Company-wide training need analysis
- Resource allocation and utilisation
- Reactive planning
- Proactive planning

Socio-technical

Training tasks
- Feedback
- Competent evaluation of training performance
- Competent evaluation of training programs
- Educational inputs

Technology
- Organisational nature

Primary structural variable
- Staff size
- Work flow
- Staff cooperation

Mediating variable
- Control
- Staff motivation
- Professional standards
- Monitoring standards
- Authority
- Application of rewards and sanctions
- Information
- Database

Psycho-
- Training
- Staff
- Cooper
- Comm
- Repre
- Percei
- Manag
- Withi
- Train
- Staff
- Perf
- Proc
- Reso
- Expe
CHAPTER 9

AN EXPLORATION OF THE RELATIONSHIP BETWEEN TRAINING SYSTEM EFFECTIVENESS AND THE ENVIRONMENTAL VARIABLES

9.1 Introduction

In chapter 3, the concept of the open systems framework was introduced as a key to understanding organisations and how they interact with their environment. So far, very little has been said about the environment and its relationship with the effectiveness of the training system. This chapter will rectify this omission.

In the review of literature on organisations, the ability of organisations to maintain and increase their effectiveness by adapting to environmental changes, is a common theme. The open systems framework allows for the development of monitoring and feedback mechanisms that guide organisations to adapt to changes in their environment. These interactive mechanisms enable organisations to maintain management practices which are current.

The purpose of this chapter, is to link the concept of the subsystem, namely the training system effectiveness to its environmental characteristics. This emphasises the same philosophical issue as that of Lawrence and Lorsch’s (1969) Organisation Environment, seeking answers to the elusive concept of organisational effectiveness and its relationship to the environment.

This chapter is primarily concerned with exploring the relationships between overall training system effectiveness and characteristics of the organisation’s environment. Environmental characteristics in this research are overall organisational effectiveness, organisational climate and the state of the immediate
environment of the training department. In addition, the relationships of the perceptions of overall training system effectiveness and environments with the dimensions of organisational structure and size are examined.

In this study 122 responses were analysed from a questionnaire (Appendix B) posted to the 151 respondents, whose responses were analysed in Part 3, to study the relationship between structural variables and training system performance criteria.

The chapter offers an approach to analysing organisation training system effectiveness in a dynamic way, and thus explaining its configuration in the organisation's environmental context. The structural relationships are explained in Figure 9.1. The variables in the model in this study are:

1. The overall perceptions of organisational effectiveness.
2. The overall perceptions of training system effectiveness.
3. The perceived organisational climate.
4. The perceived state of the environment.

9.2 Defining environment

A simplified definition of an organisation's environment is offered by Miles (1980, p.195).

Just take the universe, subtract from it the subset that represents the organisation, and the remainder is environment.

He however adds that, it is not that simple to define an organisation's environment. Basically the problem arises when the environment of the organisation is differentiated by the degree of influence the environmental factors have on the organisation. Robbins (1987, p.150) differentiates between an organisation's general and
its specific environment. The factors of the general environment are stated as the conditions that may have an impact on the organisation, but their direct influence is not obvious. For example, the state of the immediate environment will undoubtedly have a far-reaching impact on the prevailing organisational climate (see Figure 9.1). Its impact on the effectiveness of the organisation is, however, only indirectly relevant. The specific environment is considered directly relevant to the organisation (or subunit) in realising its goals. In the current research two variables, overall training system effectiveness and overall organisational effectiveness, are perceived to be related (Figure 9.1). In this instance the specific environment of the training system is the overall organisation. The performance of the training system contributes to the overall organisational effectiveness.

It should be noted that the perception of an environment is basically what an individual sees or perceives to be. Therefore the degree of differentiation of the environment depends on the individual's perception of what makes up the specific or general environment and his assessment of the environmental conditions (Starbuck: 1976, p.1080).

At a given time, two or more organisations can be operating in very different environmental conditions. The environmental conditions are subjected to what is commonly known as environmental uncertainty. Some of the organisations can be operating in a relatively dynamic environment, where the conditions of the specific environment are rapidly changing. This is obviously the case in the computer industry (see Table 9.1). Other organisations face relatively static environments, where the conditions of the specific environment are changing very little. The Exploration industry and Defence are perceived to be operating in such an environment (Table 9.1). Both these industries have been affected by the subdued and non-active environmental conditions. In static environments there is less uncertainty for decision-makers.
Table 9.1: Industry Type by Immediate State of the Environment

<table>
<thead>
<tr>
<th>Q3.4-Count</th>
<th>Static Conditions</th>
<th>Dynamic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Row Pct 1 2 3 4 5</td>
<td>Row Total</td>
</tr>
<tr>
<td>FQ1.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4 6 12 14</td>
<td>36</td>
</tr>
<tr>
<td>Government</td>
<td>11.1 16.7 33.3 38.9</td>
<td>29.5</td>
</tr>
<tr>
<td>2</td>
<td>4 2 3 3</td>
<td>12</td>
</tr>
<tr>
<td>Defence</td>
<td>33.3 16.7 25.0 25.0</td>
<td>9.8</td>
</tr>
<tr>
<td>3</td>
<td>4 2 1 3</td>
<td>10</td>
</tr>
<tr>
<td>Exploration</td>
<td>40.0 20.0 10.0 30.0</td>
<td>8.2</td>
</tr>
<tr>
<td>4</td>
<td>5 6 9 4</td>
<td>24</td>
</tr>
<tr>
<td>Manufacturing</td>
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<td>19.7</td>
</tr>
<tr>
<td>5</td>
<td>1 1 1</td>
<td>3</td>
</tr>
<tr>
<td>Service</td>
<td>33.3 33.3 33.3</td>
<td>2.5</td>
</tr>
<tr>
<td>6</td>
<td>2 1 4</td>
<td>7</td>
</tr>
<tr>
<td>Retail</td>
<td>28.6 14.3 57.1</td>
<td>5.7</td>
</tr>
<tr>
<td>7</td>
<td>1 1 2 3</td>
<td>7</td>
</tr>
<tr>
<td>Tertiary education</td>
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<td>5.7</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>Professional</td>
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<tr>
<td>9</td>
<td>1 1 3 7</td>
<td>12</td>
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<tr>
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<td>4</td>
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<td>Computers</td>
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<tr>
<td>11</td>
<td>2 1</td>
<td>3</td>
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<tr>
<td>Other</td>
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</tr>
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<td>122</td>
</tr>
<tr>
<td></td>
<td>0.8 16.4 18.0 35.2 29.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi-square | D.P. | Significance
55.26829    | 40   | 0.547
1. Overall Training System Effectiveness. 
   \[ r = .27 \text{ (P = .003)} \]

2. Overall Organisational Effectiveness 
   \[ r = .46 \text{ (P = .000)} \]

3. The Organisational Climate 
   \[ r = .22 \text{ (P = .015)} \]

4. The State of the Environment

Fig. 9.1 Model explaining the relationship of the overall training system effectiveness and the environmental conditions

9.3 The environmental conditions

In chapter 8, the emphasis was on the interpretation of training system effectiveness based on a multi-dimensional approach. In this chapter the environmental factors that have a definite relationship to training system effectiveness are examined. A study of this nature is appropriate when the environmental conditions have strong relationships with an organisation's operation, or when the organisation's operation is very reactive to environmental demands (Cameron: 1980).

Each organisation has its own internal and external environment, which will influence how effective particular management policies and practices are in that particular environment.

According to this view, managers must be constantly aware of the constraining factors of each environment in which the organisation operates, and must refrain from any attempts to enforce standardisation in training policies and practices. Rather, management should consider the unique characteristics of their own organisations in developing appropriate policies and practices.

There is some convincing emerging evidence that management practice is, indeed culture based (Wallach: 1983). Not all organisations have the same external environmental influences and the
same organisational culture. For example, the banks and the financial institutions will have a different internal and external environment from that of the motor vehicle industry. Likewise, even within the same motor industry, General Motors has a different organisational culture from that of Nissan or Toyota.

In respect to the above proposition, training systems can be better understood from the viewpoint of systems theory, which suggests that systems such as training utilise four basic types of input or resource from the environment: human resources, financial resources, physical resources and information resources. Human resources include managerial talent, personnel and the like, the financial resource is the capital used to fund the organisation's operations, and physical resources includes the raw materials, training facilities and equipment. Information resources are the data processing and information producing capabilities and requirements of the training system.

Generally, the training manager's job involves combining and coordinating the various training resources to achieve the organisation's goals, and to do so they perform, in the training area the basic management functions of planning, organising, leading and controlling, (Payol, 1949, Koontz and O'Donnell, 1982).

Since training policies differ from organisation to organisation, governed by internal variables of the organisation and external influences of the environment, it is true to say that the measure of organisation effectiveness should not be based on a universal objective like profitability, productivity or other tangible measurement alone. It is then important to develop a set of criteria for performance measurement suitable to each organisation.

The question in the minds of many managers is how to organise organisational units to effectively handle contingencies that arise (Smith:1987). To satisfy this requirement, considerable research has been directed towards isolating factors upon which an organisation's structure may be contingent (Pugh et al.: 1969). The problem still rests on how "best" to describe the environment.
Kimberly and Rottman (1987, p.595), in constructing a biographical approach to analysing organisations, suggest that the fruits of the last twenty years of research into organisational effectiveness (since Lawrence and Lorsch's (1969) *Organization and Environment*) have culminated in two benefits to current research in the field:

i) There is a shift towards a more dynamic orientation for explaining organisational configurations and outcomes.

ii) There is the identification of strategic decision making as the link between organisation environment, structure, and effectiveness.

9.3.1 The problem of environmental dimensions

Dill (1958) in his study refers to the environmental characteristics leading to stability. The study refers to environmental stability based on either decentralised or centralised organisational arrangements. The celebrated works of Thompson (1967) and Burns and Stalker (1961) also refer to the concept of stability and uncertainty reflected by the degree of heterogeneity. Research suggests that environmental uncertainty tends to require more flexible and perhaps more decentralised organisational arrangements (Dill: 1958; Lawrence and Lorsch: 1967; Duncan: 1972).

The dimensions of the environment are the subject of major disagreement among researchers. The two major areas of debate among researchers are:

1. Uncertainty

Duncan (1972) says that the effects of environmental uncertainty on the internal characteristics of organisations can be due to the complexity of elements in the environment and their variability over time.
Pfeffer and Salancik (1978) suggest that uncertainty is the indirect result of the degree of resource concentration, the scarcity of these resources and the degree of interconnectedness of the resources in the organisation.

More recently, Pfeffer (1981) has commented that the degree of uncertainty in the organisation caused by environmental conditions, may be overstated in explaining structure, and that the more fundamental dimensions of the environment itself, such as dynamism, should be utilised to measure the environmental conditions.

2. Objectivity

There is a disagreement on the subjective nature of perceived characteristics of the environment. This disagreement has centred on the use of objective and perceived organisational characteristics of the environment. Several researchers have suggested that the objective and the perceived environment are not the same. (Downey et al: 1975; Pennings: 1975; Tosi et al: 1973)

To overcome the two shortcomings as stated above in the current research, the suggestion by Pfeffer (1981) is utilised, that is, to incorporate dynamism as a measure of the social relationship indicator. To accommodate the debate on the perceived and objective environmental characters, both objective and perceived environmental measures have been incorporated in this research. The examination of the objective environment and its relationship with the training system's effectiveness was the subject of Chapters 5, 6 and 7, where the structural measures of size, type of industry and formalisation were seen to have some relationship with the training system. In this part of the research, the perceived environment, that is, organisational effectiveness, organisational climate and the state of the environment, will be the major considerations.
9.4 Defining the environmental variables

The relationship between the four variables mentioned below were correlated using the Pearson's Product moment matrix. The strength of relationships were determined by the coefficient \( r \) and exact significance \( p \).

9.4.1 Overall training system effectiveness

This is a single criterion that measures the perception of the respondents' overall view of the effectiveness of the training system. "Training system" here refers to either the training department, if the organisation has formalised this department, or the personnel department, if there is no training department but the personnel department has the responsibility of coordinating the training function.

9.4.2 Overall organisational effectiveness

This construct is hard to define objectively and should be viewed in a similar way as the overall training system effectiveness. It is, then, treated as a single criterion that measures the perceptions of the respondents' overall view of the effectiveness of their organisations.

9.4.3 Organisational climate

This variable is newly introduced into this research and as such needs to be defined clearly.

Litwin and Stringer (1968) and Payne (1971) have defined organisational climate as a molar or central concept which reflects the general condition or atmosphere of a workplace. The organisational climate is assumed to influence the behaviour of individuals in an organisation by motivating and giving satisfaction to them.
A number of researchers have expanded on the notion of Likert’s ‘intervening variables’ and have suggested that organisational climate falls into this category (Hellriegel and Slocum: 1974; Schneider and Hall; 1974). The function of organisation climate as an intervening variable is well defined by Lawler, Hall and Oldham (1974, p.140).

... climate is an intervening variable, caused by independent variables such as job activities and organizational structure, and in turn influencing a variety of output variables which are important to the organization as a system as well as to individual employees.

This idea is extended in Payne and Mansfield’s (1967) work, who argue that organisational climate has the capacity to link individual perceptions with the organisational level of analysis. Dastmalchian (1986), concludes that “the perceptions of organisational climate can be affected by a set of ‘causal’ factors, and may influence or be influenced by, the ‘end-result variables” (p.610)

Though Payne and Pugh (1976) in their research have found inconclusive evidence of organisational climate being an intervening variable, studies show that organisational climate is influenced by a number of internal and external factors (Dastmalchian: 1986). As far as internal factors are concerned, size and structure of the organisation are said to have an influence. External factors like organisational environment are said to have a direct influence on organisational climate (Joyce and Slocum: 1979). For example, Litwin and Stringer (1968) found that organisations with the ‘achievement climate’ were significantly more productive and innovative than organisations with ‘power’ and ‘affiliation’ climates. Likewise Schneider and Bartlett (1968) also considered climate to be primarily affected by the leadership style used in the organisation. Friedlander and Marquiles (1969) found that co-worker behaviour and leadership influenced climate.

Azma and Mansfield (1981) found that organisational climate was a measure of organisational effectiveness, though their hypothesis that competition, through decentralisation, would relate to organisational effectiveness, was not confirmed. However, they found that
centralisation was positively related to organisational climate. Their studies showed that in organisations operating in a highly competitive environment, organisational climate was influenced by task orientation and employee involvement.

There are numerous definitions of organisational climate, however most studies seem to agree that organisational climate can be considered as an employee's subjective perception of his organisation (Lawler et al: 1974). Schneider and Hall (1972) add to this view by stating that climate perceptions emerge as a result of the person's numerous interactions, activities, feelings and experiences in the organisation, and that perceived climate may be related to individual job satisfaction, involvement, and performance. In this view, climate is an intervening variable, caused by independent variables such as organisational performance and job activities.

In this research, organisational climate is defined as "the quality of working life". This definition includes the respondents perceptions of the level of employee morale and job satisfaction, as expressed by Lawler et al (1974). Table 9.2 shows that only twenty two of the sixty nine performance variables are significantly related to organisational climate.
<table>
<thead>
<tr>
<th>Performance indices</th>
<th>Pearson's r</th>
<th>p*</th>
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</thead>
<tbody>
<tr>
<td>Q2.3.23 Integration of company planning units</td>
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<td>.000</td>
</tr>
<tr>
<td>Q2.8.2 Proactive planning</td>
<td>.45</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.12.5 Problem-solving orientation of training manager</td>
<td>.45</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.7.1 Company-wide training need analysis</td>
<td>.43</td>
<td>.001</td>
</tr>
<tr>
<td>Q2.4.1 Communication between training staff and line management</td>
<td>.40</td>
<td>.003</td>
</tr>
<tr>
<td>Q2.9.2 Channels of coordination</td>
<td>.40</td>
<td>.003</td>
</tr>
<tr>
<td>Q2.11.3 Productivity of training staff</td>
<td>.37</td>
<td>.006</td>
</tr>
<tr>
<td>Q2.17.3 Conceptual flexibility of training staff</td>
<td>.36</td>
<td>.009</td>
</tr>
<tr>
<td>Q2.5.1 Adequate finance</td>
<td>.35</td>
<td>.010</td>
</tr>
<tr>
<td>Q2.10.1 Mechanisms for monitoring potential conflicts</td>
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<td>.011</td>
</tr>
<tr>
<td>Q2.21.3 Training importance in the organisation</td>
<td>.35</td>
<td>.011</td>
</tr>
<tr>
<td>Q2.10.2 Conflict resolution by means of confrontation of issues and consultation</td>
<td>.35</td>
<td>.011</td>
</tr>
<tr>
<td>Q2.1.3 Line management involvement in development of training materials</td>
<td>.34</td>
<td>.012</td>
</tr>
<tr>
<td>Q2.18.2 Communication between geographically separate training staff members</td>
<td>.32</td>
<td>.020</td>
</tr>
<tr>
<td>Q2.17.2 Problem-solving orientation of training staff</td>
<td>.31</td>
<td>.025</td>
</tr>
<tr>
<td>Question</td>
<td>Description</td>
<td>Mean</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Q2.9.1</td>
<td>Integration of training department with other areas</td>
<td>0.30</td>
</tr>
<tr>
<td>Q2.12.1</td>
<td>Worker participation is encouraged by the training manager</td>
<td>0.30</td>
</tr>
<tr>
<td>Q2.3.2</td>
<td>Long-range planning</td>
<td>0.29</td>
</tr>
<tr>
<td>Q2.8.1</td>
<td>Reactive planning</td>
<td>0.28</td>
</tr>
<tr>
<td>Q2.1.2</td>
<td>Written training department policy</td>
<td>0.28</td>
</tr>
<tr>
<td>Q2.6.3</td>
<td>Frequent meetings among company to decide training needs</td>
<td>0.28</td>
</tr>
<tr>
<td>Q2.4.2</td>
<td>Communication between training department and personnel department</td>
<td>0.27</td>
</tr>
<tr>
<td>Q2.3.1</td>
<td>Training resource allocation and utilisation</td>
<td>0.27</td>
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<td>Q2.14.1</td>
<td>Formal system for monitoring performance</td>
<td>0.26</td>
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<tr>
<td>Q2.16.2</td>
<td>Training staff have appropriate experience</td>
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</tr>
<tr>
<td>Q2.11.1</td>
<td>Training staff performance</td>
<td>0.25</td>
</tr>
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<td>Q2.7.2</td>
<td>Regular survey for specialised training needs</td>
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<td>Q2.5.2</td>
<td>Appropriate staff to conduct training</td>
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<tr>
<td>Q2.18.3</td>
<td>Access to group information sources</td>
<td>0.24</td>
</tr>
<tr>
<td>Q2.11.2</td>
<td>Quality of training programs</td>
<td>0.23</td>
</tr>
</tbody>
</table>

*Exact Pearson's two-tail significance
9.4.4 State of the immediate organisational environment

Donaldson (1987 p.2) measures the environment of the organisation by the rate of technological change which gives rise to a set of pressures to which the structure must in the long run adapt. This notion is expanded in this research to study the dynamism of the environment in relation to the organisation.

In a number of recent studies, researchers have set out to understand the organisation's environment and its bounds (Anderson and Paine: 1975); McCaskey: 1979; Stein: 1981). Their research focused on the perceptions of managers of the attributes of the organisational environment. Some managers perceive the same environment as more uncertain than do others, and thus perceptions of environmental uncertainty are more than simply an environmental attribute (Downey, and Slocum: 1975, p.614).

Thompson and Tuden (1959) have argued that highly uncertain and turbulent environments lead to the establishment of a high degree of computational decision making processes. For example, deregulation and other policy changes to the finance industry in recent times, has created a competitive environment, and financial institutions have adapted to changes by installing computer intelligence to service customer needs.

This in turn leads to a system that relies on a high degree of formalised structure. White et al (1980) reject this notion and suggest that strategic decision making is facilitated by less formalised organisations. The differences in the views can be accommodated when it is seen that Thompson and Tuden (1959) focused on the effect of uncertainty on the organisation, while White et al (1980) were concerned with the effect that environmental change has on organisations.

The celebrated works of Burns and Stalker (1961), Emary and Trist (1965) and Lawrence and Lorsch (1965) are landmark contributions to the understanding and influence of the environment on the structure
of the organisation. They theorised that environment determines structure. In essence they proposed that the environmental demands generate conditions in the organisation that are satisfied by the appropriate organisational structure. Their explanation of the interactive nature of the environment and the organisational structure was based on a systems perspective. The flow of inputs into the organisation and the outflow of outputs was considered important to the survival of the organisation. Survival of the organisation in this context was based on the organisation's ability to cope with the uncertainties of the environment. These environmental conditions determined the input/output equilibrium necessary for the organisation to survive in a competitive open system.

Burns and Stalker (1961) found that the type of structure that existed in rapidly changing and dynamic environment was significantly different from that in organisations with stable environments. They called the structure found in a dynamic environment "organic" and labelled the structure as "mechanistic" in stable environments. Mechanistic structures were characterised by high complexity, formalisation and centralisation. The tasks performed were routine and relied on precise and programmed behaviour. The rate of change was slow. The organic structures were relatively flexible and adaptive. The structure promoted horizontal communication rather than vertical communication based on a superior/subordinate relationship. The method of communication was based on expertise and knowledge rather than the authority of the position. Exchange of information, rather than directives was encouraged, with responsibilities loosely defined.

Burns and Stalker were of the view that neither of the structures were to be considered superior to the other. The organisation that adapts to the environment with the most appropriate structure is the most effective. In other words, organisations operating in a dynamic and fast-changing environment should adapt organic structures while organisations in a stable or static environment should adapt mechanistic structures. They also cautioned against over-generalisation, as the ideal forms define two ends of a continuum, and, no organisation is purely mechanistic or purely organic.
Emery and Trist (1965) expanded on Burns and Stalker's model and identified four kinds of environments (see Table 9.3). The first two environments respond to the organic structures. Each environment is progressively more complex than the previous one.

Table 9.3 Emery and Trist's four kinds of environments

<table>
<thead>
<tr>
<th>Environments</th>
<th>Characteristics</th>
<th>Compared to Burns and Stalker's Model</th>
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</thead>
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<tr>
<td>1. Placid-randomised</td>
<td>Relatively unchanging environment and posing least threat.</td>
<td>Mechanistic structure</td>
</tr>
<tr>
<td>2. Placid-clustered</td>
<td>Environment changes slowly and threats are clustered to forces in the environment which are linked to each other rather than random threats. For example, some competitors joining forces to determine prices.</td>
<td></td>
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<tr>
<td>3. Distributive-reactive</td>
<td>More complex environment. Many competitors with two or three large companies exerting influence over their environment.</td>
<td>Organic structure</td>
</tr>
<tr>
<td>4. Turbulent-field</td>
<td>Dynamic and high uncertainty. Elements in the environment are interrelated with a high rate of change.</td>
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9.4.4.1 Technology and its influence on the organisation

Emery and Trist's four-environment model is also compatible with the research findings on technology (Thompson: 1967, Thomas et al: 1974). Research shows that the less routine the technology, the greater the uncertainty; the less effective the mechanistic qualities and the more important it is to use flexible forms of organisation. For example, the computer industry is perceived to operate in a dynamic environment (Table 9.1). Uncertainty is high and there is
Table 9.4 Influence of new technology on industry type

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Chi-square  D.F.  Significance
48.33249     40   0.1718
potential for major and rapid changes. In this type of environment, a flexible organic structure is most suitable. The respondents from the computer industry have also stated that their industry has a very high need to develop training programs associated with new technology (Table 9.4). This indicates that the survival of organisations in the computer industry depends very much on their adaptability to the fast changing technology. Respondents from the other industries like services, retailing, manufacturing and the professions do not reflect the same enthusiasm for the development of training programs associated with new technology.

9.4.4.2 Formalisation of the training function and its influence on the organisation

Most of the literature on environment (Burns and Stalker, Emery and Trist, and Lawrence and Lorsch) suggests that formalisation is a characteristic of mechanistic organisations. This is probably true of the subunits at the boundary of the organisation, that interact with the environment frequently (Robbins: 1987, p.163). This could probably explain the observations in this research. Formalisation of the training department and the position of the training manager corresponds more to organic structures (Table 9.5). Table 9.5 shows the computer and the insurance/finance industry respondents as perceiving a high proportion of formalised training departments (80% and 83.3% respectively) and positions of training manager (100% and 91.7% respectively) in their industries. Both these industries are operating in a dynamic environment (Table 9.1). On the other hand the manufacturing industry respondents have indicated that their organisations do not have highly formalised training departments (26.7%) or formalised positions of training manager (46.7%).
Table 9.5 Formalisation and the industry type

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Column total |

| 101 | 48 | 149 | 110 | 38 | 148 |
| 67.8 | 32.2 | 100.0 | 74.3 | 25.7 | 100.0 |

Chi-square | D.F. | Significance |

| 38.03841 | 10 | 0.0000 |
9.4.4.3 Managerial perceptions of the state of the environment

Lawrence and Lorsch (1965) studied the internal environment of the organisation and identified two separate dimensions: differentiation and integration. They suggested that managers at different levels and departments can be expected to hold different views and attitudes and behave differently in terms of their goal perspectives, expected time frames and their relationships with employees. They argued that since the managers do not see things the same way all the time, it is difficult to agree on integrated plans of action. This causes complexity and more rapid changes. The degree of differentiation than becomes a measure of complexity. The current research reflected this difference in perceptions among three managerial levels. The strategic planners (general managers) perceive a more dynamic environment than the officers in the survey (Table 9.6). The manager category is somewhere in between the general manager and the officer level in terms of perceptions of the state of the immediate environment.

Table 9.6 Managerial perceptions of the state of the immediate environment

<table>
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<th>Crosstabulation: Q1.5 by Q3.4</th>
<th>Seniority</th>
<th>Immediate state of environment</th>
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The integration aspect of the interdependent units or departments of the organisation was the second dimension of the internal environment. Lawrence and Lorsch's study concentrated on the requirements of achieving unity of effort in the organisation. The devices that organisations normally use to achieve this unity include rules, procedures and policies, formal plans, common databases for decision-making, channels of coordination and other integrative mechanisms.

In the current research, respondents from the computer, defence and exploration industries indicated that their industries achieved unity of training effort, by having written top management policies defining company-wide training missions and objectives (Table 9.7) and by having a written training department policy defining specific training missions and objectives (Table 9.7) and (Table 9.8). In both instances, the respondents from the manufacturing industry and the professions indicated a low preference for unity of training effort. The lack of chi square significance (p>0.6) restricts interpretation of the data about the status of the other industries.

Lawrence and Lorsch postulated that the more dynamic, complex, and diverse the external environment, facing an organisation, the greater the degree of differentiation among its subunits. They also suggested that there is a need for an elaborate internal integrative mechanism to maintain harmony among the subunits. The current study does not seem to support this proposition. Table 9.9 and Table 9.10 suggests that the respondents perceive that there is an overall lack of integration mechanisms in most of the industries surveyed. This finding can perhaps be attributed to differences in actual and perceived degrees of uncertainty. It has been suggested that replication of Lawrence and Lorsch's work using objective measures have often failed, suggesting that their results may be a function of their particular measure (Tosi et al: 1973; Downey and Slocum: 1975; Aldag and Storey: 1975).
Table 9.7 Unity of management training effort

Crosstabulation: Q1.7 Industry type
By Q2.1.1 Written management policy defining training

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Chi-square | D.F. | Significance
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### Table 9.8 Unity of departmental training effort

Crosstabulation: Q1.7 Industry type

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**Chi-square** | **D.F.** | **Significance**
---|---|---
54.80539 | 40 | 0.0595
Table 9.9 Mechanism for reviewing and facilitating integration

Crosstabulation: Q1.7 Industry type
By Q2.9.1 Mechanisms for reviewing and facilitating the integration of the training department with other areas of the organisation

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Chi-square | D.F. | Significance
--- | --- | ---
59.38567 | 40 | 0.0248
Table 9.10 Mechanisms for monitoring the development of potential conflict

Crosstabulation: Q1.7 Industry type
By Q2.10.1 Mechanism for monitoring the development of potential conflict between the training department and other areas of the organisation

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</tr>
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</table>

Chi-square | D.F. | Significance |
-----------|------|--------------|
57.29894   | 40   | 0.0374       |
The criticisms of Lawrence and Lorsch's work are valid from a research viewpoint. However from the practical aspect of the respondents, who are practising managers in this research, it is their perceptions of the environmental conditions that count. The perceptions of these managers represent an important contribution to the understanding of the relationship of the immediate environments with their respective organisational structures.

9.5 Environmental relationships with structure

In the current research, the state of the immediate environment of the organisation is measured by the degree of dynamism in the environment, as perceived by the respondents in the survey. The 5 point Likert scale measures this response. 1 is considered stable and 5 is dynamic. The mean average of the sample of this measure was 3.78, indicating a fairly dynamic environment (see Table 9.11).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Label</th>
<th>Cases</th>
<th>Mean</th>
<th>Std.Dev</th>
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</thead>
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<td>Q 3.1</td>
<td>overall organisation effectiveness</td>
<td>n=122</td>
<td>3.615</td>
<td>.0875</td>
</tr>
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<td>Q 3.2</td>
<td>overall training system effectiveness</td>
<td>n=122</td>
<td>3.000</td>
<td>.9091</td>
</tr>
<tr>
<td>Q 3.3</td>
<td>organisational climate</td>
<td>n=122</td>
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<td>.9648</td>
</tr>
<tr>
<td>Q 3.4</td>
<td>state of the immediate environment</td>
<td>n=122</td>
<td>3.779</td>
<td>1.0796</td>
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</table>

Table 9.12 shows the Pearson product movement correlation matrix of the four variable, overall perception of organisational effectiveness (Q 3.1), overall perception of training system effectiveness (Q 3.2) perceived organisation climate (Q 3.3) and the perceived state of the immediate organisational environment (Q 3.4).
Table 9.12 Pearson’s Product movement Correlation Matrix of the overall training system effectiveness and the environmental variables.

<table>
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<tr>
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<th>Q3.1</th>
<th>Q3.2</th>
<th>Q3.3</th>
<th>Q3.4</th>
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<td>r= 1.0000</td>
<td>r= .2702</td>
<td>r= .4620</td>
<td>r= .1289</td>
</tr>
<tr>
<td></td>
<td>P= .</td>
<td>P= .003</td>
<td>P= .000</td>
<td>P= .157</td>
</tr>
<tr>
<td>Q3.2</td>
<td>r= .2702</td>
<td>r= 1.0000</td>
<td>r= .1319</td>
<td>r= .0505</td>
</tr>
<tr>
<td></td>
<td>P= .003</td>
<td>P= .</td>
<td>P= .148</td>
<td>P= .580</td>
</tr>
<tr>
<td>Q3.3</td>
<td>r= .4620</td>
<td>r= .1319</td>
<td>r= 1.0000</td>
<td>r= .2203</td>
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<tr>
<td></td>
<td>P= .000</td>
<td>P= .148</td>
<td>P= .</td>
<td>P= .015</td>
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<td>r= .0505</td>
<td>r= .2203</td>
<td>r= 1.0000</td>
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<td>P= .157</td>
<td>P= .580</td>
<td>P= .015</td>
<td>P= .</td>
</tr>
</tbody>
</table>

(Coefficient / 2-tailed Significance)
"." is printed if a coefficient cannot be computed

9.5.1 The relationship between training system effectiveness and organisational effectiveness

When overall training systems effectiveness is correlated with the other three variables under examination, only training systems effectiveness is highly correlated with overall organisational effectiveness (r= .27 P= .000). The perceived relationships of the overall training system effectiveness to organisational climate (r= .13) and to the state of the immediate organisation environment (r= .05) are not significant (P>.05).

These perceived relationships suggest that the overall training system effectiveness measure (Q3.2) is significantly related to overall organisation effectiveness (Q3.1) and may be a contributor to the effectiveness of the organisation. The correlation also suggests that there is very little direct relationship between either the overall training system effectiveness and organisation climate or the state of the immediate environment. The implication of this finding is that the perceived effectiveness of the training system as a subunit in an organisation is directly related to the perceived
overall effectiveness of the organisation. No significant relationships were found either between training systems effectiveness and organisational climate or the state of the immediate environment.

Table 9.13 shows the relations of the training system effectiveness criteria and the overall organisational effectiveness.

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<tr>
<th>Training systems effectiveness</th>
<th>Pearson's r</th>
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<td>Q2.17.4 Cohesiveness in decision making</td>
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<td>Q2.12.5 Problem-solving orientation of training manager</td>
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<td>Q2.17.2 Problem-solving orientation of training staff</td>
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<td>Q2.7.1 Company-wide training need analysis</td>
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<td>Q2.17.3 Conceptual flexibility of training staff</td>
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<td>.007</td>
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<tr>
<td>Q2.22.2 Training staff are good at adapting to changes</td>
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<td>.008</td>
</tr>
<tr>
<td>Q2.11.2 Quality of training programs</td>
<td>.36</td>
<td>.008</td>
</tr>
<tr>
<td>Q2.16.2 Training staff have appropriate training</td>
<td>.36</td>
<td>.008</td>
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<td>Q2.13.3 Negotiation flexibility for changing standards</td>
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<td>.010</td>
</tr>
<tr>
<td>Q2.22.1 Anticipating training issues and needs</td>
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<td>.011</td>
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<td>Q2.8.2 Proactive training</td>
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<td>.012</td>
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Q2.18.1  
Openness and flexibility of communication among training staff .34 .014

Q2.20.2  
Mechanisms for conflict resolution .32 .018

Q2.4.4  
Existence of database .32 .018

Q2.15.1  
Individual and group motivation .31 .023

Q2.8.1  
Reactive planning .29 .033

Q2.21.3  
Training importance in the organisation .28 .041

Q2.18.2  
Communication between geographically separate training staff members .28 .044

Q2.19.2  
Equity of training manager's allocation of resources .27 .047

Q2.4.1  
Communication between training staff and line management .26 .056

Q2.21.1  
Training department and staff reputation .26 .058

Q2.9.2  
Channels of coordination .26 .061

Q2.19.3  
Staff inputs to planning .26 .061

Q2.11.1  
Training staff performance .26 .064

Q2.2.2  
Programs associated with new technology .25 .071

Q2.13.1  
Established standards of professional competence .24 .080

Q2.11.3  
Productivity of training staff .24 .083

Q2.16.1  
Qualification of training staff .24 .089

*Exact Pearson's two-tail significance
9.5.2 The relationship between overall organisational effectiveness and organisational climate

Overall organisational effectiveness has also a direct and highly significant relationship to organisational climate \((r = .46, p = .000)\). There is no significant relationship between organisational effectiveness and the state of the immediate environment \((r = .22, p = .16)\).

This finding suggests that perceived overall organisation effectiveness is related significantly to two of the variables, namely, the overall perception of effectiveness of the training system and the organisational climate. The implication is that the overall organisational effectiveness measure is an intervening variable between the training systems effectiveness and the 'quality of working life'. The quality of working life variable, which measures employee morale and job satisfaction, has a direct and positive relationship with the organisational effectiveness variable.

The significance of this finding is that improvement of the training system may not be directly related to improved employee morale and satisfaction, but may have a direct relationship with organisational effectiveness. Organisational effectiveness may then have an intervening relationship with employee morale and satisfaction. Therefore improvement in the training system may be related to improved overall organisational effectiveness, which may then be significantly related to the quality of working life. Kasperon (1985) in a study exploring the relationship between performance, decision making and structure, found that there was a positive correlation between job satisfaction and organisational effectiveness. This evidence is not conclusive. Studies show that job satisfaction is a correlate of organisational climate and not organisational performance (Friedlander and Marquiles: 1969; Litwin and Stringler: 1968; Lawler et.al: 1974).
9.5.3 **The relationship between organisational climate and the state of the immediate environment**

Organisational climate is, in this case, the intervening variable between overall organisational effectiveness and the state of the immediate environment. Organisational climate is significantly related to organisational effectiveness as stated above and is also significantly related to the state of the immediate organisational environment \( r = .22, p = .015 \).

The importance of this finding is that the state of the immediate environment, measured in terms of organisational dynamism, can have a bearing on employee morale and job satisfaction. The condition of the immediate organisational environment need not have a direct bearing on the overall effectiveness of the organisation or the training system. The condition of the immediate organisational environment can influence the quality of working life, either by improving the perceptions of the employees working in a dynamic and challenging environment, or making them more negative when the immediate environment is static.

9.6 **Summary**

The purpose of this chapter was to establish the contingency nature of organisations, which to an extent, are influenced by their environment. The behaviour of subsystems in an organisation is, to a large extent, thus contingent on the behaviour of the many parts that make up the system. This suggests that an effectiveness study of a subsystem should not ignore the impact of other subsystems of the organisation.

The major concerns of this chapter were the perceived environmental variables that may have a relationship with the training systems effectiveness. Specifically three such variables were related to the perceived overall training system effectiveness criterion. They were:
the overall organisational effectiveness,
the organisational climate, and
the state of the immediate environment of the organisation.

The correlational results show that the relationship of the three environmental variables to the overall training system effectiveness criterion is as explained in Figure 9.1. The overall training system effectiveness criterion is not directly related to organisational climate or to the state of the immediate environment. Overall training system effectiveness is related to overall organisational effectiveness \( r = .27, p = .003 \). Overall organisational effectiveness is in turn related to organisational climate \( r = .46, p = .000 \). Finally organisational climate is related to the state of the immediate environment \( r = .22, p = .015 \).

This web of relationships suggests that training systems effectiveness is related to the overall organisational effectiveness. The training system's interface with the external environment is through the organisational structure, since the training system effectiveness is not directly related to the organisational climate or the state of the immediate environment. The organisational structure, then, is said to constitute the interface link between the training system and the external environment (as described in Figure 3.2).
PART 5

CONCLUSION

Chapter 10: Conclusion, Appraisal of Results, and Recommendations
PART 5

CHAPTER 10

CONCLUSION, APPRAISAL OF THE RESULTS AND RECOMMENDATIONS

10.1 Introduction

Reviewing the objectives of this research provides a good point at which to start assessing its progress towards a useful conclusion. Objectives of the research were basically to develop a conceptual model for understanding the training system as a functioning strategic unit, to develop a set of criteria for exploring the dimensions that relate to assessing the system's effectiveness, and to better understand the relationship between the corporate training system and the organisation of which it is a part. The validity of the study and insights derived from it, must be reviewed within a framework that allows an objective appraisal of the results of this process.

10.2 Model Building

Models in Figure 3.1, 3.2 and 3.3 formed the schematic base for the current study. Figure 3.1 provided the overview of the organisational system, where the organisation is seen to interact with the total environmental system. In such a relationship the total system and the subsystems within it are seen to influence, and are influenced by, each other.

The subsystem parameters as defined in the Figure 3.1, describing the psychological, structural, technical goals and values and managerial nature of the system, were elaborated in chapter 9, in describing the overall training systems effectiveness.
Figure 3.2 shows a macro-model for analysing training effort. This model shows the relationship of the subsystem, the training department, with its component units and with the external environment. The interaction with the external environment is via the organisational interface. This relationship gives support to theorists who view the relevance of the organisational interface as being an integral part in the study of systems (Ackoff and Emery: 1972; Miller: 1974; Silverman: 1976).

The schematic model building process was extended in Figure 3.3, to study the relationships between training policies, training systems and the organisation on a micro level. In this theoretical model there are three basic inputs:

1. sets of states - as described by the existence of the training department, the training policies and the organisation.
2. sets of relationships - as described by the arrows.
3. sets of measurable objectives - as determined by the performance criteria measuring the sets of states.

All three basic inputs in the model are linked by means of a working hypothesis which relates states, relationships, and measures them against the degree of attainment of objectives.

In this thesis the main focus of study is the training department. The states of the system examined are the indices of the system’s effectiveness as it relates to the training department and its relationship to its environment. The states are affected by relationships, which are organisational features thought to contribute to systems effectiveness.

10.3 Measurement criteria for the evaluation of training system’s performance

Consideration of the sets of objectives is probably the most fundamental aspect of this research, as it is the validity of the
objectives established by the theoretical model in Figure 3.3 that determines whether it has some practical worth. Unless these objectives are both practical and realisable the purpose of such research may be questioned as constituting academic dilettantism.

It has been pointed out that the validity of these objectives must be checked within a framework that permits critical judgement of that validity.

Several such frameworks were noted in the literature. The works of Campbell et al (1970), French and Bell (1973) are some of them. The following three basic factors were considered of importance in the evaluation of training system effectiveness.

10.3.1 Multiple criteria

The first important factor in the measure of training system effectiveness in this research was the utilisation of multiple criteria. This approach was chosen because it reflected the number of different elements relating to the effectiveness of the training process. One of the major features of the theoretical model in the current research is that it does use just such multiple criteria.

The criteria for effectiveness were designed so that they could provide a means for decisions to be taken on the basis of the information they provided. By making the criteria of effectiveness very specific, this sort of practical decision potential hopefully was achieved. Examination of the criteria will show that many of the individual items are stated in terms of the adequacy of performance of those items.

10.3.2 Studying the criteria

The research also attempted to study the criteria themselves, their relationships with other organisational variables and in particular the relationship between internal and external criteria.
With respect to this factor, it can be noted that one of the major rationales for using a systematic approach is to provide a means for casting the criteria for relationship studies within a complex framework, which enables the expression of the interconnectedness of the many systemic components of effectiveness. The relationship between internal and external criteria forms one of the major foci of the research.

An attempt has been made to build into the theoretical model a number of items which are aimed at measuring the perceived relationships of the training system with its organisational environment in its routine operation. This provides an indirect measure of the rate at which the training system monitors its own evolutionary needs. Not having a longitudinal dimension to the research makes measurement of evolutionary trends within the training system itself difficult. The only possible way this constraint could be overcome within the present structure of the research was to focus on factors influencing effectiveness which reflect these evolutionary trends such as adaptability, structural flexibility, coordination and information processing. It is not felt that this requirement is particularly important, in that the focus on 'training' in a global sense is not likely to vary much, even though specific features of the training task may do so.

10.3.3 Practical and theoretical significance

Provision for saying something about the practical and theoretical significance of the results is important in the evaluation of the training system. One of the more useful practical advantages of a systems approach to the evaluation task is that it gives a manager an overview of the complete spectrum of training activities. This allows specific problems in training programs to be seen in the context of the structures and processes that created them. This is a distinct advantage compared to a simple singular assessment of whether the program has raised its trainees to a desired standard. The systems approach provides the information necessary to intervene in the training
system in such a way as to allow integration of structural changes allowing for expected repercussions of such changes. This is a very significant advantage, because one of the greatest limitations of a single factor evaluation of performance is that it often ignores the secondary contributions or limitations of factors beyond the immediate study. Similarly, it ignores the wide-ranging repercussions of interventions in the system beyond their immediate and intended context. Theoretical advantages accrue from having a far richer explanatory framework which provides the material for a more sophisticated explanation of observed and predicted performance.

The analysis of the process and content of the training itself has not been given a great deal of emphasis in the discussion surrounding the development of the theoretical model. However, it is an integral part of the model and has been referred to in great depth in chapters 1 and 2. Figure 3.2 shows a schematic representation of the broken down elements of the entire training process, and figure 3.3 shows, within the training subsystem, the elements of the training process.

The major objective of this research was to design a framework for exploring the dimensions that relate to the effectiveness of the training system using a conceptual systems model. Any effort to deal with the system aspects of the training impact, in particular with the question of how training effects are altered by interaction with other organisational subsystems were considered redundant. It could be said, however, that the major preoccupation of the model with the organisational interface is a direct consequence of understanding the manner in which the training system is related with other relevant organisational subsystems.

The critical conclusion of this research is that there is not enough specificity in the measurement of effectiveness by the present model to allow a practical manager to improve his systems design to better use his resources. The main barrier could be that the implications which can be drawn from an academic application of the model, may not be practical for managers, not because of the lack of
understanding but because of immediate usefulness. The potential does exist for its operationalising the model. One of the more often neglected resources is information and the investigation of the effectiveness of information handling processes, and channels included in this model. The model could help a manager to better plan the optimal use of his information resources. Unfortunately, whether many managers would make practical use of this potential is highly doubtful. Whether the results of this research are feasible and useful for management decision purposes, is something that will be determined only by pragmatic use of the results in practical circumstances.

The potential exists for many practical gains to come from the application of systems models to the study of the dimensions that relate to the effectiveness of training systems in actual organisations. Hopefully such a use can be made of the present model. With the strong concentration of investigation on the integration of the system's processes with those of the organisation which it serves, there are opportunities for management to optimise usage of its resources and to gain a better analytic understanding of the manner in which the training system relates to its environment.

The attempts to develop improved systems design is often an ignored aspect of any research that attempts to study relationships among variables of organisational performance. One of the most valuable uses of such a study is that it indicates ways in which the system's design can be improved. What is often not appreciated is that it requires a considerable degree of commitment to make such changes. Unless this commitment is made, there is often not a great deal to be gained from comprehensive training effectiveness system studies.

10.4 Appraisal of the results

The appraisal of the results will be presented in the order of the respective hypotheses established in Chapter 3. The results will then be summarised across hypotheses.
A confidence level of 0.05 was established for statistical significance. Correlations with significance levels of 0.06 to 0.10, although not statistically significant, have also been identified because of their relative strength.

10.4.1 Hypothesis 1: That there are definite perceived relationships between training policies and the effectiveness of training systems.

The measure of training effectiveness in an organisation is a function of many predisposing conditions. In this research sixty nine predisposing conditions are identified (see Table 8.1) and correlated to the overall training system effectiveness (Q3.2). This multi-dimensional approach to studying the dimensions of effectiveness was found most appropriate. The reasons for choosing this approach as opposed to the single goal model are explained in chapter 3.

Forty of the sixty nine training system effectiveness criteria are statistically significant ($p < 0.05$), and a further nine criteria are highly correlated ($p < 0.10$) to the overall training system effectiveness criterion (Q3.2).

These results suggest the respondents in the survey perceive that 71% of the training system effectiveness criteria have a relationship to the effectiveness of the overall training system. This evidence indicates that there is support for hypothesis 1.

In the context of the research, the relationship of the training system effectiveness criteria to the effectiveness of the overall training system was grouped into four categories as described by French and Bell (1973). The four categories are:

- The control subsystem
- The socio-technical subsystem
- The psycho-social subsystem
- The external interface subsystem
10.4.1.1 The control subsystem

The control subsystem determines the form, nature and limits of the training system. The following are the variables that describe the control subsystem:

<table>
<thead>
<tr>
<th>Q2.1.1</th>
<th>Written top management policy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \xi = 0.42 ) ( \eta = 0.002 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.1.2</th>
<th>Written training department policy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \xi = 0.46 ) ( \eta = 0.001 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.3.2</th>
<th>Long-range planning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \xi = 0.37 ) ( \eta = 0.007 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.7.1</th>
<th>Company-wide training needs analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \xi = 0.47 ) ( \eta = 0.000 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.3.1</th>
<th>Training resource allocation and utilisation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \xi = 0.29 ) ( \eta = 0.033 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.8.1</th>
<th>Reactive planning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \xi = 0.45 ) ( \eta = 0.001 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.8.2</th>
<th>Proactive planning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \xi = 0.41 ) ( \eta = 0.002 )</td>
</tr>
</tbody>
</table>

The training policy in this research is both:

(a) corporate management policy defining company-wide training missions and objectives;

(b) training department policy defining specific training missions and objectives.

The two training policy variables are found to be significantly related to the overall training effectiveness variable (Q3.2).

These two policies allow controls to be imposed on the activities of the training department. The top management policy, for example, defines the contribution that the training department needs to make to achieve organisational objectives. It also establishes the rules and procedures for training to follow in the organisation and the
standard and nature of training within the organisation. The policies also establish the guidelines for the allocation of training resources in the organisation.

The training policies are operationalised into two further levels of activities. The strategic and operational planning activities integrate the general philosophies established in the policy statements into workable forms within the organisation. Long-range planning or strategic planning is an activity of top management and is the major channel for determining the resources available for training needs and allocating these on a priority basis. The day-to-day planning, either immediate action planning based on evaluative feedback from training programs, or forward planning based on the development of new training techniques, is at an operational level and is within the control of the training department.

The data shows that the control variables described in this research are well supported and are significantly correlated to the perceived effectiveness of the training system.

10.4.1.2 Socio-technical subsystem

In describing the socio-technical subsystem, the research considered all the variables that described the training tasks, the technology employed in executing those tasks and the organisational nature of the training department.

The variables of the socio-technical subsystem that describes the training tasks are:

<table>
<thead>
<tr>
<th>Q2.14.3</th>
<th>Q2.6.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback of training performance evaluation</td>
<td>Competent evaluation of training performance</td>
</tr>
<tr>
<td>.28</td>
<td>.42</td>
</tr>
<tr>
<td>.044</td>
<td>.002</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2.14.2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of performance in training programs</td>
<td></td>
</tr>
<tr>
<td>.42</td>
<td>.002</td>
</tr>
</tbody>
</table>
Q2.6.1
Training task analysis based on educational inputs  .34  .014

Q2.6.2
Competent preparation of training programs  .26  .057

The training task variables are statistically well supported, with the exception of Q2.6.2 competent preparation of training programs.

The variable of the socio-technical subsystem that describes the technology employed in updating the training tasks is:

\[
\begin{array}{cc}
\mathbf{X} & \mathbf{P} \\
Q2.2.2 & \\
Training programs associated with new technology & .40 & .003 \\
\end{array}
\]

Technology update is seen to be important by the respondents, especially in industries that operate in a dynamic and fast changing environment. The computer industry is seen to be operating in such an environment.

In analysing the variables of the socio-technical subsystem that describe the organisational nature of the training system, two essential subdivisions were made. The operational aspects of the training system are categorised as the primary structural variables and the strategic aspects are categorised as the mediating or moderating structural variables.

The primary structural variables are:

\[
\begin{array}{cc}
\mathbf{X} & \mathbf{P} \\
Q2.5.2 & \\
Appropriateness of the staff size & .26 & .055 \\
Q2.6.2 & \\
The manner in which the workflow was ordered & .26 & .057 \\
Q2.18.2 & \\
The degree of cooperation between members of the training group, concentrated or dispersed geographically & .15 & .297 \\
\end{array}
\]
There is no statistically significant correlation between the primary structural variables and the overall effectiveness of the training system. This implies that the operational aspects of the training system, namely, staff size, ordering of workflow and the degree of cooperation among geographically dispersed training staff, do not contribute to greater perceptions of the overall effectiveness of the training organisation.

The mediating variables are basically concerned with the structure of authority, control and information. They are:

| Q1.12 | Existence of training manager | \( r = -.17 \) | \( p = .03 \) |
| Q2.15.1 | Motivation for individual and group performance | \( r = .34 \) | \( p = .010 \) |
| Q2.13.1 | Established standards of professional competence | \( r = .32 \) | \( p = .018 \) |
| Q2.14.1 | Formal system for monitoring performance | \( r = .43 \) | \( p = .001 \) |
| Q2.15.2 | Degree of formality in application of rewards and sanctions to training staff | \( r = .41 \) | \( p = .002 \) |
| Q2.4.4 | Existence of database | \( r = .35 \) | \( p = .010 \) |

A negative correlation is recorded in the perception of the respondents of the overall effectiveness of their organisation when the position of training manager is formalised. This implies that the existence of the position of training manager does not necessarily increase the perception of overall training system effectiveness in the organisation. The formalisation of authority does not then necessarily increase training effectiveness according to the respondents.

There is a significant relationship between the mediating variables determining control. The respondents perceive that motivation, professional standards, formal systems for monitoring performance, and the application of rewards and sanctions to the
training staff are important, and that they contribute to the overall effectiveness of the training organisation.

The information variable, existence of a database, is also significantly correlated with the overall effectiveness of the training organisation.

10.4.1.3 The psycho-social subsystem

The psycho-social subsystem considered the interpersonal dynamics of the training organisations social environment. There are a host of dimensions on which interpersonal interactions can be assessed. In this research, the major determinants in the interpersonal dynamics of the training organisation are the personality and leadership styles of the training manager.

The following are some of the important dimensions on which the interpersonal interactions were assessed.

<table>
<thead>
<tr>
<th>Q</th>
<th></th>
<th>r</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>Staff representation at top management level</td>
<td>.31</td>
<td>.025</td>
</tr>
<tr>
<td>17.1</td>
<td>Cooperation between training staff</td>
<td>.37</td>
<td>.006</td>
</tr>
<tr>
<td>13.2</td>
<td>Standards upheld by training manager</td>
<td>.20</td>
<td>.152</td>
</tr>
<tr>
<td>13.3</td>
<td>Room for negotiation for changing standards</td>
<td>.21</td>
<td>.132</td>
</tr>
<tr>
<td>12.1</td>
<td>Training manager encourages worker participation</td>
<td>.18</td>
<td>.202</td>
</tr>
<tr>
<td>20.1</td>
<td>Satisfactory relationship among training staff</td>
<td>.17</td>
<td>.214</td>
</tr>
<tr>
<td>18.1</td>
<td>Openness and flexibility of communication among the training staff</td>
<td>.29</td>
<td>.031</td>
</tr>
<tr>
<td>12.4</td>
<td>Training managers leadership style</td>
<td>-.05</td>
<td>.718</td>
</tr>
</tbody>
</table>
Q2.12.2  
Training manager delegates decision making  .13  .350

Q2.12.3  
Training manager exhibits communication skills  .22  .116

Q2.12.6  
Training manager supports the social needs of the employees  .15  .300

Q2.12.5  
Problem solving orientation of training manager  .40  .003

Q2.19.2  
Equity in the training manager's allocation of resources  .45  .001

Q2.17.2  
Problem-solving orientation of training staff  .39  .004

The research data seems to suggest that personality and leadership styles have very little to do with the overall effectiveness of the training system. The only significant support is for the training managers' problem-solving orientation ($r = .40, p = .003$) and the training managers' perceived equity in allocating resources ($r = .45, p = .001$). The response to the training manager's leadership style is a negative coefficient ($r = -.05$), which, though not statistically significant, does suggest an authoritarian training manager can have a perceived negative impact on the effectiveness of the overall training system.

The personality and the managerial qualities of the training staff are perceived to be of importance to the overall effectiveness of the training system by the respondents. Satisfactory working relationships, openness and flexibility of communication, cooperation and problem-solving attributes of the training staff are all positively correlated to overall effectiveness of the training organisation. Training staff representation at top management level is also considered important ($r = .31, p = .025$).

Two further measures of psycho-social dimensions were also considered. Rogers, Mogan and Guest (1971) suggested that apart from the internal qualities of the training personnel, the staff role within the organisation should also be considered. In this regard the
perceptions of the training department, the role of the training staff and the perceived importance of training within the organisation are important. The following staff roles and departmental perceptions were also correlated with the overall effectiveness of the training system:

Q2.21.2 Status and perceived importance of the training department as expressed by top management

\[
I = 0.31, \quad \rho = 0.025
\]

Q2.21.3 Perceived importance of training within the organisation

\[
I = 0.50, \quad \rho = 0.000
\]

Q2.4.1 Identification of training needs through regular communication between training staff and line management

\[
I = 0.35, \quad \rho = 0.009
\]

Q2.11.1 Performance of training staff

\[
I = 0.61, \quad \rho = 0.000
\]

Q2.11.2 Quality of training programs

\[
I = 0.57, \quad \rho = 0.000
\]

Q2.16.1 Efficient use of resources

\[
I = 0.46, \quad \rho = 0.001
\]

Q2.16.2 Appropriate experience of training staff

\[
I = 0.41, \quad \rho = 0.002
\]

It is quite obvious from the above data, that the perceived importance of training by top management \((I = 0.31)\) within the organisation \((I = 0.50)\) and training needs by line management \((I = 0.35)\) correlates highly with overall training effectiveness. The performance of the training staff, development of quality training programs, efficient use of training resources and their experience also contributes to an effective training system.

10.4.1.4 The external interface subsystem

One of the major propositions of this research is that the perceived effectiveness dimensions of an organisation's strategic unit, namely the training department, is based not only on the perceived effectiveness of the training system as a function of its
operations and the training it carries out, but also on its perceived effectiveness in integration processes between the training department and the greater organisational system.

The training department also interacts with the organisational environment via the external interface. In the current research, evidence indicates that the training department does not interact directly with the organisational environment. The organisational environment is significantly correlated to organisational climate ($r = .22, p = .58$).

The research considered two levels of operation in the external interface. They were:

1. interface with other departments of the organisation.

2. interface with the outside environment, relevant to the organisation.

**Inside the organisation**

In the interface with other departments within the organisation, the personnel department and the line management were considered as the two principal groups that interacted with the training department.

The results did not show any significance, when regular communication interchanges between the training department and the personnel department were correlated ($Q2.4.2: r = .02, p = .891$). The study did not support either the existence of mechanisms for reviewing and facilitating the integration of the training department with other areas of the organisation ($Q2.9.1: r = .14, p = .329$) or the existence of channels of communication between the training department and other departments, notably the personnel department and the company's long-range planning unit ($Q2.9.2: r = .24, p = .087$).
There was however a significant relationship between integration of company development planning, manpower planning, personnel planning and training planning (Q2.3.3: $r = .30$, $p = .030$).

There was no significant relationship between line involvement in the development of training policy and the effectiveness of the training system (Q2.1.3: $r = .08$, $p = .577$).

Outside the organisation

In the interface with the outside environment of the organisation, the respondents in the study perceived that regular communication interchange between the training department and external training agencies ($r = .41$, $p = .002$), the ability of the training staff to anticipate training issues and needs that may arise in the future ($r = .45$, $p = .001$) and the ability of the training staff to quickly adapt the training program when changes occur in the organisational environment ($r = .41$, $p = .002$) were significantly related to the overall effectiveness of the training system. They, however, did not perceive any significant relationship between the overall effectiveness of the training system and having access to appropriate specialised training and educational agencies ($r = .02$, $p = .904$).

In conclusion, Hypothesis 1 is generally supported. The results of the study show that forty out of the sixty nine training system effectiveness criteria have significant correlations ($p < .05$), while another nine variables have high correlations, though not statistically significant ($p < .10$), with the overall effectiveness of the training system.

The possibility of a 'halo effect' could also contribute to the high degree of positive relationships among variables. The overall positive impression of training may bias the raters' judgement of specific variables in this study. Future research in this area could seek to test this issue further.
10.4.2 Hypothesis 2: The effectiveness of the training system is perceived to be related to organisational effectiveness, organisational climate and the immediate state of the organisational environment.

The research also studied the relationship of the perceived external environment of the training department with the perceived effectiveness of the overall training system. In this study a unique relationship was found to exist between the four variables; overall effectiveness of the training system, the overall organisational effectiveness, the organisational climate and the state of the organisation's immediate environment.

The correlation matrix of the four variables showed a definite relationship pattern. From the research the following conclusions may be drawn:

1) That there is a perceived relationship between the effectiveness of the overall training system and the overall organisational effectiveness ($r = .27, p = .003$).

2) That there is a strong perceived relationship between the effectiveness of the organisation and the organisational climate ($r = .46, p = .000$).

3) That there is a perceived relationship between the state of the immediate organisational environment and organisational climate ($r = .22, p = .015$).

There was no statistically significant relationship between either the state of the organisation's immediate environment ($r = .05, p = .580$), or the organisational climate ($r = .13, p = .148$) and the overall effectiveness of the training system. This finding supports the view of other researchers (Lee: 1979 and Lorsch and Morse: 1974) in that the external context of the organisation is expected to influence internal organisational structure and function. They, in turn, can influence the internal measures which affect performance.
The conclusion of this research is that there are perceived relationships between training system effectiveness, organisational effectiveness, organisational climate and the immediate state of the organisational environment. The diagramatic representation of the relationships supporting Hypothesis 2 is stated in figure 10.1.

Figure 10.1 Perceived relationships of overall training system effectiveness, overall organisational effectiveness, organisational climate and the state of the immediate organisational environment.

10.4.3 Hypothesis 3: That perceptions of training system effectiveness varies with the size of organisations, type of industry and whether the training system is formalised.

The findings of the research indicated that there is no significant correlation between either training system effectiveness and the size of the organisation (r = .04, p = .633) or the type of industry (r = .01, p = .920). The research however shows that the perception of overall effectiveness of the training system is significantly related to the formalisation factors, namely training
function \( (r = -0.43, p = 0.000) \) and training department \( (r = -0.41, p = 0.000) \). These relationships are diagramatically presented in Figure 10.2.

Figure 10.2 Perceived relationship of training system effectiveness to size, industry type and formalisation

The position of the training manager, however does not seem to be related to the perception of the overall effectiveness of the training system \( (r = -0.15, p = 0.101) \).

The three formalisation factors; training function, training manager and training department, are all significantly correlated to size. Of the three relationships, the position of training manager shows the weakest correlation \( (r = -0.22, p = 0.018) \).

Size of the respondents' organisations is significantly correlated to the industries the organisations are in \( (r = 0.20, p = 0.032) \). The formalisation of the training department, though not statistically significant, is weakly correlated to the industry type \( (r = 0.16, p = 0.090) \).
The findings of the research suggest that the size of organisations and the type of industry are not directly related to the perceptions of overall effectiveness of training systems. The research however implies that the type of industry the respondent’s organisation is in has some relationship with the size of the organisation, which in turn is related to the perceived formalisation of training within the organisation.

Though Hypothesis 3 is not generally supported by the research findings, there is some support that perception of the training system effectiveness varies with the formalisation of the training function and the existence of the training department. The relationships suggested in figure 9.3, have relevance to the explanation of structure as a mediating factor in the study of organisational effectiveness.

10.5 Recommendations

The present study may provide an incentive for further testing of assumptions in such areas as the following:

1. Are employee’s perceptions of certain organisational performance issues valid indices for the measurement of organisational performance?

2. Is the effectiveness of strategic constituent units of an organisation related to and/or does it influence organisational performance?

3. Does organisational performance reflect and/or lead to changes in the effectiveness of strategic constituent units of the organisation?

4. Do the effectiveness factors of the strategic constituent units of an organisation differ in different organisations? If so, what are the best means to accurately define those factors?
The purpose of the present study was to try and answer some of the questions, relating to training units of organisations in different industries. While the results may not be generalisable, they do lend some support to the relationship between organisational training effectiveness factors as perceived by members of a particular industry category and the performance of organisations in that industry category. The validity of perceptions, the uniqueness of training systems as strategic constituent units of organisations and the relationships between those and other units, remain important for further research.

As with other branches of the social sciences, there is a continuing need for ongoing research to refine our knowledge further and to develop more insights and tools for management in their task of training an increasingly diverse workforce in complex organisations and operating within a dynamic and a changing environment.

One of the major purposes of the present research was the refinement of what is accepted as a highly experimental type of exploration study of training effectiveness. The ultimate step in the exploration task is to design training systems which have mechanisms for monitoring and evaluating performance built into the actual design of the system and its operating procedures. This sort of sophistication appears to be a development for the future but one for which we need to start preparing now. The current research was aimed at 'breaking the ground' for this task.
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APPENDIX
APPENDIX A

Questionnaire 1 : Managers Across Industries
FOREWORD

Mr. Christopher Selvarajah, a staff member of this School, is currently enrolled in a PhD programme in Organisation Behaviour at this University. To enable him to complete his research we would appreciate your support.

Your response will be helpful in promoting the research in this area and will provide valuable input into teaching programmes run by the School.

The researcher will endeavour to provide some feedback which may be of interest to you.

Thank you for your cooperation.

Dr. Stanley Petzall  
PhD Supervisor

Mr. Hugh Moore  
Dean  
School of Management
Dear Respondents,

As part of my PhD research in Training Systems Effectiveness, I am conducting a postal survey of middle managers and their perception of training systems' effectiveness within the company in which they work. In this regard I wish to request your cooperation.

The questionnaire is only to be answered if your company has a training department or personnel department that handles the training function. However for the purpose of statistical recording all questionnaires, including unanswered ones, should be returned in the enclosed self addressed envelope. This is also to avoid posting of a follow-up questionnaire or questionnaire that has not been returned. A very high valid response rate is important in order to obtain statistically valid results.

If there are questions that you are not sure of, please indicate this in the Respondents Column and I shall call you by telephone to ascertain your response.

It is imperative that all questions be answered. If a question is not applicable to your organisation please circle N/A and state your reason in the Respondents Column.

I wish to stress that the information received will be treated as strictly confidential and only number coded questionnaires will be sent out to the respondents. The results from the questionnaire will only reflect the total survey, and individual respondents and their place of employment will not be revealed.

Thank you for your participation.

Yours sincerely,

C.T. Selvarajah
Lecturer in Management

Please Return Questionnaire by 30th June 1987
SECTION 1: DEMOGRAPHIC DETAILS

Please √ in □

1. Age
   1) Under 25
   2) 26 - 35
   3) 36 - 45
   4) Over 45

2. Sex
   1) Male
   2) Female

3. How long have you been employed with your current employer?
   1) 0 - 5 years
   2) 6 - 10 years
   3) 11 - 15 years
   4) 16 - 20 years
   5) Over 20 years

4. How long have you been in the current position?
   1) 0 - 2 years
   2) 3 - 5 years
   3) 6 - 10 years
   4) 11 - 15 years
   5) Over 15 years

5. The level of seniority with your organisation?
   1) Managing Director
   2) General Manager
   3) Manager
   4) Other (please specify)

6. Name of your company:

7. What business is it in (eg. computer manufacturers, hotel, etc.)?

8. How many people does it employ?
   1) 50 - 100
   2) 100 - 200
   3) 200 - 500
   4) 500 - 1000
   5) Above 1000

9. Does your company conduct training for its employees? Yes □ No □

IF NO TO QUESTION 9 DO NOT PROCEED FURTHER, POST THE QUESTIONNAIRE BACK IN THE ENCLOSED SELF ADDRESSED ENVELOPE.

10. Does it have a training department? Yes □ No □

11. If NO to question 10, how does your company conduct training for its employees? If the training function is attached to the personnel department, please state.
12. Does your company have a training manager?
   Yes 1 [ ]  No 2 [ ]

13. How many training staff are there in your company
   1) 2 - 5 1 [ ]
   2) 5 - 10 2 [ ]
   3) 10 - 15 3 [ ]
   4) above 15 4 [ ]

14. Is training a major function in your company?
   Yes 1 [ ]  No 2 [ ]

15. If NO to question 14 should it be a major function?
   Yes 1 [ ]  No 2 [ ]

NOTE:

In some companies the training responsibility is vested in the personnel manager. If this is the case in your company, please assume that wherever in the questionnaire the words training manager (TM) appear it is the personnel manager in his capacity as the training manager that we are referring to.
QUESTIONNAIRE

CRITERIA OF ORGANISATIONAL TRAINING EFFECTIVENESS

Instructions:

For each item answer the questions by circling a number from 1 to 5 and please write the number in the corresponding box, to represent the degree to which your organisation fits the description. Low numbers represent low or minimum amounts and high numbers represent high or maximum amounts.

Please answer all questions. If you are not sure of the answer please write 'not sure' in the Respondents Column. If a question is not applicable to your organisation please circle N/A and state your reason in the Respondents Column.

A. Functional Effectiveness

1 I believe that there is:

(i) A written Top Management policy defining company-wide training missions and objectives.

(Low) 1 2 3 4 5 (High) N/A

(ii) A written Training Department policy defining specific training missions and objectives.

(Low) 1 2 3 4 5 (High) N/A

(iii) Involvement of line management in the development of training policy.

(Low) 1 2 3 4 5 (High) N/A

2 I believe that there is:

(i) Specific training programs based on employee requests.

(Low) 1 2 3 4 5 (High) N/A

(ii) Development of training programs associated with new technology.

(Low) 1 2 3 4 5 (High) N/A

(iii) Line feedback on evaluation of training courses and individual training.

(Low) 1 2 3 4 5 (High) N/A
3 I believe that there is:

(i) A clear priority for training resource allocation and utilization.

(Low) 1 2 3 4 5 (High) N/A

(ii) Long-range planning for future development of training services.

(Low) 1 2 3 4 5 (High) N/A

(iii) Integration of company development planning, manpower planning, personnel planning and training planning.

(Low) 1 2 3 4 5 (High) N/A

4 I believe that there is:

(i) Regular communication between training staff and line management on training activities and needs.

(Low) 1 2 3 4 5 (High) N/A

(ii) Regular communication interchange between the training department and the Personnel Department.

(Low) 1 2 3 4 5 (High) N/A

(iii) Regular communication interchange between the training department and external training agencies.

(Low) 1 2 3 4 5 (High) N/A

(iv) Existence of a database of regularly updated training information.

(Low) 1 2 3 4 5 (High) N/A

5 I believe that there is:

(i) Adequate financing for training purposes.

(Low) 1 2 3 4 5 (High) N/A

(ii) Appropriate staff to conduct training.

(Low) 1 2 3 4 5 (High) N/A

(iii) Adequate specialist training material.

(Low) 1 2 3 4 5 (High) N/A

(iv) Access to appropriate specialised external training and educational agencies.

(Low) 1 2 3 4 5 (High) N/A
6 I believe that there is:

(i) Analysis of the training tasks based on educational input.
    (Low) 1 2 3 4 5 (High) N/A

(ii) Competent preparation of training courses.
    (Low) 1 2 3 4 5 (High) N/A

(iii) Frequent meetings among the whole company staff to decide training needs.
    (Low) 1 2 3 4 5 (High) N/A

(iv) Competent evaluation of training performance.
    (Low) 1 2 3 4 5 (High) N/A

7 I believe that there is:

(i) A company-wide analysis of training needs.
    (Low) 1 2 3 4 5 (High) N/A

(ii) A regular survey of needs for specialised or extended training.
    (Low) 1 2 3 4 5 (High) N/A

8 I believe that there is:

(i) Immediate action planning based on evaluative feedback from previous training programs and short term needs.
    (Low) 1 2 3 4 5 (High) N/A

(ii) Forward planning based on the development of new training techniques and company development.
    (Low) 1 2 3 4 5 (High) N/A

9 I believe that there are:

(i) Mechanisms for reviewing and facilitating the integration of the Training Department with other areas of the organisation.
    (Low) 1 2 3 4 5 (High) N/A

(ii) Channels for co-ordination between the Training Department and the other departments of the organisation. Notably the Personnel Department and company long-range planning unit (or equivalent).
    (Low) 1 2 3 4 5 (High) N/A
10 I believe that there is:

(i) A mechanism for monitoring the development of potential conflict between the training system and the other areas of the organisation.
   (Low) 1 2 3 4 5 (High) N/A

(ii) Conflict resolution by means of confrontation of the issues and joint consultation.
   (Low) 1 2 3 4 5 (High) N/A

11 I believe that:

(i) The training staff are performing well in my company.
   (Low) 1 2 3 4 5 (High) N/A

(ii) The quality of the training programmes conducted by the training staff are good.
   (Low) 1 2 3 4 5 (High) N/A

(iii) The training staff get the maximum output from the resource inputs (money, people, equipment, etc.)
   (Low) 1 2 3 4 5 (High) N/A

12 I believe that:

(i) In the organisation worker participation in decision making is encouraged specifically by the Training Manager (TM).
   (Low) 1 2 3 4 5 (High) N/A

(ii) The TM encourages delegation of decision-making.
   (Low) 1 2 3 4 5 (High) N/A

(iii) Communication skills are exhibited by TM.
   (Low) 1 2 3 4 5 (High) N/A

(iv) There is a degree of dogmatism and authoritarianism exhibited by TM.
   (Low) 1 2 3 4 5 (High) N/A

(v) There is emphasis given to problem-solving/action orientation by TM.
   (Low) 1 2 3 4 5 (High) N/A

(vi) The TM supports the social needs of the employees.
   (Low) 1 2 3 4 5 (High) N/A
13 I believe that:

(i) Established standards of professional competence exists at both individual and group levels of the training department.
   (Low) 1 2 3 4 5 (High) N/A

(ii) That the established standards are upheld by TM.
   (Low) 1 2 3 4 5 (High) N/A

(iii) There is room for negotiations for the changing of standards if necessary.
   (Low) 1 2 3 4 5 (High) N/A

14 I believe that there:

(i) Exists a formal system for monitoring performance within the training system.
   (Low) 1 2 3 4 5 (High) N/A

(ii) Is assessment of individual, group and intergroup performance in training programs.
   (Low) 1 2 3 4 5 (High) N/A

(iii) Is immediate feedback of the evaluation of training performance.
   (Low) 1 2 3 4 5 (High) N/A

15 I believe that there is:

(i) Motivation for individual and group performance in the training system.
   (Low) 1 2 3 4 5 (High) N/A

(ii) A degree of formality in application of rewards and sanctions to the training staff.
   (Low) 1 2 3 4 5 (High) N/A
16 I believe that:

(i) Training staff are well qualified for the job they perform.

(Low) 1 2 3 4 5 (High) N/A

(ii) Training staff have appropriate experience (independent of (i) above).

(Low) 1 2 3 4 5 (High) N/A

(iii) There are opportunities for training staff to upgrade skills and qualifications.

(Low) 1 2 3 4 5 (High) N/A

(iv) There is co-operation between Training staff and staff from other departments.

(Low) 1 2 3 4 5 (High) N/A

17 I believe that there is:

(i) Cooperation between training staff members in team operations.

(Low) 1 2 3 4 5 (High) N/A

(ii) Problem-solving/action orientation of training staff

(Low) 1 2 3 4 5 (High) N/A

(iii) Conceptual flexibility of individual training staff members.

(Low) 1 2 3 4 5 (High) N/A

(iv) Cohesiveness within the training group decision making process.

(Low) 1 2 3 4 5 (High) N/A

18 I believe that there is:

(i) Openness and flexibility of communication among the training staff.

(Low) 1 2 3 4 5 (High) N/A

(ii) The existence of channels of communication between geographically separate members of the training staff.

(Low) 1 2 3 4 5 (High) N/A

(iii) Access by individual training staff to group information sources.

(Low) 1 2 3 4 5 (High) N/A
19 I believe:

(i) The TM is successful in integrating efforts of individual staff.

(Low)  1  2  3  4  5  (High) N/A

(ii) In the perceived equity of TM's allocation of resources.

(Low)  1  2  3  4  5  (High) N/A

(iii) There is appropriateness and acceptability of staff inputs to planning.

(Low)  1  2  3  4  5  (High) N/A

(iv) There is training in group efficiency in problem-solving.

(Low)  1  2  3  4  5  (High) N/A

20 I believe:

(i) That the staff relationship among the training staff is satisfactory.

(Low)  1  2  3  4  5  (High) N/A

(ii) There exist mechanisms for conflict resolution by means of frank confrontation of issues and consultation between parties.

(Low)  1  2  3  4  5  (High) N/A

21 I believe:

(i) The Training department and its staff have a good reputation in the organisation.

(Low)  1  2  3  4  5  (High) N/A

(ii) The interests of training staff is effectively represented at the Top Management.

(Low)  1  2  3  4  5  (High) N/A

(iii) There is perceived importance of training within the organisation.

(Low)  1  2  3  4  5  (High) N/A

(iv) The training staff is generally perceived, within the company to be competent.

(Low)  1  2  3  4  5  (High) N/A
22 I believe:

(i) The training staff in my company are good at anticipating training issues and needs that may come up in the future and planning for training so as to minimize their effects.

   (Low) 1 2 3 4 5 (High) N/A [ ]

(ii) The training staff are quick to accept and adjust to changes required in the training programmes when changes occur in the organisational environment (eg. technological change).

   (Low) 1 2 3 4 5 (High) N/A [ ]

Additional information on the training function in your organisation will be welcome.
APPENDIX B

Questionnaire 2: Environmental Conditions
31 July 1987

URGENT RESPONSE IS REQUESTED

Dear Respondents,

In the final effort to complete my PhD research in Training System effectiveness I need to have the measures of the following four questions. I am only posting this supplementary questionnaire to respondents whose previous return of their first questionnaire was deemed acceptable for the research. Thus it is imperative that I get a 100% return. I thank you for your support.

Please answer all four questions. For each item answer by circling a number from 1 to 5 and please write the number in the corresponding box, to represent the degree to which your organisation fits the description. Low numbers represent low or minimum responses and high numbers represent high or maximum responses.

1. How do you rate the overall effectiveness of your organisation?
   (low) 1 2 3 4 5 (high) _____

2. How do you rate the overall effectiveness of your training department or systems (if training is part of personnel department, etc.)?
   (low) 1 2 3 4 5 (high) _____

3. How do you rate the overall organisational climate of your organisation?
   Organisational climate is defined as "the quality of working life". It includes your estimate of the level of employee morale and satisfaction.
   (Poor) 1 2 3 4 5 (good) _____

4. How would you categorise the immediate environment of your organization?
   Or put in another way, to what degree is the immediate environment of your organisation rapidly changing or stable? For example the immediate organisational environment of a bank is the financial sector of the economy.
   (low) 1 2 3 4 5 (high) static conditions, dynamic conditions _____

Please return Questionnaire in self addressed envelope

Christopher T. Selvarajah
APPENDIX C

Pilot Questionnaire 1:

Administered to Deakin MBA students at the Residential School in Geelong, May 1987.

Pilot Questionnaire 2:

Administered to ICSA students in Melbourne, May 1987.
25 March 1987

Dear MBA832 Participants,

I will be most obliged if you could answer this pilot Questionnaire. This Questionnaire is part of my Ph.D research into Training Effectiveness and it will be administered to a motor company when it is found suitable after this pilot test of the Questionnaire. Therefore, the purpose of this exploratory exercise is to check on the validity of the Questionnaire for empirical research.

I would like to emphasise that this is not part of your course and you are not obliged to participate. Your response, however, will help in my academic pursuit.

Please return this Questionnaire.

Yours/sincerely,

C.T. Selvarajah

Jg

enc.
Instructions:

For each item answer the questions by circling a number from 1 to 5 where low numbers represent low or minimum amounts and high numbers represent high or maximum amounts.

A. Functional Effectiveness

1 I believe that there is:

(i) Existence of written Top Management policy defining company wide training missions and objectives.
    (Low) 1 2 3 4 5 (High)

(ii) Existence of written Training Department policy defining specific training missions and objectives.
     (Low) 1 2 3 4 5 (High)

(iii) Involvement of line management in the development of training policy.
      (Low) 1 2 3 4 5 (High)

2 I believe that there is:

(i) Specific training programs based on employee requests.
    (Low) 1 2 3 4 5 (High)

(ii) Development of training programs associated with new technology.
     (Low) 1 2 3 4 5 (High)

(iii) Line feed-back on evaluation of training courses and individual training.
     (Low) 1 2 3 4 5 (High)

3 I believe that there is:

(i) Existence of clear proprieties for resource allocation and utilisation.
    (Low) 1 2 3 4 5 (High)

(ii) Existence of long-range planning for future development of training services.
     (Low) 1 2 3 4 5 (High)

(iii) Integration of company development planning, manpower planning, personnel planning and training planning.
     (Low) 1 2 3 4 5 (High)

4 I believe that there is:

(i) Regular communication with line management on training activities and needs.
    (Low) 1 2 3 4 5 (High)

(ii) Regular communication interchange with the Personnel Department.
     (Low) 1 2 3 4 5 (High)

(iii) Regular communication interchange with external training agencies.
      (Low) 1 2 3 4 5 (High)

(iv) Existence of a database of regularly updated training information.
     (Low) 1 2 3 4 5 (High)
5 I believe that there is:

(i) Adequate financing for training purposes.
    (Low) 1 2 3 4 5 (High)
(ii) Appropriate staff to conduct training.
     (Low) 1 2 3 4 5 (High)
(iii) Adequate specialist training material.
      (Low) 1 2 3 4 5 (High)
(iv) Access to appropriate specialised external training and educational agencies.
     (Low) 1 2 3 4 5 (High)

6 I believe that there is:

(i) Analysis of the training tasks based on educational input.
    (Low) 1 2 3 4 5 (High)
(ii) Competent preparation of training courses.
     (Low) 1 2 3 4 5 (High)
(iii) Timely meeting of training needs.
      (Low) 1 2 3 4 5 (High)
(iv) Competent evaluation of training performance.
     (Low) 1 2 3 4 5 (High)

7 I believe that there is:

(i) Existence of a company-wide training needs analysis.
    (Low) 1 2 3 4 5 (High)
(ii) Regular survey of needs for specialised or extended training.
     (Low) 1 2 3 4 5 (High)

8 I believe that there is:

(i) Reactive planning based on evaluative feedback and short term needs.
    (Low) 1 2 3 4 5 (High)
(ii) Proactive planning based on the development of new training techniques or company development or expansion.
     (Low) 1 2 3 4 5 (High)

9 I believe that there is:

(i) The existence of mechanisms for reviewing and facilitating the integration of the Training Department with the other areas of the organisation.
    (Low) 1 2 3 4 5 (High)
(ii) Channels for co-ordination between the Training Department and its specialist sources of information and direction. Notably the Personnel Department and company long-range planning unit (or equivalent).
     (Low) 1 2 3 4 5 (High)

10 I believe that there is:

(i) Adequate mechanism for monitoring the development of potential conflict between the training system and the other areas of the organisation.
    (Low) 1 2 3 4 5 (High)
(ii) An orientation towards conflict resolution by means of confrontation of the issues and joint consultation.
     (Low) 1 2 3 4 5 (High)
B Structural Effectiveness

11 I believe that:

(i) Worker participation is encouraged by the Training Manager (TM).
    (Low) 1 2 3 4 5 (High)

(ii) The TM encourages delegation of decision-making.
    (Low) 1 2 3 4 5 (High)

(iii) Communication skills are exhibited by TM.
    (Low) 1 2 3 4 5 (High)

(iv) There is a degree of dogmatism and authoritarianism exhibited by TM.
    (Low) 1 2 3 4 5 (High)

(v) There is emphasis given to problem-solving/action orientation by TM.
    (Low) 1 2 3 4 5 (High)

(vi) The TM supports the social needs of the employees.
    (Low) 1 2 3 4 5 (High)

12 I believe that:

(i) There exists established standards of professional competence at both individual and group levels of the training department.
    (Low) 1 2 3 4 5 (High)

(ii) That the established standards are upheld by TM.
    (Low) 1 2 3 4 5 (High)

(iii) There is flexibility in the manner in which standards are upheld.
    (Low) 1 2 3 4 5 (High)

13 I believe that there:

(i) Exists a formal system for monitoring performance within the training system.
    (Low) 1 2 3 4 5 (High)

(ii) Is a balanced assessment of individual, group and intergroup performance in training programs.
    (Low) 1 2 3 4 5 (High)

(iii) Is timeliness of feedback of evaluation of training performance.
    (Low) 1 2 3 4 5 (High)

14 I believe that there is:

(i) Motivation for individual and group performance in the training system.
    (Low) 1 2 3 4 5 (High)

(ii) A degree of formality in application of rewards and sanctions to the training staff.
    (Low) 1 2 3 4 5 (High)

15 I believe that:

(i) Training staff are well qualified for the job they perform.
    (Low) 1 2 3 4 5 (High)

(ii) There is appropriateness of training staff experience (independent of (i) above).
    (Low) 1 2 3 4 5 (High)

(iii) There are opportunities for training staff to upgrade skills and qualifications.
    (Low) 1 2 3 4 5 (High)

(iv) There is co-operation between Training staff and staff from other departments.
    (Low) 1 2 3 4 5 (High)
16 I believe that there is:

(i) Cooperation between training staff members in team operations.
    (Low) 1 2 3 4 5 (High)
(ii) Problem-solving/action orientation of training staff
     (Low) 1 2 3 4 5 (High)
(iii) Conceptual flexibility of individual training staff members.
      (Low) 1 2 3 4 5 (High)
(iv) Appropriateness of group decision making process.
     (Low) 1 2 3 4 5 (High)

17 I believe that there is:

(i) Openness and flexibility of communication among the training staff.
    (Low) 1 2 3 4 5 (High)
(ii) Existence of channels of communication between geographically
     separate members of the training staff.
     (Low) 1 2 3 4 5 (High)
(iii) The existence of individual training staff access to group
     information sources.
      (Low) 1 2 3 4 5 (High)

18 I believe:

(i) The TM is successful in integrating efforts of individual staff.
    (Low) 1 2 3 4 5 (High)
(ii) In the perceived equitability of TM's allocation of resources.
     (Low) 1 2 3 4 5 (High)
(iii) there is appropriateness and acceptability of staff inputs to
     planning
     (Low) 1 2 3 4 5 (High)
(iv) There is training group efficiency in problem-solving.
     (Low) 1 2 3 4 5 (High)

19 I believe:

(i) The appropriateness of the level of internal training staff conflict.
    (Low) 1 2 3 4 5 (High)
(ii) There exists mechanisms for conflict resolution by means of frank
     confrontation of issues and consultation between parties.
     (Low) 1 2 3 4 5 (High)

20 I believe:

(i) There is organisational reputation of the Training department and
    its staff.
    (Low) 1 2 3 4 5 (High)
(ii) There is effectiveness of representation of interests of training
     staff particularly to Top Management.
     (Low) 1 2 3 4 5 (High)
(iii) There is perceived importance of training within the organisation.
     (Low) 1 2 3 4 5 (High)
(iv) There is appropriateness of perceptions of training staff's
     professional competence.
     (Low) 1 2 3 4 5 (High)
PILOT QUESTIONNAIRE 2
CRITERIA OF ORGANISATIONAL TRAINING EFFECTIVENESS

Instructions:

For each item answer the questions by circling a number from 1 to 5 to represent the degree to which your organisation fits the description. Low numbers represent low or minimum amounts and high numbers represent high or maximum amounts. Please answer all questions. If you are not sure of the answer please circle 3 on the scale. 3 is the mid point and is the point of indifference.

A. Functional Effectiveness

1 I believe that there is:

(i) A written Top Management policy defining company wide training missions and objectives.
   (Low) 1 2 3 4 5 (High)

(ii) A written Training Department policy defining specific training missions and objectives.
    (Low) 1 2 3 4 5 (High)

(iii) Involvement of line management in the development of training policy
     (Low) 1 2 3 4 5 (High)

2 I believe that there is:

(i) Specific training programs based on employee requests.
    (Low) 1 2 3 4 5 (High)

(ii) Development of training programs associated with new technology.
     (Low) 1 2 3 4 5 (High)

(iii) Line feed-back on evaluation of training courses and individual training.
     (Low) 1 2 3 4 5 (High)

3 I believe that there is:

(i) A clear priority for training resource allocation and utilisation.
    (Low) 1 2 3 4 5 (High)

(ii) Long-range planning for future development of training services.
     (Low) 1 2 3 4 5 (High)

(iii) Integration of company development planning, manpower planning, personnel planning and training planning.
     (Low) 1 2 3 4 5 (High)

4 I believe that there is:

(i) Regular communication between training staff and line management on training activities and needs.
    (Low) 1 2 3 4 5 (High)

(ii) Regular communication interchange between the training department and the Personnel Department.
     (Low) 1 2 3 4 5 (High)

(iii) Regular communication interchange between the training department and external training agencies.
     (Low) 1 2 3 4 5 (High)

(iv) Existence of a database of regularly updated training information.
     (Low) 1 2 3 4 5 (High)
5 I believe that there is:

(i) Adequate financing for training purposes.
   (Low) 1 2 3 4 5 (High)

(ii) Appropriate staff to conduct training.
    (Low) 1 2 3 4 5 (High)

(iii) Adequate specialist training material.
     (Low) 1 2 3 4 5 (High)

(iv) Access to appropriate specialised external training and educational agencies.
    (Low) 1 2 3 4 5 (High)

6 I believe that there is:

(i) Analysis of the training tasks based on educational input.
    (Low) 1 2 3 4 5 (High)

(ii) Competent preparation of training courses.
     (Low) 1 2 3 4 5 (High)

(iii) Frequent meetings among the whole company staff to decide training needs.
     (Low) 1 2 3 4 5 (High)

(iv) Competent evaluation of training performance.
     (Low) 1 2 3 4 5 (High)

7 I believe that there is:

(i) A company-wide analysis of training needs.
    (Low) 1 2 3 4 5 (High)

(ii) A regular survey of needs for specialised or extended training.
     (Low) 1 2 3 4 5 (High)

8 I believe that there is:

(i) Immediate action planning based on evaluative feedback from previous training programs and short term needs.
    (Low) 1 2 3 4 5 (High)

(ii) Forward planning based on the development of new training techniques and company development.
     (Low) 1 2 3 4 5 (High)

9 I believe that there are:

(i) Mechanisms for reviewing and facilitating the integration of the Training Department with other areas of the organisation.
    (Low) 1 2 3 4 5 (High)

(ii) Channels for co-ordination between the Training Department and the other departments of the organisation. Notably the Personnel Department and company long-range planning unit (or equivalent).
    (Low) 1 2 3 4 5 (High)

10 I believe that there is:

(i) A mechanism for monitoring the development of potential conflict between the training system and the other areas of the organisation.
    (Low) 1 2 3 4 5 (High)

(ii) Conflict resolution by means of confrontation of the issues and joint consultation.
     (Low) 1 2 3 4 5 (High)
B Structural Effectiveness

11 I believe that:

(i) In the organisation worker participation in decision making is encouraged specifically by the Training Manager (TM).
   (Low) 1 2 3 4 5 (High)

(ii) The TM encourages delegation of decision-making.
     (Low) 1 2 3 4 5 (High)

(iii) Communication skills are exhibited by TM.
      (Low) 1 2 3 4 5 (High)

(iv) There is a degree of dogmatism and authoritarianism exhibited by TM
     (Low) 1 2 3 4 5 (High)

(v) There is emphasis given to problem-solving/action orientation by TM
    (Low) 1 2 3 4 5 (High)

(vi) The TM supports the social needs of the employees.
     (Low) 1 2 3 4 5 (High)

12 I believe that:

(i) Established standards of professional competence exists at both individual and group levels of the training department.
    (Low) 1 2 3 4 5 (High)

(ii) That the established standards are upheld by TM.
     (Low) 1 2 3 4 5 (High)

(iii) There is room for negotiations for the changing of standards if necessary.
      (Low) 1 2 3 4 5 (High)

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(i) Exists a formal system for monitoring performance within the training system.
    (Low) 1 2 3 4 5 (High)

(ii) Is assessment of individual, group and intergroup performance in training programs.
     (Low) 1 2 3 4 5 (High)

(iii) Is immediate feedback of the evaluation of training performance.
     (Low) 1 2 3 4 5 (High)

14 I believe that there is:

(i) Motivation for individual and group performance in the training system.
    (Low) 1 2 3 4 5 (High)

(ii) A degree of formality in application of rewards and sanctions to training staff.
     (Low) 1 2 3 4 5 (High)

15 I believe that:

(i) Training staff are well qualified for the job they perform.
    (Low) 1 2 3 4 5 (High)

(ii) Training staff have appropriate experience (independent of (i) above).
     (Low) 1 2 3 4 5 (High)

(iii) There are opportunities for training staff to upgrade skills and qualifications.
     (Low) 1 2 3 4 5 (High)

(iv) There is co-operation between Training staff and staff from other departments.
     (Low) 1 2 3 4 5 (High)
16 I believe that there is:

(i) Cooperation between training staff members in team operations.
    (Low) 1 2 3 4 5 (High)
(ii) Problem-solving/action orientation of training staff
     (Low) 1 2 3 4 5 (High)
(iii) Conceptual flexibility of individual training staff members.
      (Low) 1 2 3 4 5 (High)
(iv) Cohesiveness within the training group decision making process.
     (Low) 1 2 3 4 5 (High)

17 I believe that there is:

(i) Openness and flexibility of communication among the training staff.
    (Low) 1 2 3 4 5 (High)
(ii) The existence of channels of communication between geographically
     separate members of the training staff.
     (Low) 1 2 3 4 5 (High)
(iii) Access by individual training staff to group information sources.
      (Low) 1 2 3 4 5 (High)

18 I believe:

(i) The TM is successful in integrating efforts of individual staff.
    (Low) 1 2 3 4 5 (High)
(ii) In the perceived equity of TM's allocation of resources.
     (Low) 1 2 3 4 5 (High)
(iii) There is appropriateness and acceptability of staff inputs to
      planning
      (Low) 1 2 3 4 5 (High)
(iv) There is training in group efficiency in problem-solving.
     (Low) 1 2 3 4 5 (High)

19 I believe:

(i) That the staff relationship among the training staff is satisfactory
     (Low) 1 2 3 4 5 (High)
(ii) There exist mechanisms for conflict resolution by means of frank
     confrontation of issues and consultation between parties.
     (Low) 1 2 3 4 5 (High)

20 I believe:

(i) The Training department and its staff have a good reputation in the
    organisation.
    (Low) 1 2 3 4 5 (High)
(ii) The interests of training staff is effectively represented at the
     Top Management.
     (Low) 1 2 3 4 5 (High)
(iii) There is perceived importance of training within the organisation.
     (Low) 1 2 3 4 5 (High)
(iv) The training staff is generally perceived, within the company to be
     competent.
     (Low) 1 2 3 4 5 (High)
APPENDIX D

Respondents in the 'other' category

<table>
<thead>
<tr>
<th>Code NO</th>
<th>Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>031</td>
<td>Department Head</td>
</tr>
<tr>
<td>041</td>
<td>Department Officer</td>
</tr>
<tr>
<td>055</td>
<td>Insurance Agent</td>
</tr>
<tr>
<td>102</td>
<td>Principal Education Officer</td>
</tr>
<tr>
<td>111</td>
<td>Section Engineers, Water Board</td>
</tr>
<tr>
<td>119</td>
<td>Production Engineer</td>
</tr>
<tr>
<td>137</td>
<td>Office of Correction Programme Coordinator</td>
</tr>
<tr>
<td>151</td>
<td>Prospect Electricity Officer</td>
</tr>
<tr>
<td>168</td>
<td>Marketing Officer</td>
</tr>
<tr>
<td>177</td>
<td>CSR Engineer</td>
</tr>
<tr>
<td>201</td>
<td>RAA Colonel</td>
</tr>
<tr>
<td>202</td>
<td>Pilot</td>
</tr>
<tr>
<td>217</td>
<td>Computer Trainer</td>
</tr>
<tr>
<td>228</td>
<td>Production Supervisor - Sawmill</td>
</tr>
<tr>
<td>231</td>
<td>Management Consultant</td>
</tr>
<tr>
<td>241</td>
<td>Management Systems Development Officer</td>
</tr>
<tr>
<td>250</td>
<td>Uranium Mining Specialist Consultant</td>
</tr>
<tr>
<td>267</td>
<td>Accountant</td>
</tr>
<tr>
<td>276</td>
<td>Superintendent</td>
</tr>
<tr>
<td>305</td>
<td>CAE Lecturer</td>
</tr>
<tr>
<td>313</td>
<td>Bank Officer</td>
</tr>
<tr>
<td>340</td>
<td>Airlines Engineer</td>
</tr>
<tr>
<td>355</td>
<td>Communications Engineer</td>
</tr>
<tr>
<td>270</td>
<td>State Government Public Servant</td>
</tr>
<tr>
<td>433</td>
<td>Senior Administrative Officer</td>
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<tr>
<td>446</td>
<td>Project Engineer</td>
</tr>
<tr>
<td>472</td>
<td>Mining Engineer</td>
</tr>
<tr>
<td>124</td>
<td>Aviation Technical Specialist</td>
</tr>
<tr>
<td>128</td>
<td>Hotel Department Head</td>
</tr>
<tr>
<td>167</td>
<td>Computer Consultant</td>
</tr>
</tbody>
</table>
238  Research Agronomist
270  Regional Director Bureau of Meteorology
301  IBM Sales Staff
425  Phillip Products Group Leader
343  CSR Senior Business Analyst
474  Senior Bank Officer
005  Coal Preparation Superintendent
485  International Business Consultant
APPENDIX E

Respondents' Place of Employment

1. Government

Department of Community Services
Darwin City Council
Victorian State Government
Road Construction Authority of Victoria
Melbourne Water, Sewerage and Drainage Board
Telecom Australia
Commonwealth Office of Correction
Telecom Australia
Prospect Electricity
Commonwealth Ministry of Education
Australian Public Service - Overseas Property Division
Australian Trade Commission
Australian Public Service - Department of Housing and Construction
Australian Department of Aviation
Calvary Hospital
Commonwealth Department of Local Government
Department of Aviation
Department of Foreign Affairs, Foreign Aid
Illawarra Health Service
Engineering and Water Supply Department
Commonwealth Department of Primary Industry
Sydney County Council
Victorian Department of Agricultural and Rural Affairs
Federal Government
City of Camberwell
Australian Taxation Office
Australian War Memorial
Victorian Rural Water Commission
Telecom Australia
Victorian Road Construction Authority
Victorian State Electricity Commission
Wyong Shire Council
State Rail Authority of NSW
Department of Aviation
Victorian State Electricity Commission
Victorian State Government
Victorian Community Services
Commonwealth Bureau of Meteorology
State Electricity Supply Authority NSW
Rural Water Commission of Victoria
Australian Department of Community Service
Alfred Hospital
State Electricity Supply Authority NSW

n = 44

2. Defence

Royal Australian Navy (RAN) n = 5
Royal Australian Airforce (RAA) n = 2
Royal Australian Army Forces (RAAF) n = 6
Australian Defence Department n = 1

3. Exploration

MHP
Mobil Oil Australia Ltd
British Petroleum Pty Ltd
Romgur Uranium Mines P/L
Shell Oil Australia Ltd
Newlands Coal Pty Ltd
Broken Hill Associated Smelters
Comalco Aluminium
Shell Oil Company Australia Ltd
Collinsville Coal Company
Shell Company Australia Ltd
CSR Ltd
CRA Limited
Newlands Coal Pty Ltd

n = 14

4. Manufacturing

Cadbury Schweppes Pty Ltd
HBP, Coated Products Division, Wester Port
Hoechst Australia Ltd
General Electric Company
Alcon
SPC Ltd
General Electric Plastics (Aust) P/L
CSR Ltd
ICI Australia
Kellogg (Aust) P/L
Associated Pulp & Paper Mills
APM Wood Products
Dow Chemicals (Aust) Ltd
Smith Kline & French Labs (Aust) Ltd
Smorgon Fibre Containers
Containers Packaging
ICI Australia Pty Ltd (Explosives)
CSR, Readymix
Altona Petrochemical Company
Leighton Manufacturing P/L
Pioneer Concrete P/L
Reckitt and Coleman Aust Ltd
Carlton United Brewers P/L
APPMM
Dow Chemical Australia Ltd
CSR Ltd
Luke and Singer
Phillips Consumer Products
Southern Farmers Cooperative Ltd
Whitco Pty Ltd

n = 30
5. Service

World Vision of Australia
Qantas Airways
Hilton Hotels of Australia P/L
TNT Security P/L

n = 4

6. Retail

Target Australia
Coles Myer Ltd
Phillips
Elders Pastoral
Elders IXL Ltd
Target Australia P/L
Myer Stores
Target Australia P/L

n = 8

7. Education

Gordon Technical College
Northern Territory Department of Education
Deakin University
Riverina-Murray Institute of Higher Education
ACT Schools Authority
Darling Downs CAE
La Trobe University
Swinburne Institute of Technology

n = 8
8. **Professional**

Elders Trustee & Executive Co Ltd
Moore & Bevins
McLachlan Consultants
McWilliam & Partners P/L
PA Consultants
Snowy Mountain Engineering Consultancy
Morgan and Banks P/L

\[ n = 7 \]

9. **Insurance & Finance**

National Mutual
AMP
State Government Insurance (SGIO)
Occidental Life Insurance
National Mutual Life
National Australia Bank
Royal Insurance
Westpac Banking Corporation
Westpac Banking Corporation
Westpac Banking Corporation
Esanda Ltd
AMP
National Mutual Royal Bank

\[ n = 13 \]

10. **Computer**

Honeywell Ltd
Wang Computers P/L
Prime Computers
IBM Australia Ltd
Hewlett Packard
IBM Australia Ltd

\[ n = 6 \]
11. Other

Thiess Contractors P/L
Spraypave P/L
Gynaclab P/L

n = 3
APPENDIX F

Some interview questions:

1. Does performance discrepancy exist in your company?

2. Is it important?

3. Is training a potential solution?

4. Is training a preferred solution?

5. Have you had any form of training in your company?

6. If yes, what type?

7. Have you been briefed on the function of the training department and how it may contribute to the overall performance of the company?

8. Do you believe that as an employee you are entitled to know how the training department operates, and how it may help you in becoming a better employee?

9. Do you think the training department can make you a better employee?

10. What is your general opinion or view of your training department and its function?